

APPENDIX A

Human Receptor Characteristics

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Health Canada, 2004 - Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	8.2	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	8.83	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	2.25E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	2.59E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.21E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	3.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	0.00E+00	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	1.15E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	7.72E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	5.14E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	2.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	6.69E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	6.49E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	2112	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	652	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	3620	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.06	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	1	years	Health Canada, 2004
BW	Body Weight	8	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		0	Invalid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	--	kg/day	--
F _{ap}	Fraction of Aboveground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Garden Produce		0	Invalid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	--	kg/day	--
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Belowground Garden Produce		0	Invalid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	--	kg/day	--
F _{bp}	Fraction of Belowground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Garden Fruit		0	Invalid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	--	kg/day	--
F _{fr}	Fraction of Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		0	Invalid Pathway	
IR _{water}	Ingestion Rate of Water	--	L/day	--
F _{water}	Fraction of Water Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.1 Intake Parameters for the Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		1	Valid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	0.74	L/day	US EPA Exposure Factors Handbook: Table 14-16
F _{bmfat}	Fraction of Breast Milk that is Fat	0.04	unitless	US EPA Exposure Factors Handbook: Table 14-16
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
BW _{mother}	Body Weight - mother	62.2	kg	Richardson, 1997 (geometric mean - females)

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	1643	days	Based on 7 months to 4.99 years of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	16.5	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	80	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	24.70	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	5.24E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.14E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	6.73E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.50E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	6.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	1.14E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	4.29E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	2.41E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	4.33E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	8.12E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	1.91E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.36E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	3470	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	890	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	6130	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.06	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	5	years	Health Canada, 2004
BW	Body Weight	17	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.005	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.003	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.007	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.01	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	0.325	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	0.60	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.2 Intake Parameters for the Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc-s}	Non Carcinogenic Effects - Summer	27740	days	Based on a 75 year lifetime
AT _{nc-w}	Non Carcinogenic Effects - Winter	27740	days	Based on a 75 year lifetime
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.4	kg	Calculated
IR _{soil}	Soil Ingestion Rate	24	mg/d	Calculated
IR _{dust}	Dust Ingestion Rate	4.41	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.35E-02	kg/day	Calculated
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.90E-03	kg/day	Calculated
IR _{bp}	Ingestion Rate of Belowground Produce	1.21E-02	kg/day	Calculated
IR _{fr}	Ingestion Rate of Garden Fruit	8.74E-03	kg/day	Calculated
IR _{wat}	Water Ingestion Rate	1.32E+00	L/day	Calculated
IR _{fish}	Fish Ingestion Rate	2.48E-02	kg/day	Calculated
IR _{wgame}	Wild Game Ingestion Rate	6.89E-04	kg/day	Calculated
IR _{beef}	Beef Ingestion Rate	5.11E-02	kg/day	Calculated
IR _{milk}	Milk Ingestion Rate	2.97E-01	L/day	Calculated
IR _{pork}	Pork Ingestion Rate	1.52E-02	kg/day	Calculated
IR _{poultry}	Poultry Ingestion Rate	3.49E-02	kg/day	Calculated
IR _{egg}	Egg Ingestion Rate	1.78E-02	kg/day	Calculated
SA _{summer}	Exposed Surface Area - Summer	8759	cm ² /day	Calculated
SA _{winter}	Exposed Surface Area - Winter	1355	cm ² /day	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ² /day	Calculated
SA _{water}	Exposed Surface Area - Water	15969	cm ² /day	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.06	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Calculated
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.013	kg/day	Calculated
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	Calculated
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.012	kg/day	Calculated
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	Calculated
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.02	kg/day	Calculated
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	0.325	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.32	L/day	Calculated
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.3 Intake Parameters for the Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	20440	days	Based on the 56-year duration of adulthood
AT _{nc}	Non Carcinogenic Effects	12775	days	Equal to Exposure Duration
AT _{nc-s}	Non Carcinogenic Effects - Summer	12775	days	Equal to Exposure Duration
AT _{nc-w}	Non Carcinogenic Effects - Winter	12775	days	Equal to Exposure Duration
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.2	kg	Richardson, 1997 Geomean Female Table 2.2
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	0.00	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Richardson, 1997 Geomean Female Table 4.1
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.55E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	4.06E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	1.27E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	8.10E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	1.50E+00	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	2.93E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	8.48E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	5.58E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	2.56E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	1.63E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	3.75E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.92E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	9661	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	1431	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	17670	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.06	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.063	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.938	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.016	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.013	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	0.325	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.50	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.4 Intake Parameters for the Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Health Canada, 2004 - Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.417	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	8.2	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	8.83	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	2.25E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	2.59E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.21E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	3.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	0.00E+00	kg/day	Health Canada, 2004
IR _{wgame}	Wild Game Ingestion Rate	0.00E+00	kg/day	Health Canada, 2004
IR _{beef}	Beef Ingestion Rate	7.72E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	5.14E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	2.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	6.69E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	6.49E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	2112	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	652	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	3620	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.42	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	1	years	Health Canada, 2004
BW	Body Weight	8	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		0	Invalid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	--	kg/day	--
F _{ap}	Fraction of Aboveground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Garden Produce		0	Invalid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	--	kg/day	--
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Belowground Garden Produce		0	Invalid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	--	kg/day	--
F _{bp}	Fraction of Belowground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Garden Fruit		0	Invalid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	--	kg/day	--
F _{fr}	Fraction of Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		0	Invalid Pathway	
IR _{water}	Ingestion Rate of Water	--	L/day	--
F _{water}	Fraction of Water Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.5 Intake Parameters for the First Nations Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		1	Valid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	0.74	L/day	US EPA Exposure Factors Handbook: Table 14-16
F _{bmfat}	Fraction of Breast Milk that is Fat	0.04	unitless	US EPA Exposure Factors Handbook: Table 14-16
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
BW _{mother}	Body Weight - mother	62.2	kg	Richardson, 1997 (geometric mean - females)

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	1643	days	Based on 7 months to 4.99 years of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.417	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	16.5	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	80	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	24.70	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	5.24E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.14E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	6.73E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.50E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	6.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	9.50E-02	kg/day	Health Canada, 2004
IR _{wgame}	Wild Game Ingestion Rate	8.50E-02	kg/day	Health Canada, 2004
IR _{beef}	Beef Ingestion Rate	2.41E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	4.33E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	8.12E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	1.91E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.36E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	3470	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	890	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	6130	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.42	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	5	years	Health Canada, 2004
BW	Body Weight	17	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.005	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.003	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.007	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		1	Valid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	0.1	kg/day	Health Canada, 2004
F _{game}	Fraction of Wild Game Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.10	kg/day	Health Canada, 2004
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	0.60	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.6 Intake Parameters for the First Nations Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc-s}	Non Carcinogenic Effects - Summer	27740	days	Based on a 75 year lifetime
AT _{nc-w}	Non Carcinogenic Effects - Winter	27740	days	Based on a 75 year lifetime
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.417	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.4	kg	Calculated
IR _{soil}	Soil Ingestion Rate	24	mg/d	Calculated
IR _{dust}	Dust Ingestion Rate	4.41	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.35E-02	kg/day	Calculated
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.90E-03	kg/day	Calculated
IR _{bp}	Ingestion Rate of Belowground Produce	1.21E-02	kg/day	Calculated
IR _{fr}	Ingestion Rate of Garden Fruit	8.74E-03	kg/day	Calculated
IR _{wat}	Water Ingestion Rate	1.32E+00	L/day	Calculated
IR _{fish}	Fish Ingestion Rate	2.04E-01	kg/day	Calculated
IR _{wgame}	Wild Game Ingestion Rate	2.35E-01	kg/day	Calculated
IR _{beef}	Beef Ingestion Rate	5.11E-02	kg/day	Calculated
IR _{milk}	Milk Ingestion Rate	2.97E-01	L/day	Calculated
IR _{pork}	Pork Ingestion Rate	1.52E-02	kg/day	Calculated
IR _{poultry}	Poultry Ingestion Rate	3.49E-02	kg/day	Calculated
IR _{egg}	Egg Ingestion Rate	1.78E-02	kg/day	Calculated
SA _{summer}	Exposed Surface Area - Summer	8759	cm ² /day	Calculated
SA _{winter}	Exposed Surface Area - Winter	1355	cm ² /day	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ² /day	Calculated
SA _{water}	Exposed Surface Area - Water	15969	cm ² /day	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.42	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Calculated
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.013	kg/day	Calculated
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	Calculated
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.012	kg/day	Calculated
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	Calculated
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		1	Valid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	0.2	kg/day	Calculated
F _{game}	Fraction of Wild Game Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.20	kg/day	Calculated
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.32	L/day	Calculated
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.7 Intake Parameters for the First Nations Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	20440	days	Based on the 56-year duration of adulthood
AT _{nc}	Non Carcinogenic Effects	12775	days	Equal to Exposure Duration
AT _{nc-s}	Non Carcinogenic Effects - Summer	12775	days	Equal to Exposure Duration
AT _{nc-w}	Non Carcinogenic Effects - Winter	12775	days	Equal to Exposure Duration
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.417	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.2	kg	Richardson, 1997 Geomean Female Table 2.2
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	0.00	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Richardson, 1997 Geomean Female Table 4.1
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.55E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	4.06E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	1.27E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	8.10E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	1.50E+00	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	2.20E-01	kg/day	Health Canada, 2004
IR _{wgame}	Wild Game Ingestion Rate	2.70E-01	kg/day	Health Canada, 2004
IR _{beef}	Beef Ingestion Rate	5.58E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	2.56E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	1.63E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	3.75E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.92E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	9661	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	1431	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	17670	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.42	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.583	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.016	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	0.233	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	0.178	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.013	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	0.106	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	0.116	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		1	Valid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	0.3	kg/day	Health Canada, 2004
F _{game}	Fraction of Wild Game Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.22	kg/day	Health Canada, 2004
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.50	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.8 Intake Parameters for the First Nations Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Health Canada, 2004 - Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	183	days	Health Canada, 2004 - Based on 0 - 6 months of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.333	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	8.2	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	8.83	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	2.25E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	2.59E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.21E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	3.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	0.00E+00	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	1.15E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	7.72E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	5.14E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	2.39E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	6.69E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	6.49E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	2112	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	652	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	3620	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.33	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	0.50	years	Health Canada, 2004
BW	Body Weight	8.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	2.10	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	8.83	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	1	years	Health Canada, 2004
BW	Body Weight	8	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	2112	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	652	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	320	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		0	Invalid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	--	kg/day	--
F _{ap}	Fraction of Aboveground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Garden Produce		0	Invalid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	--	kg/day	--
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Belowground Garden Produce		0	Invalid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	--	kg/day	--
F _{bp}	Fraction of Belowground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Garden Fruit		0	Invalid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	--	kg/day	--
F _{fr}	Fraction of Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		0	Invalid Pathway	
IR _{water}	Ingestion Rate of Water	--	L/day	--
F _{water}	Fraction of Water Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.9 Intake Parameters for the Subsistence Farmer Resident Infant Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		1	Valid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	0.74	L/day	US EPA Exposure Factors Handbook: Table 14-16
F _{bmfat}	Fraction of Breast Milk that is Fat	0.04	unitless	US EPA Exposure Factors Handbook: Table 14-16
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	8.2	kg	Health Canada, 2004
BW _{mother}	Body Weight - mother	62.2	kg	Richardson, 1997 (geometric mean - females)

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	1643	days	Based on 7 months to 4.99 years of age
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.333	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	16.5	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	80	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	24.70	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	5.24E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.14E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	6.73E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.50E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	6.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	1.14E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	4.29E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	2.41E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	4.33E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	8.12E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	1.91E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.36E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	3470	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	890	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	6130	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.33	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	5	years	Health Canada, 2004
BW	Body Weight	17	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.005	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.003	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.007	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.01	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	0.60	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.10 Intake Parameters for the Subsistence Farmer Resident Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef				
		1	Valid Pathway	
IR _{beef}	Ingestion Rate of Beef	0.02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
F _{beef}	Fraction of Beef Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Milk				
		1	Valid Pathway	
IR _{milk}	Ingestion Rate of Milk	0.43	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
F _{milk}	Fraction of Milk Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Pork				
		1	Valid Pathway	
IR _{pork}	Ingestion Rate of Pork	0.01	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
F _{pork}	Fraction of Pork Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Poultry				
		1	Valid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	0.02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
F _{poultry}	Fraction of Poultry Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Egg				
		1	Valid Pathway	
IR _{egg}	Ingestion Rate of Eggs	0.01	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
F _{egg}	Fraction of Eggs Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Breast Milk				
		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc-s}	Non Carcinogenic Effects - Summer	27740	days	Based on a 75 year lifetime
AT _{nc-w}	Non Carcinogenic Effects - Winter	27740	days	Based on a 75 year lifetime
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.333	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.4	kg	Calculated
IR _{soil}	Soil Ingestion Rate	24	mg/d	Calculated
IR _{dust}	Dust Ingestion Rate	4.41	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.35E-02	kg/day	Calculated
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.90E-03	kg/day	Calculated
IR _{bp}	Ingestion Rate of Belowground Produce	1.21E-02	kg/day	Calculated
IR _{fr}	Ingestion Rate of Garden Fruit	8.74E-03	kg/day	Calculated
IR _{wat}	Water Ingestion Rate	1.32E+00	L/day	Calculated
IR _{fish}	Fish Ingestion Rate	2.48E-02	kg/day	Calculated
IR _{wgame}	Wild Game Ingestion Rate	6.89E-04	kg/day	Calculated
IR _{beef}	Beef Ingestion Rate	5.11E-02	kg/day	Calculated
IR _{milk}	Milk Ingestion Rate	2.97E-01	L/day	Calculated
IR _{pork}	Pork Ingestion Rate	1.52E-02	kg/day	Calculated
IR _{poultry}	Poultry Ingestion Rate	3.49E-02	kg/day	Calculated
IR _{egg}	Egg Ingestion Rate	1.78E-02	kg/day	Calculated
SA _{summer}	Exposed Surface Area - Summer	8759	cm ² /day	Calculated
SA _{winter}	Exposed Surface Area - Winter	1355	cm ² /day	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ² /day	Calculated
SA _{water}	Exposed Surface Area - Water	15969	cm ² /day	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.33	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.44	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.21	m ³ /d	Calculated
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	24	mg-soil/day	Calculated
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	4.41	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Calculated
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	8759	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1355	cm ²	Calculated
SA _{hand}	Exposed Surface Area - hand	822	cm ²	Calculated
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.013	kg/day	Calculated
F _{ap}	Fraction of Aboveground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	Calculated
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.012	kg/day	Calculated
F _{bp}	Fraction of Belowground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	Calculated
F _{fr}	Fraction of Fruit Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.02	kg/day	Calculated
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.32	L/day	Calculated
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated

Table A.11 Intake Parameters for the Subsistence Farmer Resident Composite Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef				
		1	Valid Pathway	
IR _{beef}	Ingestion Rate of Beef	0.05	kg/day	Calculated
F _{beef}	Fraction of Beef Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Milk				
		1	Valid Pathway	
IR _{milk}	Ingestion Rate of Milk	0.30	L/day	Calculated
F _{milk}	Fraction of Milk Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Pork				
		1	Valid Pathway	
IR _{pork}	Ingestion Rate of Pork	0.02	kg/day	Calculated
F _{pork}	Fraction of Pork Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Poultry				
		1	Valid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	0.03	kg/day	Calculated
F _{poultry}	Fraction of Poultry Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Egg				
		1	Valid Pathway	
IR _{egg}	Ingestion Rate of Eggs	0.02	kg/day	Calculated
F _{egg}	Fraction of Eggs Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Operating Life of Facility
BW	Body Weight	62.4	kg	Calculated
Ingestion of Breast Milk				
		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	20440	days	Based on the 56-year duration of adulthood
AT _{nc}	Non Carcinogenic Effects	12775	days	Equal to Exposure Duration
AT _{nc-s}	Non Carcinogenic Effects - Summer	12775	days	Equal to Exposure Duration
AT _{nc-w}	Non Carcinogenic Effects - Winter	12775	days	Equal to Exposure Duration
Exposure Times				
ET	Exposure Time	1	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.333	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	62.2	kg	Richardson, 1997 Geomean Female Table 2.2
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	0.00	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Richardson, 1997 Geomean Female Table 4.1
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.55E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	4.06E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	1.27E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	8.10E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	1.50E+00	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	2.93E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	8.48E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	5.58E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	2.56E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	1.63E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	3.75E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.92E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	9661	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	1431	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	17670	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1.00	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.33	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	62.20	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.667	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.250	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	7.60E-07	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.750	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	14.59	m ³ /d	Health Canada, 2004
ET	Exposure Time	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	62	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		1	Valid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	0.016	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
F _{ap}	Fraction of Aboveground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Protected Garden Produce		1	Valid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	0.004	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Belowground Garden Produce		1	Valid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	0.013	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
F _{bp}	Fraction of Belowground Produce Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
WP	Washing / Peeling Factor	1	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Garden Fruit		1	Valid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	0.0	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
F _{fr}	Fraction of Fruit Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		1	Valid Pathway	
IR _{fish}	Ingestion Rate of Fish	0.03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_cont}	Fraction of Caught Fish from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.50	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004

Table A.12 Intake Parameters for the Subsistence Farmer Resident Mother Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef				
		1	Valid Pathway	
IR _{beef}	Ingestion Rate of Beef	0.06	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
F _{beef}	Fraction of Beef Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Milk				
		1	Valid Pathway	
IR _{milk}	Ingestion Rate of Milk	0.26	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
F _{milk}	Fraction of Milk Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Pork				
		1	Valid Pathway	
IR _{pork}	Ingestion Rate of Pork	0.02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
F _{pork}	Fraction of Pork Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Poultry				
		1	Valid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	0.04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
F _{poultry}	Fraction of Poultry Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Egg				
		1	Valid Pathway	
IR _{egg}	Ingestion Rate of Eggs	0.02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
F _{egg}	Fraction of Eggs Consumed from Site	1	unitless	US EPA Exp. Factors Handbook - Table 13-71
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	0.5	years	Operating Life of Facility
BW	Body Weight	62.2	kg	Health Canada, 2004
Ingestion of Breast Milk				
		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	27740	days	Based on a 75 year lifetime
AT _{nc}	Non Carcinogenic Effects	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-s}	Non Carcinogenic Effects - Summer	1643	days	Based on 7 months to 4.99 years of age
AT _{nc-w}	Non Carcinogenic Effects - Winter	1643	days	Based on 7 months to 4.99 years of age
Exposure Times				
ET	Exposure Time	0.416666667	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.292	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.042	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.313	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.021	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
General Parameters				
BW	Body Weight	16.5	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	80	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	24.70	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	5.24E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	3.14E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	6.73E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	1.50E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	6.00E-01	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	1.14E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	4.29E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	2.41E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	4.33E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	8.12E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	1.91E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.36E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	3470	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	890	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	6130	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	0.42	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.04	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	4.50	years	Health Canada, 2004
BW	Body Weight	16.50	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.292	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.021	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.313	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	9.30	m ³ /d	Health Canada, 2004
ET	Exposure Time	0.416666667	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	80	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	24.70	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	5	years	Health Canada, 2004
BW	Body Weight	17	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	3470	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	890	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	430	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		0	Invalid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	--	kg/day	--
F _{ap}	Fraction of Aboveground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Garden Produce		0	Invalid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	--	kg/day	--
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Belowground Garden Produce		0	Invalid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	--	kg/day	--
F _{bp}	Fraction of Belowground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Garden Fruit		0	Invalid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	--	kg/day	--
F _{fr}	Fraction of Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	0.60	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	4.5	years	Health Canada, 2004
BW	Body Weight	16.5	kg	Health Canada, 2004

Table A.13 Intake Parameters for the Commercial Toddler Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Averaging Times				
AT _c	Carcinogenic Effects	20440	days	Based on the 56-year duration of adulthood
AT _{nc}	Non Carcinogenic Effects	12775	days	Equal to Exposure Duration
AT _{nc-s}	Non Carcinogenic Effects - Summer	12775	days	Equal to Exposure Duration
AT _{nc-w}	Non Carcinogenic Effects - Winter	12775	days	Equal to Exposure Duration
Exposure Times				
ET	Exposure Time	0.416666667	unitless	Assumed
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.292	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.042	unitless	Health Canada, 2004 or Assumed
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.313	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.021	unitless	Health Canada, 2004 or Assumed
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF	Exposure Frequency	365	days/year	Calculated
EF _{Summer}	Exposure Frequency - Summer	214	days/year	Environment Canada, 2007
EF _{Winter}	Exposure Frequency - Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
General Parameters				
BW	Body Weight	70.7	kg	Health Canada, 2004
IR _{soil}	Soil Ingestion Rate	20	mg/d	Health Canada, 2004
IR _{dust}	Dust Ingestion Rate	0.00	mg/d	Calculated - OMOE Rationale, Appendix B.5
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
IR _{ap}	Ingestion Rate of Aboveground Exposed Produce	1.55E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-9
IR _{app}	Ingestion Rate of Aboveground Protected Produce	4.06E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-10
IR _{bp}	Ingestion Rate of Belowground Produce	1.27E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-11
IR _{fr}	Ingestion Rate of Garden Fruit	8.10E-03	kg/day	US EPA Exposure Factors Handbook, 1999: Table 9-7
IR _{wat}	Water Ingestion Rate	1.50E+00	L/day	Health Canada, 2004
IR _{fish}	Fish Ingestion Rate	2.93E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 10-61
IR _{wgame}	Wild Game Ingestion Rate	8.48E-04	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-6
IR _{beef}	Beef Ingestion Rate	5.58E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-3
IR _{milk}	Milk Ingestion Rate	2.56E-01	L/day	US EPA Exposure Factors Handbook, 1999: Table 11-2
IR _{pork}	Pork Ingestion Rate	1.63E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-4
IR _{poultry}	Poultry Ingestion Rate	3.75E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-5
IR _{egg}	Egg Ingestion Rate	1.92E-02	kg/day	US EPA Exposure Factors Handbook, 1999: Table 11-7
SA _{summer}	Exposed Surface Area - Summer	9661	cm ² /day	Richardson, 1997
SA _{winter}	Exposed Surface Area - Winter	1431	cm ² /day	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ² /day	Richardson, 1997
SA _{water}	Exposed Surface Area - Water	17670	cm ² /day	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
INHALATION				
Inhalation of Constituents through Direct Inhalation - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
ET	Exposure Time	0.42	unitless	Assumed
EF	Exposure Frequency	365.00	days/year	Calculated
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	70.70	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	0.00	kg/m ³	Health Canada, 2004
ET _{Sum-Out-Inh}	Exposure Time - Summer - Outdoor - Inhalation	0.04	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214.00	days/year	Environment Canada, 2007
ED	Exposure Duration	35.00	years	Operating Life of Facility
BW	Body Weight	70.70	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Summer - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Inh}	Exposure Time - Summer - Indoor - Inhalation	0.292	unitless	Health Canada, 2004 or Assumed
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Inh}	Exposure Time - Winter - Outdoor - Inhalation	0.021	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Inhalation of Constituents through Resuspended Soil/Dust - Winter - Indoor		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
TSP	Total Suspended Particulate	2.50E-04	kg/m ³	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Inh}	Exposure Time - Winter - Indoor - Inhalation	0.313	unitless	Health Canada, 2004 or Assumed
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Inhalation of Constituents through Soil Vapours - All Year		1	Valid Pathway	
IR _{inh}	Inhalation Rate	15.80	m ³ /d	Health Canada, 2004
ET	Exposure Time	0.416666667	unitless	Assumed
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
SOIL INGESTION				
Ingestion of Constituents via Soil/Dust - Summer - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Ingestion of Constituents via Soil/Dust - Winter - Outdoor		1	Valid Pathway	
IR _{soil}	Incidental Ingestion Rate-Soil	20	mg-soil/day	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Summer - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.80	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Ingestion of Constituents via Dust - Winter - Indoor		1	Valid Pathway	
IR _{dust}	Incidental Ingestion Rate-Dust	0.00	mg-soil/day	Calculated - OMOE Rationale, Appendix B.5
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
DERMAL CONTACT				
Dermal Contact with Soil/Dust - Summer - Outdoor		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Dermal Contact with Soil/Dust - Winter - Outdoor		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{body}	Soil Adherence Rate - body	0.01	mg-soil/cm ²	Health Canada, 2004
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Dermal Contact with Dust - Summer - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.1	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.8	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
ET _{Sum-Ind-Ing}	Exposure Time - Summer - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35	years	Operating Life of Facility
BW	Body Weight	71	kg	Health Canada, 2004
Dermal Contact with Dust - Winter - Indoor		1	Valid Pathway	
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
SAF _{hand}	Soil Adherence Rate - hand	0.10	mg-soil/cm ²	Health Canada, 2004
FR _{soili}	Fraction of Dust from Soil - indoor	0.800	unitless	Hawley, 1985 (Risk Analysis, V3, No. 4)
FR _{snow}	Fraction of Winter that Site is not Snow Covered	0.61	unitless	Environment Canada, 2007
ET _{Winter-Ind-Ing}	Exposure Time - Winter - Indoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Direct Dermal Contact - Vapour & Particulate - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Summer		1	Valid Pathway	
SA _{summer}	Exposed Surface Area - Summer	9661	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Sum-Out-Ing}	Exposure Time - Summer - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Summer}	Exposure Frequency-Summer	214	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004
Direct Dermal Contact - Soil Vapours - Winter		1	Valid Pathway	
SA _{winter}	Exposed Surface Area - Winter	1431	cm ²	Richardson, 1997
SA _{hand}	Exposed Surface Area - hand	890	cm ²	Richardson, 1997
ET _{Winter-Out-Ing}	Exposure Time - Winter - Outdoor - Ingestion & Dermal Contact	1	unitless	Health Canada, 2004
EF _{Winter}	Exposure Frequency-Winter	151	days/year	Environment Canada, 2007
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
FOOD INGESTION				
Ingestion of Aboveground Garden Produce		0	Invalid Pathway	
IR _{ap}	Ingestion Rate of Aboveground Produce	--	kg/day	--
F _{ap}	Fraction of Aboveground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Garden Produce		0	Invalid Pathway	
IR _{app}	Ingestion Rate of Aboveground Protected Produce	--	kg/day	--
F _{app}	Fraction of Aboveground Protected Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Belowground Garden Produce		0	Invalid Pathway	
IR _{bp}	Ingestion Rate of Belowground Produce	--	kg/day	--
F _{bp}	Fraction of Belowground Produce Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Garden Fruit		0	Invalid Pathway	
IR _{fr}	Ingestion Rate of Garden Fruit	--	kg/day	--
F _{fr}	Fraction of Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Traditional Plants		0	Invalid Pathway	
IR _{atp}	Ingestion Rate of Aboveground Traditional Plants	--	kg/day	--
F _{atp}	Fraction of Aboveground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Aboveground Protected Traditional Plants		0	Invalid Pathway	
IR _{aptp}	Ingestion Rate of Aboveground Protected Traditional Plants	--	kg/day	--
F _{aptp}	Fraction of Aboveground Protected Traditional Plants Consumed from	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Belowground Traditional Plants		0	Invalid Pathway	
IR _{btp}	Ingestion Rate of Belowground Traditional Plants	--	kg/day	--
F _{btp}	Fraction of Belowground Traditional Plants Consumed from Site	--	unitless	--
WP	Washing / Peeling Factor	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Fruit		0	Invalid Pathway	
IR _{wf}	Ingestion Rate of Wild Fruit	--	kg/day	--
F _{wfr}	Fraction of Wild Fruit Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Wild Game		0	Invalid Pathway	
Ir _{wg}	Ingestion Rate of Wild Game	--	kg/day	--
F _{game}	Fraction of Wild Game Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - Lake		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_lake}	Fraction of Total Fish Ingestion from Lake	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Fish - River		0	Invalid Pathway	
IR _{fish}	Ingestion Rate of Fish	--	kg/day	--
F _{fish}	Fraction of Total Fish Consumed that is Caught by Receptor	--	unitless	--
F _{fish_cont}	Fraction of Caught Fish from Site	--	unitless	--
F _{fish_river}	Fraction of Total Fish Ingestion from River	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Surface Water		1	Valid Pathway	
IR _{water}	Ingestion Rate of Water	1.50	L/day	Health Canada, 2004
F _{water}	Fraction of Water Consumed from Site	1	unitless	Site Specific
EF	Exposure Frequency	365	days/year	Calculated
ED	Exposure Duration	35.0	years	Operating Life of Facility
BW	Body Weight	70.7	kg	Health Canada, 2004

Table A.14 Intake Parameters for the Commercial Adult Receptor for the Durham-York Region

Parameter	Description	Value	Units	Source
Ingestion of Beef		0	Invalid Pathway	
IR _{beef}	Ingestion Rate of Beef	--	kg/day	--
F _{beef}	Fraction of Beef Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Milk		0	Invalid Pathway	
IR _{milk}	Ingestion Rate of Milk	--	L/day	--
F _{milk}	Fraction of Milk Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Pork		0	Invalid Pathway	
IR _{pork}	Ingestion Rate of Pork	--	kg/day	--
F _{pork}	Fraction of Pork Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Poultry		0	Invalid Pathway	
IR _{poultry}	Ingestion Rate of Poultry	--	kg/day	--
F _{poultry}	Fraction of Poultry Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Egg		0	Invalid Pathway	
IR _{egg}	Ingestion Rate of Eggs	--	kg/day	--
F _{egg}	Fraction of Eggs Consumed from Site	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
Ingestion of Breast Milk		0	Invalid Pathway	
IR _{bmilk}	Ingestion Rate of Breast Milk	--	L/day	--
F _{bmfat}	Fraction of Breast Milk that is Fat	--	unitless	--
EF	Exposure Frequency	--	days/year	--
ED	Exposure Duration	--	years	--
BW	Body Weight	--	kg	--
BW _{mother}	Body Weight - mother	--	kg	--