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References for Appendix B-2

Project Documents

None

Codes and Standards

None

Other Documents

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Introduction

This appendix provides equations that supplement the equations provided in the text of section 6 (Environmental Modeling) of this work plan. Equations that support the soil, surface water, and sediment accumulation modeling and data are provided in this appendix. Equations shown in section 6 refer to the immediate supporting equations within Appendix B-2. Parameters that are functions of other parameters are presented only in Appendix B-2 (for example, the equation for the soil loss constant due to biotic and abiotic degradation, presented in Eq. B2-1, is referenced in the definition of parameters used to estimate the total soil loss constant, which is shown in Eq. B2-10, which is referenced in equations 6-1 through 6-4 in section 6.2). 6ection 6 presents only the "high-level" eɟuations; all supporting eɟuations (including supporting equations for parameters that appear in other supporting equations) are presented in this appendix. A description of how the parameters shown in this appendix link to the equations in section 6 is provided for each equation in this appendix.

Because many of the equations used in the soil modeling are functions of other equations, the intermediary calculations necessary to calculate the chemical of potential concern (Cl PC) or radionuclide of potential concern (o1 PC) concentrations in soil should be performed in a logical order. The equations for these intermediary calculations can be found in this appendix; values for the contaminant-specific parameters are presented in Appendix B-1, tables B1-1 (for organic Cl PCs), B1-2 (inorganic Cl PCs), and B1-3 (o1 PCs). The order for these intermediary calculations is as follows:

1. Individual Cl PC and o1 PC soil loss mechanisms should be estimated first. These include soil loss constant due to biotic and abiotic degradation (see Eq. B2-1), soil loss constant due to radiological decay (Eq. B2-2), soil loss constant due to leaching (Eq. B2-3), soil loss constant due to surface runoff (Eq. B2-4), soil loss constant due to volatilization (Eq. B2-5), and soil loss constant due to soil erosion (Eq. B2-9). These soil loss mechanisms are estimated using methods provided in EPA 1998a, along with e anford-specific parameter values (a site-specific parameter value unique to the e anford Pite), site-specific parameter values (a parameter unique to a site and independent of the constituent being evaluated; the actual value may be a default value and not specific to the e anford Pite), and contaminant-specific parameter values (a parameter unique to a contaminant and independent of the site being evaluated) where appropriate (see Table 6-1 for e anford-specific and site-specific parameter values and Appendix B-1 for contaminant-specific parameter values).
2. Next, the total soil loss (summing across all available soil loss mechanisms) for each soil depth (untilled soil, root zone soil, and tilled soil) should be computed. Pee Eq. B2-10.
3. The deposition term (denoted by a s) used to estimate the soil concentration should be calculated next (see Eq. B2-11 for Cl PCs and Eq. B2-12 for o1 PCs). Note that for mercury, the deposition term to soil is modeled slightly differently from all other Cl PCs (as specified in EPA 1998a). Eq. B2-13 is used to estimate a s for total mercury; Eq. B2-14 estimates a s for divalent mercury; and Eq. B2-15 estimates a s for methyl mercury. Note also because there are multiple flues from the facility, the deposition term to soil (Eq. B2-11 through Eq. B2-15) should be calculated for each individual flue before summing across flues to obtain a total deposition across all flues. The deposition term to soil is estimated using methods provided in EPA 1998a, along with site-specific parameter values where appropriate (see Appendix B-1 for details).

4 Finally, soil concentrations should be calculated (see Eq. 6-1 through Eq. 6-4 in section 6.2). The soil concentrations are estimated using methods provided in EPA 1998a, along with site-specific parameter values where appropriate (see Table 6-1 for a list of site-specific parameter values used in soil modeling).

The specific equations to support the soil, surface water, and sediment accumulation modeling follow.

Equation B2-1

Values for the soil loss constant due to biotic and abiotic degradation (ks_g) for inorganic and organic COPCs are found in the Human Health Risk Assessment Protocol (HHRAP) (EPA 1998a). In the event that values do not appear in the HHRAP, Eq. B2-1 (based on information in EPA 1998a) is used to calculate the soil loss constant due to biotic and abiotic degradation for organic COPCs (ks_g is not estimated for ROPCs). ks_g is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate ks_g for organic COPCs is:

$$ks_g = \frac{CF_1}{t_{1/2} \cdot CF_2} \qquad \text{(Eq. B2-1)}$$

where:

ks_g = COPC soil loss constant due to biotic and abiotic degradation (yr^{-1}). ks_g is COPC-specific. If no ks_g value exists for a constituent, the model uses $ks_g = 0\ yr^{-1}$. Values for ks_g are shown in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs).

CF_1 = conversion factor of 0.693, equal to the natural logarithm of 2

$t_{1/2}$ = half-life of the compound (days). The parameter $t_{1/2}$ is COPC-specific and is shown in Appendix B-1, Table B1-1, for organic COPCs.

CF_2 = conversion factor of 1/365 (yr/d), used to convert half-life from units of days to years

Equation B2-2

Equation B2-2 (modified for ROPCs from Eq. B2-1) is used to calculate the soil loss constant due to radiological decay (k_{decay}) for ROPCs (k_{decay} is not estimated for COPCs). k_{decay} is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate k_{decay} for all ROPCs is:

$$k_{decay} = \frac{CF_1}{t_{1/2} \cdot CF_2} \qquad \text{(Eq. B2-2)}$$

where:

k_{decay} = ROPC soil loss constant due to radiological decay (yr^{-1}). k_{decay} is ROPC-specific. If no k_{decay} value exists for a constituent, the model uses $k_{decay} = 0\ yr^{-1}$. Values for k_{decay} are shown in Appendix B-1, Table B1-3.

CF_1 = conversion factor of 0.693, equal to the natural logarithm of 2

$t_{1/2}$ = half-life of the ROPC (days). The parameter $t_{1/2}$ is ROPC-specific and is shown in Appendix B-1, Table B1-3.

CF_2 = conversion factor of 1/365 (yr/d), used to convert half-life from units of days to years

Equation B2-3

Soil loss due to leaching (ks_l) is a function of the amount of water available to generate leachate and soil properties such as bulk density, soil moisture, soil porosity, and soil sorption properties (EPA 1998a). Eq. B2-3 (Eq. 5-5A in EPA 1998a) is used to calculate the soil loss constant due to leaching for COPCs and ROPCs. ks_l is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate ks_l is:

$$ks_l = \frac{P + I - RO - E_v}{\theta_{sw} \cdot Z_s \cdot [1 + (Kd_s \cdot BD / \theta_{sw})]} \qquad \text{(Eq. B2-3)}$$

where:

ks_l = COPC or ROPC soil loss constant due to leaching (yr^{-1}). ks_l is COPC- and ROPC-specific and depth-specific. If no ks_l value exists for a constituent, the model uses ks_l = 0 yr^{-1}.

P = average annual precipitation (cm/yr). A value of 18.19 cm/yr (7.16 inches/yr for Richland, Washington; Western Regional Climate Center 2002) is used (see Table 6-1).

I = average annual irrigation (cm/yr). A value of 0 cm/yr is used (assumed value; see Table 6-1).

RO = average annual surface runoff from pervious areas (cm/yr). RO is site-specific. A value of 2.5 cm/yr (estimated value, assuming that the majority of rainfall recharges or evaporates) is used (see Table 6-1).

E_v = average annual evapotranspiration (cm/yr). E_v is site-specific. A value of 12.045 cm/yr (converted from 0.33 mm/day; National Environmental Research Park 2002) is used (see Table 6-1).

θ_{sw} = soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-1).

Z_s = soil mixing zone depth (cm). Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).

Kd_s = soil-water partition coefficient (mL water/g soil). Kd_s is COPC- and ROPC-specific and can be found in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no Kd_s value exists for a constituent, the model uses Kd_s = 0 mL/g.

BD = soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

Equation B2-4

Equation B2-4 (Eq. 5-4 in EPA 1998a) is used to calculate the soil loss constant due to surface runoff (ks_r) for COPCs and ROPCs. ks_r is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate ks_r is:

$$ks_r = \left(\frac{RO}{\theta_{sw} \cdot Z_s}\right) \cdot \left(\frac{1}{1 + (Kd_s \cdot BD / \theta_{sw})}\right) \qquad \text{(Eq. B2-4)}$$

where:

ks_r = COPC or ROPC soil loss constant due to surface runoff (yr^{-1}). ks_r is COPC- and ROPC-specific and depth-specific. If no ks_r value exists for a constituent, the model uses $ks_r = 0\ yr^{-1}$.

RO = average annual surface runoff from pervious areas (cm/yr). RO is site-specific. A value of 2.5 cm/yr (estimated value, assuming that the majority of rainfall recharges or evaporates) is used (see Table 6-1).

θ_{sw} = soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-1).

Z_s = soil mixing zone depth (cm). Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).

Kd_s = soil-water partition coefficient (mL water/g soil). Kd_s is COPC- and ROPC-specific and can be found in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no Kd_s value exists for a constituent, then the soil loss due to surface runoff (ks_r) is assigned a value of 0 yr^{-1}.

BD = soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

Equation B2-5

Volatile and semivolatile organic COPCs, as well as mercury, emitted in high concentrations may become adsorbed to soil particles and exhibit volatilization losses from soil (ks_v). This soil loss is a function of the rate of movement of the COPCs to the soil surface, the chemical vapor concentration at the soil surface, and the rate at which vapor is carried away by the atmosphere (EPA 1998a). Eq. B2-5 (Eq. 4-9 in EPA 1998b and recommended for use in EPA 1999) is used to calculate the soil loss constant due to volatilization for organic COPCs and mercury (ks_v is assumed to be zero for ROPCs and inorganic COPCs (except for mercury) since these constituents are not considered as being volatile). ks_v is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate ks_v is:

$$ks_v = Ke \cdot K_t \qquad \text{(Eq. B2-5)}$$

where:

ks_v = COPC soil loss constant due to volatilization (yr^{-1}). ks_v is COPC-specific and depth-specific. If no ks_v value can be calculated for a constituent, then the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

Ke = equilibrium coefficient (s/yr-cm). Ke is COPC-specific, depth-specific, and calculated in Eq. B2-6. If Ke cannot be calculated, then the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

K_t = gas-phase mass transfer coefficient (cm/s). K_t is COPC-specific, depth-specific, and calculated in Eq. B2-7. If K_t cannot be calculated, then the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

Equation B2-6

Equation B2-6 calculates the equilibrium coefficient (Ke), which is used in the determination of the soil loss due to volatilization (ks_v) for organic COPCs and mercury. (Ke is not estimated for ROPCs and inRrganic C2 3Cs [except fR P ercury], Eased Rn tKe Qck Rf Henry's Law CRnstants.) 1 Rte tKat ks_v is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate Ke (Eq. 4-10 in EPA 1998b and recommended for use in EPA 1999) is:

$$Ke = \frac{CF \cdot H}{Z_s \cdot Kd_s \cdot R \cdot T_{wk} \cdot BD} \qquad \text{(Eq. B2-6)}$$

where:

Ke = equilibrium coefficient (sIyr-cm). Ke is COPC-specific and depth-specific. ff Ke cannot be calculated, then the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

Cc = units conversion factor of 3.1536EH07 (sIyr)

H = Henry's Law CRnstant (atp -p ^{3}Imol). e is COPC-specific and is shown in Appendix B-1, Table B1-1, for organic COPCs and in Table B1-2 for mercury. ff no value is available for e , then Ke is not calculated and the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

w_s = soil mixing zone depth (cm). Three different values (depths) are used for w_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).

Kd_s = soil-water partition coefficient (mi waterIg soil). Kd_s is COPC-specific and can be found in Appendix B-1, Table B1-1, for organic COPCs and in Table B1-2 for mercury. ff no Kd_s value exists for a constituent, then Ke is not calculated and the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}. k ote that $Kd_s = K_{oc} \times f_{oc}$, where K_{oc} is the organic carbon partition coefficient for soil (mi waterIg soil) and f_{oc} is the fraction of organic carbon in soil (unitless). K_{oc} is COPC-specific and can be found in Appendix B-1, Table B1-1, for organic COPCs, while the recommended default value of $f_{oc} = 0.01$ mi Ig (EPA 1998a) can be used to estimate Kd_s for organic COPCs (see Table 6-1).

R = universal gas constant (atm-m^{3}Imol-°K). A value of R = 8.205 × 10^{-5} atm-m^{3}Imol-°K (EPA 1998a) is used (see Table 6-1).

T_{wk} = water body temperature (°K). T_{wk} is site-specific. The recommended default value of 298°K (EPA 1998a) is used (see Table 6-1).

Ba = soil bulk density (g soilIcm^3 soil). A site-specific value of 1.3 gIcm^3 (e alvorson and others 1998) is used (see Table 6-1).

Equation B2-7

Equation B2-7 calculates the gas-phase mass transfer coefficient (K_t), which is used in the determination of the soil loss due to volatilization (ks_v) for organic COPCs and mercury. (K_t is not estimated for ROPCs and inorganic COPCs [except for mercury], based on the lack of diffusivity values.) Note that ks_v is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate K_t (Eq. 4-5 in EPA 1998b and recommended for use in EPA 1999) is:

$$K_t = \frac{D_a \cdot \theta_v}{Z_s} \qquad \text{(Eq. B2-7)}$$

where:

K_t = gas-phase mass transfer coefficient (cm/s). K_t is COPC-specific and depth-specific. If K_t cannot be calculated, then the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

D_a = diffusion coefficient of contaminant in air (cm^2/s). D_a is COPC-specific and is shown in Appendix B-1, Table B1-1, for organic COPCs and Table B1-2 for mercury. If no value is available for D_a, then K_t is not calculated and the soil loss due to volatilization (ks_v) is assigned a value of 0 yr^{-1}.

θ_v = soil void fraction (cm^3/cm^3). θ_v is the volumetric fraction of a soil that does not contain solids or water and is calculated in Eq. B2-8.

Z_s = soil mixing zone depth (cm). Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).

Equation B2-8

Equation B2-8 calculates the soil void fraction (θ_v), which is used in the determination of the soil loss due to volatilization (ks_v) for organic COPCs and mercury. (ks_v is assumed to be zero for ROPCs and inorganic COPCs [except for mercury] since these constituents are not considered as being volatile; thus, θ_v is not estimated for ROPCs and inorganic COPCs [except for mercury].) Note that ks_v is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate θ_v (Eq. 4-6 in EPA 1998b and recommended for use in EPA 1999) is:

$$\theta_v = 1 - \left(\frac{BD}{\rho_s}\right) - \theta_{sw} \qquad \text{(Eq. B2-8)}$$

where:

θ_v = soil void fraction (cm^3/cm^3). θ_v is the volumetric fraction of a soil that does not contain solids or water.

BD = soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

ρ_s = solids particle density (g/cm^3). ρ_s is site-specific. A value of 2.65 g/cm^3 (the default value from EPA 1996) is used (see Table 6-1).

θ_{sw} = soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-1).

Equation B2-9

Equation B2-9 is used to calculate the soil loss constant due to soil erosion (ks_e) for COPCs. (Since a soil enrichment ratio is not available for ROPCs, ks_e is not estimated for ROPCs.) ks_e is used in the estimation of the total soil loss constant (see Eq. B2-10), which is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate ks_e (Eq. 5-3 in EPA 1998a) is:

$$ks_e = \left(\frac{CF \cdot X_e \cdot SD \cdot ER}{BD \cdot Z_s}\right) \cdot \left(\frac{Kd_s \cdot BD}{\theta_{sw} + (Kd_s \cdot BD)}\right) \qquad \text{(Eq. B2-9)}$$

where:

- ks_e = COPC soil loss constant due to soil erosion (yr^{-1}). ks_e is COPC-specific and depth-specific. If no ks_e value exists for a constituent, the model uses $ks_e = 0\ yr^{-1}$.
- CF = units conversion factor of 0.1 ($g\text{-}m^2/kg\text{-}cm^2$)
- X_e = unit soil loss ($kg/m^2\text{-}yr$). X_e is site-specific and calculated in Eq. B2-39.
- SD = watershed sediment delivery ratio (unitless). SD is site-specific and is calculated in Eq. B2-40.
- ER = soil enrichment ratio (unitless). ER is site-specific. The following recommended values (EPA 1998a) are used: 3 for organic COPCs and 1 for inorganic COPCs (see Table 6-1). No value is used for ROPCs and, thus, no soil loss due to soil erosion is quantified for ROPCs.
- BD = soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).
- Z_s = soil mixing zone depth (cm). Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).
- Kd_s = soil-water partition coefficient (mL water/g soil). Kd_s is COPC-specific and can be found in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs). If no Kd_s value exists for a constituent, the model assigns a value of 0 yr^{-1} for the soil loss due to soil erosion (ks_e).
- θ_{sw} = soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-1).

Equation B2-10

Equation B2-10 calculates the total soil loss constant (ks) due to biotic and abiotic degradation, radiological decay, leaching, surface runoff, volatilization, and erosion. ks is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The site-specific equation to estimate ks for all constituents (modified from Eq. 5-2A in EPA 1998a to include soil loss from radiological decay) is:

$$ks = ks_g + k_{decay} + ks_l + ks_r + ks_v + ks_e \qquad \text{(Eq. B2-10)}$$

where:

ks = total COPC or ROPC soil loss constant due to biotic and abiotic degradation, radiological decay, leaching, surface runoff, volatilization, and erosion (yr^{-1}). ks is COPC-specific, site-specific, and depth-specific. If no ks value exists for a constituent, the model uses ks = 0 yr^{-1}.

ks_g = COPC soil loss constant due to biotic and abiotic degradation (yr^{-1}). ks_g is COPC-specific, site-specific, and calculated in Eq. B2-1 for COPCs (but not for ROPCs). If no ks_g value exists for a constituent, the model uses ks_g = 0 yr^{-1}.

k_{decay} = ROPC radiological decay constant (yr^{-1}). k_{decay} is ROPC-specific, site-specific, and calculated in Eq. B2-2 for ROPCs (but not for COPCs). If no k_{decay} value exists for a constituent, the model uses k_{decay} = 0 yr^{-1}.

ks_l = COPC or ROPC soil loss constant due to leaching (yr^{-1}). ks_l is COPC- and ROPC-specific, site-specific, depth-specific, and is calculated in Eq. B2-3. If no ks_l value exists for a constituent, the model uses ks_l = 0 yr^{-1}.

ks_r = COPC or ROPC soil loss constant due to surface runoff (yr^{-1}). ks_r is COPC- and ROPC-specific, site-specific, depth-specific, and is calculated in Eq. B2-4. If no ks_r value exists for a constituent, the model uses ks_r = 0 yr^{-1}.

ks_v = COPC or ROPC soil loss constant due to volatilization (yr^{-1}). ks_v is COPC- and ROPC-specific, site-specific, depth-specific, and is calculated in Eq. B2-5. If no ks_v value exists for a constituent, the model uses ks_v = 0 yr^{-1}.

ks_e = COPC soil loss constant due to soil erosion (yr^{-1}). ks_e is COPC-specific, site-specific, depth-specific, and is calculated in Eq. B2-9 for COPCs (but not for ROPCs). If no ks_e value exists for a constituent, the model uses ks_e = 0 yr^{-1}.

Equation B2-11

Equation B2-11 calculates the soil deposition term used in soil modeling (Ds) for all COPCs except total mercury (see Eq. B2-13), divalent mercury (see Eq. B2-14), and methyl mercury (see Eq. B2-15). Ds is calculated for ROPCs using Eq. B2-12. Ds is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to calculate Ds for COPCs (modified from Eq. 5-11 in EPA 1998a to incorporate dry deposition from vapor phase into the model) is:

$$Ds = \frac{Q \cdot CF_1 \cdot \left[F_v \cdot (Dywv + Dydv) + (1 - F_v) \cdot (Dydp + Dywp)\right]}{Z_S \cdot BD} \qquad \text{(Eq. B2-11)}$$

where:

Ds	=	deposition term to soil (mg/kg-yr). Ds is COPC-specific, site-specific, and depth-specific.
Q	=	COPC-specific emission rate (g/s). Q, obtained from calculations after the air dispersion modeling, is COPC-specific, site-specific, and flue-specific. If no Q value exists for a constituent, the model uses Q = 0 g/s.
CF_1	=	units conversion factor of 100 (mg-m^2/kg-cm^2)
F_v	=	fraction of COPC air concentration in vapor phase (unitless). F_v is COPC-specific, ranges from 0 to 1, and is shown in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs). The model uses $F_v = 1$ for constituents modeled as only vapor phase. Otherwise, the model uses $F_v = 0$.
Dywv	=	unitized yearly average wet deposition from vapor phase (s/m^2-yr). Dywv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywv value exists for a constituent, the model uses Dywv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for a constituent, the model uses Dydv = 0 s/m^2-yr.
Dydp	=	unitized yearly average dry deposition from particle phase (s/m^2-yr). Dydp, from the air dispersion modeling, is site-specific and flue-specific. If no Dydp value exists for a constituent, the model uses Dydp = 0 s/m^2-yr.
Dywp	=	unitized yearly average wet deposition from particle phase (s/m^2-yr). Dywp, from the air dispersion modeling, is site-specific and flue-specific. If no Dywp value exists for a constituent, the model uses Dywp = 0 s/m^2-yr.
Z_s	=	soil mixing zone depth (cm). Z_s is site-specific. Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).
BD	=	soil bulk density (g/cm^3). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

Equation B2-12

Equation B2-12 calculates the soil deposition term used in soil modeling (Ds) for all ROPCs (see equations B2-11, B2-13, B2-14, and B2-15 for COPCs). Ds is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate Ds for ROPCs (comparable to Eq. 5-11 for COPCs in EPA 1998a, incorporating dry deposition from vapor phase into the model) is:

$$Ds = \frac{Q \cdot CF_1 \cdot \left[F_v \cdot (Dywv + Dydv) + (1 - F_v) \cdot (Dydp + Dywp)\right]}{Z_S \cdot BD} \qquad \text{(Eq. B2-12)}$$

where:

Ds	=	deposition term to soil (pCi/g-yr). Ds is ROPC-specific, site-specific, and depth-specific.
Q	=	ROPC-specific emission rate (Ci/s). Q, obtained from calculations after the air dispersion modeling, is ROPC-specific, site-specific, and flue-specific. If no Q value exists for a constituent, the model uses Q = 0 Ci/s.
CF_1	=	units conversion factor of 1×10^8 (pCi-m^2/Ci-cm^2)
F_v	=	fraction of ROPC air concentration in vapor phase (unitless). F_v is ROPC-specific, ranges from 0 to 1, and is shown in Appendix B-1, Table B1-3. The model uses $F_v = 1$ for constituents modeled as only vapor phase. Otherwise, the model uses $F_v = 0$.
Dywv	=	unitized yearly average wet deposition from vapor phase (s/m^2-yr). Dywv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywv value exists for a constituent, the model uses Dywv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for a constituent, the model uses Dydv = 0 s/m^2-yr.
Dydp	=	unitized yearly average dry deposition from particle phase (s/m^2-yr). Dydp, from the air dispersion modeling, is site-specific and flue-specific. If no Dydp value exists for a constituent, the model uses Dydp = 0 s/m^2-yr.
Dywp	=	unitized yearly average wet deposition from particle phase (s/m^2-yr). Dywp, from the air dispersion modeling, is site-specific and flue-specific. If no Dywp value exists for a constituent, the model uses Dywp = 0 s/m^2-yr.
Z_s	=	soil mixing zone depth (cm). Z_s is site-specific. Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).
BD	=	soil bulk density (g/cm^3). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

Equation B2-13

Equation B2-13 calculates the soil deposition term used in soil modeling for total mercury [$Ds_{(Hg)}$]. $Ds_{(Hg)}$ is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate $Ds_{(Hg)}$ (modified from the equation for mercury modeling found in Table B-1-1 in EPA 1998a, incorporating dry deposition from vapor phase into the model) is:

$$Ds_{(Hg)} = \frac{0.48 \cdot Q \cdot CF_1 \cdot \left[F_v \cdot (Dywv + Dydv) + \left(1 - F_v\right) \cdot (Dydp + Dywp)\right]}{Z_S \cdot BD} \quad \text{(Eq. B2-13)}$$

where:

$Ds_{(Hg)}$	=	deposition term to soil for total mercury (mg/kg-yr). $Ds_{(Hg)}$ is COPC-specific, site-specific, and depth-specific.
Q	=	COPC-specific emission rate (g/s). Q, obtained from calculations after the air dispersion modeling, is COPC-specific, site-specific, and flue-specific. If no Q value exists for total mercury, the model uses Q = 0 g/s.
CF_1	=	units conversion factor of 100 (mg-m^2/kg-cm^2)
F_v	=	fraction of COPC air concentration in vapor phase (unitless). F_v is COPC-specific, ranges from 0 to 1, and is shown in Appendix B-1, Table B1-2. The model uses F_v = 0.85 (EPA 1998a) for total mercury; see Appendix B-1, Table B1-2.
Dywv	=	unitized yearly average wet deposition from vapor phase (s/m^2-yr). Dywv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywv value exists for a constituent, the model uses Dywv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for a constituent, the model uses Dydv = 0 s/m^2-yr.
Dydp	=	unitized yearly average dry deposition from particle phase (s/m^2-yr). Dydp, from the air dispersion modeling, is site-specific and flue-specific. If no Dydp value exists for a constituent, the model uses Dydp = 0 s/m^2-yr.
Dywp	=	unitized yearly average wet deposition from particle phase (s/m^2-yr). Dywp, from the air dispersion modeling, is site-specific and flue-specific. If no Dywp value exists for a constituent, the model uses Dywp = 0 s/m^2-yr.
Z_s	=	soil mixing zone depth (cm). Z_s is site-specific. Three different values (depths) are used for Z_s: untilled soil (1 cm), root-zone soil (15 cm), and tilled soil (20 cm) (see Table 6-1).
BD	=	soil bulk density (g/cm^3). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-1).

Equation B2-14

Equation B2-14 calculates the soil deposition term used in soil modeling for divalent mercury [$Ds_{(Hg2+)}$]. $Ds_{(Hg2+)}$ is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate $Ds_{(Hg2+)}$ (from the equations for mercury modeling found in Table B-1-1 in EPA 1998a) is:

$$Ds_{(Hg^{2+})} = 0.98 \cdot Ds_{(Hg)} \qquad \text{(Eq. B2-14)}$$

where:

$Ds_{(Hg2+)}$ = deposition term to soil for divalent mercury (mg/kg-yr). $Ds_{(Hg2+)}$ is COPC-specific, site-specific, and depth-specific.

$Ds_{(Hg)}$ = deposition term to soil for total mercury (mg/kg-yr). $Ds_{(Hg)}$ is COPC-specific, site-specific, depth-specific, and calculated in Eq. B2-13.

Equation B2-15

Equation B2-15 calculates the soil deposition term used in soil modeling for methyl mercury [$Ds_{(MHg)}$]. $Ds_{(MHg)}$ is used in the estimation of soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2). The equation to estimate $Ds_{(MHg)}$ (from the equations for mercury modeling found in Table B-1-1 in EPA 1998a) is:

$$Ds_{(MHg)} = 0.02 \cdot Ds_{(Hg)} \qquad \text{(Eq. B2-15)}$$

where:

$Ds_{(MHg)}$ = deposition term to soil for methyl mercury (mg/kg-yr). $Ds_{(MHg)}$ is COPC-specific, site-specific, and depth-specific.

$Ds_{(Hg)}$ = deposition term to soil for total mercury (mg/kg-yr). $Ds_{(Hg)}$ is COPC-specific, site-specific, depth-specific, and calculated in Eq. B2-13.

Equation B2-16

Equation B2-16 calculates the average load to the water body from direct deposition of wet and dry particles and wet and dry vapors onto the surface of the water body (L_{DEP}) for all constituents (ROPCs and COPCs) except total mercury (see Eq. B2-17), divalent mercury (see Eq. B2-18), and methyl mercury (see Eq. B2-19). L_{DEP} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate L_{DEP} (modified from Eq. 5-29 in EPA 1998a to incorporate dry deposition from vapor phase into the model) is:

$$L_{DEP} = Q \cdot \left[F_v \cdot \left(Dywwv + Dydv \right) + \left(1 - F_v \right) \cdot Dytwp \right] \cdot A_w \qquad \text{(Eq. B2-16)}$$

where:

L_{DEP} = total (wet and dry) particle-phase and total (wet and dry) vapor-phase direct deposition load to water body (g/yr for COPCs and Ci/yr for ROPCs). L_{DEP} is COPC- and ROPC-specific and site-specific.

Q = COPC or ROPC-specific emission rate (g/s for COPCs and Ci/s for ROPCs). Q, obtained from calculations after the air dispersion modeling, is COPC- and ROPC-specific, site-specific, and flue-specific. If no value exists for Q, a value of 0 g/s (for COPCs) or 0 Ci/s (for ROPCs) is used.

F_v = fraction of COPC or ROPC air concentration in vapor phase (unitless). F_v is COPC- and ROPC-specific, ranges from 0 to 1 and is shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). The model uses $F_v = 1$ for constituents modeled in the vapor phase. Otherwise, the model uses $F_v = 0$.

Dywwv = unitized yearly average wet deposition from vapor phase over water body (s/m^2-yr). Dywwv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywwv value exists for a constituent, the model uses Dywwv = 0 s/m^2-yr.

Dydv = unitized yearly average dry deposition from vapor phase (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for a constituent, the model uses Dydv = 0 s/m^2-yr.

Dytwp = unitized yearly average total (wet and dry) deposition from particle phase over water body (s/m^2-yr). Dytwp, from the air dispersion modeling, is site-specific and flue-specific. If no Dytwp value exists for a constituent, the model uses Dytwp = 0 s/m^2-yr.

A_w = average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).

Equation B2-17

Equation B2-17 calculates the average load to the water body from direct deposition of wet and dry particles and wet and dry vapors onto the surface of the water body for total mercury [$L_{DEP(Hg)}$]. $L_{DEP(Hg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DEP(Hg)}$ (modified from the equation for mercury modeling found in Table B-4-8 in EPA 1998a, incorporating dry deposition from vapor phase into the model) is:

$$L_{DEP\ (Hg)} = 0.48 \cdot Q \cdot \left[F_v \cdot (Dywwv + Dydv) + (1 - F_v) \cdot Dytwp\right] \cdot A_w \qquad \text{(Eq. B2-17)}$$

where:

$L_{DEP(Hg)}$	=	total (wet and dry) particle phase and total (wet and dry) vapor phase direct deposition load to water body for total mercury (g/yr). $L_{DEP(Hg)}$ is COPC-specific and site-specific.
Q	=	COPC-specific emission rate for total mercury (g/s). Q, obtained from calculations after the air dispersion modeling, is COPC-specific, site-specific and flue-specific. If no Q value exists for total mercury, the model uses Q = 0 g/s.
F_v	=	fraction of COPC air concentration in vapor phase for total mercury (unitless). F_v is COPC-specific. A value of 0.85 (EPA 1998a) is used for total mercury; see Appendix B-1, Table B1-2.
Dywwv	=	unitized yearly average wet deposition from vapor phase over water body for total mercury (s/m^2-yr). Dywwv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywwv value exists for total mercury, the model uses Dywwv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase over water body for total mercury (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for total mercury, the model uses Dydv = 0 s/m^2-yr.
Dytwp	=	unitized yearly average total (wet and dry) deposition from particle phase over water body for total mercury (s/m^2-yr). Dytwp, from the air dispersion modeling, is site-specific and flue-specific. If no Dytwp value exists for total mercury, the model uses Dytwp = 0 s/m^2-yr.
A_w	=	average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).

Equation B2-18

Equation B2-18 calculates the average load to the water body from direct deposition of wet and dry particles and wet and dry vapors onto the surface of the water body for divalent mercury [$L_{DEP(Hg2+)}$]. $L_{DEP(Hg2+)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DEP(Hg2+)}$ (from the equations for mercury modeling found in Table B-4-8 in EPA 1998a) is:

$$L_{DEP_{(Hg^{2+})}} = 0.85 \cdot L_{DEP_{(Hg)}} \qquad \text{(Eq. B2-18)}$$

where:

$L_{DEP(Hg2+)}$ = total (wet and dry) particle phase and total (wet and dry) vapor phase direct deposition load to water body for divalent mercury (g/yr). $L_{DEP(Hg2+)}$ is COPC-specific and site-specific.

$L_{DEP(Hg)}$ = total (wet and dry) particle phase and total (wet and dry) vapor phase direct deposition load to water body for total mercury (g/yr). $L_{DEP(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-17.

Equation B2-19

Equation B2-19 calculates the average load to the water body from direct deposition of wet and dry particles and wet and dry vapors onto the surface of the water body for methyl mercury [$L_{DEP(MHg)}$]. $L_{DEP(MHg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DEP(MHg)}$ (from the equations for mercury modeling found in Table B-4-8 in EPA 1998a) is:

$$L_{DEP_{(MHg)}} = 0.15 \cdot L_{DEP(Hg)} \qquad \text{(Eq. B2-19)}$$

where:

$L_{DEP(MHg)}$ = total (wet and dry) particle phase and total (wet and dry) vapor phase direct deposition load to water body for methyl mercury (MHg) (g/yr). $L_{DEP(MHg)}$ is COPC-specific and site-specific.

$L_{DEP(Hg)}$ = total (wet and dry) particle phase and total (wet and dry) vapor phase direct deposition load to water body for total mercury (g/yr). $L_{DEP(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-17.

Equation B2-20

If a value exists for Henry's Law Constant (H) for a constituent, then Eq. B2-20 calculates the load to the water body due to dry vapor diffusion (i_{DIF}) for all constituents except total mercury (see Eq. B2-22), divalent mercury (see Eq. B2-23), and methyl mercury (see Eq. B2-24) (to estimate i_{DIF} for constituents that do not have a value for e, see Eq. B2-21). i_{DIF} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate i_{DIF} (Eq. 5-30 in EPA 1998a) is:

$$L_{DIF} = \frac{K_v \cdot Q \cdot F_v \cdot Cywv \cdot A_w \cdot CF \cdot R \cdot T_{wk}}{H} \qquad \text{(Eq. B2-20)}$$

where:

i_{DIF}	=	vapor phase Cl PC or o1 PC dry deposition diffusion load to water body (g/yr for Cl PCs and Ci/yr for o1 PCs). i_{DIF} is Cl PC- and o1 PC-specific and site-specific.
K_v	=	overall transfer rate coefficient (m/yr). K_v is Cl PC- and o1 PC-specific, site-specific, and is calculated in Eq. B2-38.
n	=	Cl PC or o1 PC-specific emission rate (g/s for Cl PCs and Ci/s for o1 PCs). n obtained from calculations after the air dispersion modeling, is Cl PC- and o1 PC-specific, site-specific, and flue-specific. If no value exists for n, a value of 0 g/s (for Cl PCs) or 0 Ci/s (for o1 PCs) is used.
c_v	=	fraction of Cl PC or o1 PC air concentration in vapor phase (unitless). c_v is Cl PC-specific, ranges from 0 to 1, and shown in Appendix B-1, tables B1-1 (organic Cl PCs), B1-2 (inorganic Cl PCs), and B1-3 (o1 PCs). The model uses $c_v = 1$ for constituents modeled in the vapor phase. Otherwise, the model uses $c_v = 0$.
Cywv	=	unitized yearly average air concentration from vapor phase over the water body (μg-s/g-m^3 for Cl PCs and μCi-s/Ci-m^3 for o1 PCs). Cywv, from the air dispersion modeling, is site-specific and flue-specific. If no value exists for Cywv, the model uses Cywv = 0 μg-s/g-m^3 for Cl PCs and Cywv = 0 μCi-s/Ci-m^3 for o1 PCs.
A_w	=	average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).
Cc	=	units conversion factor of 1×10^{-6} (g/μg for Cl PCs and Ci/μCi for o1 PCs)
H	=	Henry's Law Constant (atp-p^3/mol). e is Cl PC-specific and shown in Appendix B-1, tables B1-1 (organic Cl PCs) and B1-2 (inorganic Cl PCs). If no value is available for e (for example, for o1 PCs), then Eq. B2-21 is used to calculate i_{DIF} for constituents other than total mercury, divalent mercury, and methyl mercury.
o	=	universal gas constant (atm-m^3/mol-°K). A value of o $= 8.205 \times 10^{-5}$ atm-m^3/mol °K (EPA 1998a) is used (see Table 6-2).
T_{wk}	=	water body temperature (°K). T_{wk} is site-specific. The recommended default value of 298 °K (EPA 1998a) is used (see Table 6-2).

Equation B2-21

If no value exists for Henry's Law Constant for a constituent, then Eq. B2-21 is used to estimate the load to the water body due to dry vapor diffusion (L_{DIF}) for all constituents except total mercury (see Eq. B2-22), divalent mercury (see Eq. B2-23), and methyl mercury (see Eq. B2-24). i_{DIF} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The limiting equation to estimate i_{DIF} (when no value is available for Henry's Law Constant, the equation is derived from Eq. 5-30 in EMA 1998a by using the relationships among the parameters involved; see also Eq. B2-38) is:

$$L_{DIF} = Q \cdot F_v \cdot Cywv \cdot A_w \cdot CF \cdot K_G \cdot \theta^{(T_{wk}-293)} \qquad \text{(Eq. B2-21)}$$

where:

i_{DIF}	=	vapor phase Cl mC or o1 mC dry deposition diffusion load to water body (g/yr or Ci/yr). i_{DIF} is Cl mC- and o1 mC-specific and site-specific.
n	=	Cl mC or o1 mC-specific emission rate (g/s for Cl mCs and Ci/s for o1 mCs). n obtained from calculations after the air dispersion modeling is Cl mC- and o1 mC-specific, site-specific, and flue-specific. If no value exists for n, a value of 0 g/s (for Cl mCs) or 0 Ci/s (for o1 mCs) is used.
c_v	=	fraction of Cl mC or o1 mC air concentration in vapor phase (unitless). c_v is Cl mC- and o1 mC-specific, ranges from 0 to 1, and is shown in Appendix B-1, tables B1-1 (organic Cl mCs), B1-2 (inorganic Cl mCs), and B1-3 (o1 mCs). The model uses c_v = 1 for constituents modeled in the vapor phase. Otherwise, the model uses c_v = 0.
Cywv	=	unitized yearly average air concentration from vapor phase over the water body (µg-s/g-m^3 for Cl mCs and µCi-s/Ci-m^3 for o1 mCs). Cywv from the air dispersion modeling is site-specific and flue-specific. If no value exists for Cywv, the model uses Cywv = 0 µg-s/g-m^3 for Cl mCs and Cywv = 0 µCi-s/Ci-m^3 for o1 mCs.
A_w	=	average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).
C^c	=	units conversion factor of 1×10^{-6} (g/µg for Cl mCs and Ci/µCi for o1 mCs)
h_G	=	gas-phase transfer coefficient (m/yr). h_G is site-specific and is shown in Eq. B2-42. The recommended default value of 36,500 m/yr for a flowing river (EMA 1998a) is used (see Table 6-2).
θ	=	temperature correction factor (unitless). θ is site-specific. The recommended default value of 1.026 (EMA 1998a) is used (see Table 6-2).
q_{wk}	=	water body temperature (°h). q_{wk} is site-specific. The recommended default value of 298 °h (EMA 1998a) is used (see Table 6-2).

Equation B2-22

Equation B2-22 calculates the load to the water body due to dry vapor diffusion for total mercury [$L_{DIF(Hg)}$]. $L_{DIF(Hg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DIF(Hg)}$ (from the equation for mercury modeling found in Table B-4-12 in EPA 1998a) is:

$$L_{DIF_{(Hg)}} = \frac{K_v \cdot 0.48 \cdot Q \cdot F_v \cdot Cywv \cdot A_w \cdot CF \cdot R \cdot T_{wk}}{H} \qquad \text{(Eq. B2-22)}$$

where:

$L_{DIF(Hg)}$	=	vapor phase COPC dry deposition diffusion load to water body for total mercury (g/yr). $L_{DIF(Hg)}$ is COPC-specific and site-specific.
K_v	=	overall transfer rate coefficient for total mercury (m/yr). K_v is COPC-specific, site-specific, and is calculated in Eq. B2-38.
Q	=	COPC-specific emission rate for total mercury (g/s). Q, obtained from calculations after the air dispersion modeling, is COPC-specific, site-specific, and flue-specific. If no value exists for Q, a value of 0 g/s is used for total mercury.
F_v	=	fraction of COPC air concentration in vapor phase for total mercury (unitless). F_v is COPC-specific. A value of 0.85 (EPA 1998a) is used for total mercury; see Appendix B-1, Table B1-2.
Cywv	=	unitized yearly average air concentration from vapor phase over the water body (μg-s/g-m^3). Cywv, from the air dispersion modeling, is site-specific and flue-specific. If no Cywv value exists for total mercury, the model uses Cywv = 0 μg-s/g-m^3.
A_w	=	average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).
CF	=	units conversion factor of 1×10^{-6} (g/μg)
H	=	He[illegible]y's / aw Co[illegible]sta[illegible] Ior tota[illegible] er[illegible]ury (at[illegible] -[illegible]^3/mol). [illegible] is shown in Appendix B-1, Table B1-2, for total mercury.
o	=	universal gas constant (atm-m^3/mol-°K). A value of o $= 8.205 \times 10^{-5}$ atm-m^3/mol-°K (EPA 1998a) is used (see Table 6-2).
T_{wk}	=	water body temperature (°K). T_{wk} is site-specific. The recommended default value of 298 °K (EPA 1998a) is used (see Table 6-2).

Equation B2-23

Equation B2-23 calculates the load to the water body due to dry vapor diffusion for divalent mercury [$L_{DIF(Hg2+)}$]. $L_{DIF(Hg2+)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DIF(Hg2+)}$ (from the equation for mercury modeling found in Table B-4-12 in EPA 1998a) is:

$$L_{DIF_{(Hg^{2+})}} = 0.85 \cdot L_{DIF(Hg)} \qquad \text{(Eq. B2-23)}$$

where:

$L_{DIF(Hg2+)}$ = vapor phase COPC dry deposition diffusion load to water body for divalent mercury (g/yr). $L_{DIF(Hg2+)}$ is COPC-specific and site-specific.

$L_{DIF(Hg)}$ = vapor phase COPC dry deposition diffusion load to water body for total mercury (g/yr). $L_{DIF(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-22.

Equation B2-24

Equation B2-24 calculates the load to the water body due to dry vapor diffusion for methyl mercury [$L_{DIF(MHg)}$]. $L_{DIF(MHg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{DIF(MHg)}$ (from the equation for mercury modeling found in Table B-4-12 in EPA 1998a) is:

$$L_{DIF_{(MHg)}} = 0.15 \cdot L_{DIF\ (Hg)} \qquad \text{(Eq. B2-24)}$$

where:

$L_{DIF(MHg)}$ = vapor phase COPC dry deposition diffusion load to water body for methyl mercury (g/yr). $L_{DIF(MHg)}$ is COPC-specific and site-specific.

$L_{DIF(Hg)}$ = vapor phase COPC dry deposition diffusion load to water body for total mercury (g/yr). $L_{DIF(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-22.

Equation B2-25

Equation B2-25 calculates the average runoff load to the water body from impervious surfaces in the watershed from which runoff is conveyed directly to the water body (L_{RI}), for all constituents except total mercury (see Eq. B2-26), divalent mercury (see Eq. B2-27), and methyl mercury (see Eq. B2-28). L_{RI} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate L_{RI} (modified from Eq. 5-31 in EPA 1998a, incorporating dry deposition from vapor phase into the model) is:

$$L_{RI} = Q \cdot \left[F_v \cdot \left(Dywwv + Dydv\right) + \left(1 - F_v\right) \cdot Dytwp\right] \cdot A_I \qquad \text{(Eq. B2-25)}$$

where:

L_{RI}	=	runoff load from impervious surfaces (g/yr for COPCs and Ci/yr for ROPCs). L_{RI} is COPC- and ROPC-specific and site-specific.
Q	=	COPC or ROPC-specific emission rate (g/s for COPCs and Ci/s for ROPCs). Q, obtained from calculations after the air dispersion modeling, is COPC- and ROPC-specific, site-specific, and flue-specific. If no value exists for Q, a value of 0 g/s (for COPCs) or 0 Ci/s (for ROPCs) is used.
F_v	=	fraction of COPC or ROPC air concentration in vapor phase (unitless). F_v is COPC- and ROPC-specific, ranges from 0 to 1, and is shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). The model uses $F_v = 1$ for constituents modeled in the vapor phase. Otherwise, the model uses $F_v = 0$.
Dywwv	=	unitized yearly average wet deposition from vapor phase over water body (s/m^2-yr). Dywwv, from the air dispersion modeling, is site-specific and flue-specific. If no value exists for Dywwv, the model uses Dywwv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no value exists for Dydv, the model uses Dydv = 0 s/m^2-yr.
Dytwp	=	unitized yearly average total (wet and dry) deposition from particle phase over water body (s/m^2-yr). Dytwp, from the air dispersion modeling, is site-specific and flue-specific. If no value exists for Dytwp, the model uses Dytwp = 0 s/m^2-yr.
A_I	=	impervious watershed area receiving COPC deposition (m^2). A_I is site-specific. The model uses $A_I = 0$ m^2 (see Table 6-2).

Equation B2-26

Equation B2-26 calculates the average runoff load to the water body from impervious surfaces in the watershed from which runoff is conveyed directly to the water body, for total mercury [$L_{RI(Hg)}$]. $L_{RI(Hg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{RI(Hg)}$ (modified from the equation for mercury modeling found in Table B-4-9 in EPA 1998a, incorporating dry deposition from vapor phase into the model) is:

$$L_{RI\,(Hg)} = 0.48 \cdot Q \cdot \left[F_v \cdot \left(Dywwv + Dydv\right) + (1 - F_v) \cdot Dytwp\right] \cdot A_I \qquad \text{(Eq. B2-26)}$$

where:

$L_{RI(Hg)}$	=	runoff load from impervious surfaces for total mercury (g/yr). $L_{RI(Hg)}$ is COPC-specific and site-specific.
Q	=	COPC-specific emission rate for total mercury (g/s). Q, obtained from calculations after the air dispersion modeling, is COPC-specific, site-specific, and flue-specific. If no value exists for Q, a value of 0 g/s is used for total mercury.
F_v	=	fraction of COPC air concentration in vapor phase for total mercury (unitless). F_v is COPC-specific. A value of 0.85 (EPA 1998a) is used for total mercury; see Appendix B-1, Table B1-2.
Dywwv	=	unitized yearly average wet deposition from vapor phase over water body for total mercury (s/m^2-yr). Dywwv, from the air dispersion modeling, is site-specific and flue-specific. If no Dywwv value exists for total mercury, the model uses Dywwv = 0 s/m^2-yr.
Dydv	=	unitized yearly average dry deposition from vapor phase over water body for total mercury (s/m^2-yr). Dydv, from the air dispersion modeling, is site-specific and flue-specific. If no Dydv value exists for total mercury, the model uses Dydv = 0 s/m^2-yr.
Dytwp	=	unitized yearly average total (wet and dry) deposition from particle phase over water body for total mercury (s/m^2-yr). Dytwp, from the air dispersion modeling, is site-specific and flue-specific. If no Dytwp value exists for total mercury, the model uses Dytwp = 0 s/m^2-yr.
A_I	=	impervious watershed area receiving COPC or ROPC deposition (m^2). A_I is site-specific. The model uses A_I = 0 m^2 (see Table 6-2).

Equation B2-27

Equation B2-27 calculates the average runoff load to the water body from impervious surfaces in the watershed from which runoff is conveyed directly to the water body, for divalent mercury [$L_{RI(Hg2+)}$]. $L_{RI(Hg2+)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{RI(Hg2+)}$ (from the equations for mercury modeling found in Table B-4-9 in EPA 1998a) is:

$$L_{RI_{(Hg^{2+})}} = 0.85 \cdot L_{RI(Hg)} \qquad \text{(Eq. B2-27)}$$

where:

$L_{RI(Hg2+)}$ = runoff load from impervious surfaces for divalent mercury (g/yr). $L_{RI(Hg2+)}$ is COPC-specific and site-specific.

$L_{RI(Hg)}$ = runoff load from impervious surfaces for total mercury (g/yr). $L_{RI(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-26.

Equation B2-28

Equation B2-28 calculates the average runoff load to the water body from impervious surfaces in the watershed from which runoff is conveyed directly to the water body, for methyl mercury ($L_{RI(MHg)}$). $L_{RI(MHg)}$ is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate $L_{RI(MHg)}$ (from the equations for mercury modeling found in Table B-4-9 in EPA 1998a) is:

$$L_{RI_{(MHg)}} = 0.15 \cdot L_{RI\,(Hg)} \qquad \text{(Eq. B2-28)}$$

where:

$L_{RI(MHg)}$ = runoff load from impervious surfaces for methyl mercury (g/yr). $L_{RI(MHg)}$ is COPC-specific and site-specific.

$L_{RI(Hg)}$ = runoff load from impervious surfaces for total mercury (g/yr). $L_{RI(Hg)}$ is COPC-specific, site-specific, and calculated in Eq. B2-26.

Equation B2-29

Equation B2-29 calculates the average runoff load to the water body from pervious soil surfaces in the watershed (L_{RP}) for all COPCs (see Eq. B2-30 to estimate L_{RP} for ROPCs). Note that the untilled soil concentration is used in this equation. L_{RP} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate L_{RP} for COPCs (Eq. 5-32 in EPA 1998a) is:

$$L_{RP} = RO \cdot (A_L - A_I) \cdot \left(\frac{Cs \cdot BD}{\theta_{sw} + Kd_s \cdot BD} \right) \cdot CF \qquad \text{(Eq. B2-29)}$$

where:

L_{RP}	=	runoff load from pervious surfaces (g/yr). L_{RP} is COPC-specific and site-specific.
RO	=	average annual surface runoff from pervious areas (cm/yr). RO is site-specific. A value of 2.5 cm/yr (estimated value, assuming that the majority of rainfall recharges or evaporates) is used (see Table 6-2).
A_L	=	total watershed area receiving COPC deposition (m^2). A_L is site-specific. The model uses $A_L = 4 \times 10^9$ m^2 (see Table 6-2).
A_I	=	impervious watershed area receiving COPC deposition (m^2). A_I is site-specific. The model uses $A_I = 0$ m^2 (see Table 6-2).
Cs	=	COPC concentration over the exposure duration in untilled soil (mg/kg). Cs is COPC-specific, site-specific, and is calculated in section 6.2, Eq. 6-1 through Eq. 6-4.
BD	=	soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-2).
CF	=	units conversion factor of 0.01 (kg-cm^2/mg-m^2)
θ_{sw}	=	soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The EPA-recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-2).
Kd_s	=	soil-water partition coefficient (mL/g). Kd_s is COPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs). If no Kd_s value exists for a constituent, the model uses $Kd_s = 0$ mL/g.

Equation B2-30

Equation B2-30 calculates the average runoff load to the water body from pervious soil surfaces in the watershed (L_{RP}) for all ROPCs (see Eq. B2-29 to estimate L_{RP} for COPCs). Note that the untilled soil concentration is used in this equation. L_{RP} is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate L_{RP} for ROPCs (comparable to Eq. 5-32 for COPCs in EPA 1998a) is:

$$L_{RP} = RO \cdot (A_L - A_I) \cdot \left(\frac{Cs \cdot BD}{\theta_{sw} + Kd_s \cdot BD} \right) \cdot CF_1 \cdot CF_2 \qquad \text{(Eq. B2-30)}$$

where:

L_{RP}	=	runoff load from pervious surfaces (Ci/yr). L_{RP} is ROPC-specific and site-specific.
RO	=	average annual surface runoff from pervious areas (cm/yr). RO is site-specific. A value of 2.5 cm/yr (estimated value, assuming that the majority of rainfall recharges or evaporates) is used (see Table 6-2).
A_L	=	total watershed area receiving ROPC deposition (m^2). A_L is site-specific. The model uses $A_L = 4 \times 10^9$ m^2 (see Table 6-2).
A_I	=	impervious watershed area receiving ROPC deposition (m^2). A_I is site-specific. The model uses $A_I = 0$ m^2 (see Table 6-2).
Cs	=	ROPC concentration over the exposure duration in untilled soil (pCi/g). Cs is ROPC-specific, site-specific, and is calculated in section 6.2, Eq. 6-1 through Eq. 6-4.
BD	=	soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-2).
CF_1	=	units conversion factor of 1×10^4 (cm^2/m^2)
CF_2	=	units conversion factor of 1×10^{-12} (Ci/pCi)
θ_{sw}	=	soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The EPA-recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-2).
Kd_s	=	soil-water partition coefficient (mL/g). Kd_s is ROPC-specific and shown in Appendix B-1, Table B1-3. If no Kd_s value exists for a constituent, the model uses $Kd_s = 0$ mL/g.

Equation B2-31

Equation B2-31 calculates the average load to the water body from soil erosion (L_E). Since one of the parameters in the equation (ER) is not defined for ROPCs, L_E is only quantified for COPCs. Note that the untilled soil concentration is used in this equation. L_E is used in the estimation of the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation to estimate L_E for all COPCs (Eq. 5-33 in EPA 1998a) is:

$$L_E = X_e \cdot (A_L - A_I) \cdot SD \cdot ER \cdot \left(\frac{Cs \cdot Kd_s \cdot BD}{\theta_{sw} + Kd_s \cdot BD} \right) \cdot CF \qquad \text{(Eq. B2-31)}$$

where:

L_E	=	soil erosion load to the water body (g/yr). L_E is COPC-specific and site-specific.
X_e	=	unit soil loss (kg/m^2-yr). X_e is site-specific and calculated in Eq. B2-39.
A_L	=	total watershed area receiving COPC deposition (m^2). A_L is site-specific. The model uses $A_L = 4 \times 10^9$ m^2 (see Table 6-2).
A_I	=	impervious watershed area receiving COPC deposition (m^2). A_I is site-specific. The model uses $A_I = 0$ m^2 (see Table 6-2).
SD	=	watershed sediment delivery ratio (unitless). SD is site-specific and is calculated in Eq. B2-40.
ER	=	soil enrichment ratio (unitless). ER is site-specific. The following recommended values (EPA 1998a) are used: 3 for organic COPCs and 1 for inorganic COPCs (see Table 6-1). No value is used for ROPCs and, thus, no soil erosion load to the water body is quantified for ROPCs.
Cs	=	COPC concentration in untilled soil (mg/kg). Cs is COPC-specific, site-specific, and is calculated in section 6.2, Eq. 6-1 through Eq. 6-4.
Kd_s	=	soil-water partition coefficient (L/kg or mL/g). Kd_s is COPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs). If no Kd_s value exists for a constituent, the model uses $Kd_s = 0$ mL/g.
BD	=	soil bulk density (g soil/cm^3 soil). A site-specific value of 1.3 g/cm^3 (Halvorson and others 1998) is used (see Table 6-2).
θ_{sw}	=	soil volumetric water content (mL water/cm^3 soil). θ_{sw} is site-specific. The EPA-recommended default value of 0.2 mL/cm^3 (EPA 1998a) is used (see Table 6-2).
CF	=	units conversion factor of 1×10^{-3} (g/mg)

Equation B2-32

Equation B2-32 calculates the fraction of total water body COPC or ROPC concentration occurring in the water column (f_{wc}). f_{wc} is used to estimate two other parameters: the overall total water body dissipation rate constant (see Eq. B2-34) and the fraction of the total water body concentration in the benthic sediment (see Eq. B2-36). f_{wc} is also used to estimate total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3) and the total concentration in the water column (see Eq. 6-8 in section 6.3). The equation to estimate f_{wc} for all constituents (Eq. 5-36A in EPA 1998a) is:

$$f_{wc} = \frac{\left(1 + Kd_{sw} \cdot TSS \cdot CF\right) \cdot \frac{d_{wc}}{d_z}}{\left(1 + Kd_{sw} \cdot TSS \cdot CF\right) \cdot \frac{d_{wc}}{d_z} + \left(\theta_{bs} + Kd_{bs} \cdot C_{BS}\right) \cdot \frac{d_{bs}}{d_z}} \qquad \text{(Eq. B2-32)}$$

where:

f_{wc} = fraction of total water body COPC or ROPC concentration in the water column (unitless). f_{wc} is COPC- and ROPC-specific, site-specific, and ranges from 0 to 1.

Kd_{sw} = suspended sediments/surface water partition coefficient (L/kg). Kd_{sw} is COPC- and ROPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no Kd_{sw} value exists for a constituent, the model uses Kd_{sw} = 0 L/kg.

TSS = total suspended solids concentration (mg/L). TSS is site-specific and ranges from 2 to 300 mg/L. The recommended default value of 10 mg/L (EPA 1998a) is used (see Table 6-2).

CF = units conversion factor of 1×10^{-6} (kg/mg)

d_{wc} = average annual depth of water column (m). d_{wc} is site-specific. The model uses an estimated value of d_{wc} = 7.5 m (see Table 6-2).

d_{bs} = depth of upper benthic sediment layer (m). d_{bs} is site-specific. The recommended default value of 0.03 m (EPA 1998a) is used (see Table 6-2).

d_z = total water body depth (m). d_z is site-specific and calculated in Eq. B2-33.

C_{BS} = bed sediment concentration (g/cm^3). C_{BS} is site-specific and ranges from 0.5 to 1.5 g/cm^3. The recommended default value of 1 g/cm^3 (EPA 1998a) is used (see Table 6-2).

θ_{bs} = bed sediment porosity ($L_{pore\ water}/L_{sediment}$). θ_{bs} is site-specific and ranges from 0.4 to 0.8 $L_{pore\ water}/L_{sediment}$. The recommended default value of 0.6 $L_{pore\ water}/L_{sediment}$ (EPA 1998a) is used (see Table 6-2).

Kd_{bs} = bed sediment/sediment pore water partition coefficient (L/kg). Kd_{bs} is COPC- and ROPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no Kd_{bs} value exists for a constituent, the model uses Kd_{bs} = 0 L/kg.

Equation B2-33

Equation B2-33 calculates the total water body depth (d_z). d_z is used to estimate several other parameters, including the fraction of water body concentration in the water column (see Eq. B2-32), the water column volatilization rate constant (see Eq. B2-35), and the liquid-phase transfer coefficient (see Eq. B2-41). Note that the fraction of water body concentration in the water column is used in the estimation of the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate d_z for all constituents (see Table B-4-16 in EPA 1998a) is:

$$d_z = d_{wc} + d_{bs} \qquad \text{(Eq. B2-33)}$$

where:

d_z = total water body depth (m). d_z is site-specific.

d_{wc} = average annual depth of water column (m). d_{wc} is site-specific. The model uses an estimated value of d_{wc} = 7.5 m (see Table 6-2).

d_{bs} = depth of upper benthic sediment layer (m). d_{bs} is site-specific. The recommended default value of 0.03 m (EPA 1998a) is used (see Table 6-2).

Equation B2-34

Equation B2-34 calculates the overall total water body COPC or ROPC dissipation rate constant in surface water (k_{wt}). k_{wt} is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate k_{wt} for all constituents (Eq. 5-38 in EPA 1998a) is:

$$k_{wt} = f_{wc} \cdot k_v + f_{bs} \cdot k_b \qquad \text{(Eq. B2-34)}$$

where:

k_{wt} = overall total water body COPC or ROPC dissipation rate constant (yr^{-1}). k_{wt} is COPC- and ROPC-specific, and site-specific.

f_{wc} = fraction of total water body COPC or ROPC concentration in the water column (unitless). f_{wc} is COPC- and ROPC-specific, site-specific, ranges from 0 to 1, and is calculated in Eq. B2-32.

k_v = water column volatilization rate constant (yr^{-1}). k_v is COPC- and ROPC-specific, site-specific, and calculated in Eq. B2-35.

f_{bs} = fraction of total water body COPC or ROPC concentration in the benthic sediment (unitless). f_{bs} is COPC- and ROPC-specific, site-specific, ranges from 0 to 1, and is calculated in Eq. B2-36.

k_b = benthic burial rate constant (yr^{-1}). k_b is site-specific and calculated in Eq. B2-37.

Equation B2-35

Equation B2-35 calculates the water column volatilization rate constant (k_v). k_v is used to estimate the overall total water body dissipation rate constant (see Eq. B2-34), which is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate k_v for all constituents (Eq. 5-39 in EPA 1998a) is:

$$k_v = \frac{K_v}{d_z \cdot \left(1 + Kd_{sw} \cdot TSS \cdot CF\right)} \qquad \text{(Eq. B2-35)}$$

where:

k_v	=	water column volatilization rate constant (yr^{-1}). k_v is COPC- and ROPC-specific and site-specific.
K_v	=	overall transfer rate coefficient (m/yr). K_v is COPC- and ROPC-specific, site-specific, and is calculated in Eq. B2-38.
d_z	=	total water body depth (m). d_z is site-specific and calculated in Eq. B2-33.
Kd_{sw}	=	suspended sediments/surface water partition coefficient (L/kg). Kd_{sw} is COPC- and ROPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no Kd_{sw} value exists for a constituent, the model uses Kd_{sw} = 0 L/kg.
TSS	=	total suspended solids concentration (mg/L). TSS is site-specific and ranges from 2 to 300 mg/L. The recommended default value of 10 mg/L (EPA 1998a) is used (see Table 6-2).
CF	=	units conversion factor of 1×10^{-6} (kg/mg)

Equation B2-36

Equation B2-36 calculates the fraction of total water body COPC or ROPC concentration in the benthic sediment (f_{bs}). f_{bs} is used to estimate the overall total water body dissipation rate constant (see Eq. B2-34), which is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). f_{bs} is also used to estimate the bed sediment concentration (see Eq. 6-10 and Eq. 6-11 in section 6.4). The equation to estimate f_{bs} for all constituents (Eq. 5-36B in EPA 1998a) is:

$$f_{bs} = 1 - f_{wc} \qquad \text{(Eq. B2-36)}$$

where:

f_{bs} = fraction of total water body COPC or ROPC concentration in the benthic sediment (unitless). f_{bs} is COPC- and ROPC-specific, site-specific, and ranges from 0 to 1.

f_{wc} = fraction of total water body COPC or ROPC concentration in the water column (unitless). f_{wc} is COPC-specific, site-specific, ranges from 0 to 1, and is calculated in Eq. B2-32.

Equation B2-37

Equation B2-37 calculates the water column loss constant due to burial in benthic sediment (k_b). k_b is used to estimate the overall total water body dissipation rate constant (see Eq. B2-34), which is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate k_b for all constituents (Eq. 5-43 in EPA 1998a) is:

$$k_b = \left(\frac{X_e \cdot A_L \cdot SD \cdot CF_1 - Vf_x \cdot TSS}{A_w \cdot TSS} \right) \cdot \left(\frac{TSS \cdot CF_2}{C_{BS} \cdot d_{bs}} \right) \qquad \text{(Eq. B2-37)}$$

where:

k_b	=	benthic burial rate constant (1/yr). k_b is site-specific.
X_e	=	unit soil loss (kg/m^2-yr). X_e is site-specific and calculated in Eq. B2-39.
A_L	=	total watershed area receiving COPC or ROPC deposition (m^2). A_L is site-specific. The model uses $A_L = 4 \times 10^9$ m^2 (see Table 6-2).
SD	=	watershed sediment delivery ratio (unitless). SD is site-specific and is calculated in Eq. B2-40.
CF_1	=	units conversion factor of 1×10^3 (g/kg)
Vf_x	=	average annual volumetric flow rate through the water body (m^3/yr). Vf_x is site-specific. The model uses $Vf_x = 4 \times 10^{11}$ m^3/yr (see Table 6-2).
TSS	=	total suspended solids concentration (mg/L). TSS is site-specific and ranges from 2 to 300 mg/L. The recommended default value of 10 mg/L (EPA 1998a) is used (see Table 6-2).
A_w	=	average annual water body surface area (m^2). A_w is site-specific. Based on estimates made from map measurements, a value of $A_w = 6 \times 10^6$ m^2 is used (see Table 6-2).
CF_2	=	units conversion factor of 1×10^{-6} (kg/mg)
C_{BS}	=	bed sediment concentration (g/cm^3). C_{BS} is site-specific and ranges from 0.5 to 1.5 g/cm^3. The recommended default value of 1 g/cm^3 (EPA 1998a) is used (see Table 6-2).
d_{bs}	=	depth of upper benthic sediment layer (m). d_{bs} is site-specific. The recommended default value of 0.03 m (EPA 1998a) is used (see Table 6-2).

Equation B2-38

Equation B2-38 calculates the overall transfer rate of contaminants from the liquid and gas-phases in surface water (K_v). K_v is used to estimate the load to the water body due to dry vapor diffusion (see Eq. B2-20 and Eq. B2-22), which is used to estimate the total load to the water body (see Eq. 6-5 in section 6.3). K_v is also used to estimate the water column volatilization rate constant (see Eq. B2-35). The equation to estimate K_v for all constituents (Eq. 5-40 in EPA 1998a) is:

$$K_v = \frac{\theta^{(T_{wk}-293)}}{\frac{1}{K_L} + \frac{R \cdot T_{wk}}{H \cdot K_G}} \qquad \text{(Eq. B2-38)}$$

where:

K_v = overall transfer rate coefficient (m/yr). K_v is COPC- and ROPC-specific and site-specific.

θ = temperature correction factor (unitless). θ is site-specific. The recommended default value of 1.026 (EPA 1998a) is used (see Table 6-2).

T_{wk} = water body temperature (°K). T_{wk} is site-specific. The recommended default value of 298°K (EPA 1998a) is used (see Table 6-2).

K_L = liquid phase transfer coefficient (m/yr). K_L is COPC- and ROPC-specific, site-specific, and is calculated in Eq. B2-41.

R = universal gas constant (atm-m^3/mol-°K). A value of R = 8.205 × 10^{-5} atm-m^3/mol-°K (EPA 1998a) is used (see Table 6-2).

H = Henry's / aw Cnstant (atp -p ^{3}/mol). e is COPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs) and B1-2 (inorganic COPCs). If no e value exists for a constituent (for example, for ROPCs), the model sets the overall transfer rate coefficient (K_v) to 0 m/yr.

K_G = gas-phase transfer coefficient (m/yr). K_G is site-specific and is shown in Eq. B2-42. The recommended default value of 36,500 m/yr for a flowing river (EPA 1998a) is used (see Table 6-2).

Equation B2-39

Equation B2-39 calculates the soil loss rate from the watershed (X_e) by using the universal soil loss equation (USLE). X_e is used to estimate the soil loss due to soil erosion (see Eq. B2-9), the load to the water body from soil erosion (see Eq. B2-31), and the benthic burial rate constant (see Eq. B2-37). Note that the soil loss due to soil erosion is used to estimate the total soil loss constant (see Eq. B2-10), which is used to estimate soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2); the load to the water body from soil erosion is used to estimate the total load to the water body (see Eq. 6-5 in section 6.3); and the benthic burial rate constant is used to estimate the overall total water body dissipation rate constant (see Eq. B2-34), which is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate X_e for all constituents (Eq. 5-33A in EPA 1998a) is:

$$X_e = \frac{RF \cdot K \cdot LS \cdot C \cdot PF \cdot CF_1}{CF_2} \qquad \text{(Eq. B2-39)}$$

where:

X_e	=	unit soil loss (kg/m^2-yr). X_e is site-specific.
RF	=	USLE rainfall (or erosivity) factor (yr^{-1}). RF is site-specific and ranges from 50 to 300 yr^{-1}. The recommended default value of 50 yr^{-1} (EPA 1998a) is used (see Table 6-2).
K	=	USLE erodibility factor (ton/acre). K is site-specific. The recommended default value of 0.36 ton/acre (EPA 1998a) is used (see Table 6-2).
LS	=	USLE length-slope factor (unitless). LS is site-specific. The recommended default value of 1.5 (EPA 1998a) is used (see Table 6-2).
C	=	USLE cover management factor (unitless). C is site-specific. The recommended default value of 0.1 (EPA 1998a) is used (see Table 6-2).
PF	=	USLE supporting practice factor (unitless). PF is site-specific. The recommended default value of 1.0 (EPA 1998a) is used (see Table 6-2).
CF_1	=	units conversion factor of 907.18 (kg/ton)
CF_2	=	units conversion factor of 4047 (m^2/acre)

Equation B2-40

Equation B2-40 calculates the sediment delivery ratio (SD) for the watershed. SD is used to estimate several parameters, including the soil loss due to soil erosion (see Eq. B2-9), the load to the water body from soil erosion (see Eq. B2-31), and the benthic burial rate constant (see Eq. B2-37). Note that the soil loss due to soil erosion is used to estimate the total soil loss constant (see Eq. B2-10), which is used to estimate soil concentrations (see Eq. 6-1 through Eq. 6-4 in section 6.2); the load to the water body from soil erosion is used to estimate the total load to the water body (see Eq. 6-5 in section 6.3); and the benthic burial rate constant is used to estimate the overall total water body dissipation rate constant (see Eq. B2-34), which is used to estimate the total water body concentration, including the water column and bed sediment (see Eq. 6-6 and Eq. 6-7 in section 6.3). The equation to estimate SD for all constituents (Eq. 5-34 in EPA 1998a) is:

$$SD = a \cdot \left(A_L\right)^{-b} \qquad \text{(Eq. B2-40)}$$

where:

SD = watershed sediment delivery ratio (unitless). SD is site-specific.

a = empirical intercept coefficient (unitless). The parameter a is site-specific and is determined by the watershed area as follows (EPA 1998a):

Watershed Area (mile^2)	a (unitless)
area ≤ 0.1	2.1
$0.1 <$ area ≤ 1	1.9
$1 <$ area ≤ 10	1.4
$10 <$ area ≤ 100	1.2
$100 <$ area	0.6

Since the watershed area is > 100 mile^2, a site-specific value of $a = 0.6$ is used.

A_L = total watershed area receiving COPC or ROPC deposition (m^2). A_L is site-specific. An estimated value of 4.0E+09 m^2 (estimated as half of the study area) is used (see Table 6-2).

b = empirical slope coefficient (unitless). The recommended default value of 0.125 (EPA 1998a) is used (see Table 6-2).

Equation B2-41

Equation B2-41 calculates the rate of contaminant transfer from the liquid phase (K_L). The Columbia River is assumed to be a flowing river (as opposed to a quiescent lake or pond). Therefore, the equation to estimate K_L for flowing streams or rivers is used. K_L is used to estimate the overall transfer rate coefficient (see Eq. B2-38), which is used to estimate the water column volatilization rate constant (see Eq. B2-35), as well as the load to the water body due to dry vapor diffusion (see Eq. B2-20 and Eq. B2-22), which is used to estimate the total load to the water body (see Eq. 6-5 in section 6.3). The equation to estimate K_L for flowing streams or rivers for all constituents (Eq. 5-41A in EPA 1998a) is:

$$K_L = \sqrt{\frac{CF_1 \cdot D_w \cdot u}{d_z}} \cdot CF_2 \qquad \text{(Eq. B2-41)}$$

where:

K_L = liquid phase transfer coefficient (m/yr). K_L is COPC- and ROPC-specific and site-specific.

CF_1 = units conversion factor of 1×10^{-4} (m^2/cm^2)

D_w = diffusivity of COPC or ROPC in water (cm^2/s). D_w is COPC- and ROPC-specific and shown in Appendix B-1, tables B1-1 (organic COPCs), B1-2 (inorganic COPCs), and B1-3 (ROPCs). If no D_w value exists for a constituent, the model uses $D_w = 0$ cm^2/s.

u = current velocity (m/s). u is site-specific. The model uses a value of $u = 1.5$ m/s, based on modeling data from Columbia Basin Research 1996 (see Table 6-2).

d_z = total water body depth (m). d_z is site-specific and calculated in Eq. B2-33.

CF_2 = units conversion factor of 3.1536×10^7 (s/yr)

Equation B2-42

Equation B2-42 defines the rate of contaminant transfer from the gas phase (K_G) for a flowing system (as opposed to a quiescent system). Since the Columbia River is considered a flowing river as opposed to a quiescent lake or pond, parameter values for flowing streams are used for all constituents to estimate K_G. K_G is used to estimate the overall transfer rate coefficient (see Eq. B2-38) and the load to the water body due to dry vapor diffusion when Henry's Law Constant is not available (see Eq. B2-21). Note that the overall transfer rate coefficient is used to estimate the water column volatilization rate constant (see Eq. B2-35), as well as the load to the water body due to dry vapor diffusion (see Eq. B2-20 and Eq. B2-22), which is used to estimate the total load to the water body (see Eq. 6-5 in section 6.3). Note also that the load to the water body due to dry vapor diffusion is used to estimate the total load to the surface water body (see Eq. 6-5 in section 6.3). The equation for K_G for all constituents (Eq. 5-42A in EPA 1998a) is:

$$K_G = 36{,}500 \text{ m/yr} \qquad \text{(Eq. B2-42)}$$

where:

K_G = gas-phase transfer coefficient (m/yr). K_G is constant for flowing streams. The recommended default value of 36,500 m/yr for a flowing river (EPA 1998a) is used (see Table 6-2).

Appendix B-3

Radiological Risk Assessment Issues

Appendix B-3
Radiological Risk Assessment Issues

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Tetra Tech EM Inc.

One Dallas Centre ◆ 350 N. St. Paul St. ◆ Dallas, TX 75201 ◆ (214) 754-8765 ◆ FAX (214) 922-9715

March 27, 2001

Mr. Jerry Yokel, Project Officer
Department of Ecology
Nuclear Waste Program
1315 W. 4th Street
Kennewick, Washington 99336-6018

Subject: Contract C0000084
Hanford River Protection Privatization Project
Screening Level Risk Assessment Work Plan
Radiological Risk Assessment Issues

Dear Mr. Yokel:

On November 2, 2000, the Washington State Department of Ecology (Ecology) and the U.S. Department of Energy (DOE) met to discuss the screening level risk assessment work plan for DOE's Hanford River Protection Privatization Project . During this meeting, Ecology asked Tetra Tech EM Inc., to evaluate several outstanding radiological risk assessment issues, as follows:

Issue 1: Prepare a brief report addressing the potential volatility of the radionuclides listed in RAWP-72 with respect to their becoming airborne in a sweat lodge (i.e., water containing these radionuclides splashed onto hot rocks to make steam).

Issue 2: Briefly review the list of 46 radionuclides and identify any other radionuclides, in addition to those listed in RAWP-72, that may become airborne and represent a potential inhalation exposure pathway in a sweat lodge.

Issue 3: Check if the HEAST slope factor for inhalation of tritiated water vapor includes uptake by dermal absorption.

Issue 4: Check to determine if dermal absorption of I-129 can be a significant contributor to risk relative to inhalation.

Issue 5: Check to determine if I-129 can represent an external exposure risk from plume immersion which may be significant relative to the risk it represents by inhalation.

Issue 6: Prepare a brief statement defining the level of exposure that may be considered a LOAEL for radionuclides (e.g., 1 to 5 rem).

Issue 7: Provide a brief report on the concentrations of naturally occurring and ubiquitous manmade radionuclides in mother's breast milk.

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Mr. Jerry Yokel
Washington State Department of Ecology
March 27, 2001
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The Attachment presents responses to each issue. The responses were prepared by Dr. John Mauro of Sandy Cohen & Associates. If you have any questions, please me at (214) 740-2022.

Sincerely,

William P. Desmond, Ph.D.
Senior Environmental Scientist

cc: J. Pankanin, Tetra Tech EM Inc.
J. Mauro, Sandy Cohen & Assoc.
file

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ATTACHMENT

This attachment discusses several issues raised during a meeting on November 2, 2000, between the Washington Department of Ecology and the U.S. Department of Energy (DOE). The purpose of the meeting was to discuss the draft screening level risk assessment work plan for DOE's Hanford River Protection Privatization Project.

Issue 1: Prepare a brief report addressing the potential volatility of the radionuclides listed in RAWP-72 with respect to their becoming airborne in a sweat lodge (i.e., water containing these radionuclides splashed onto hot rocks to make steam).

Issue 2: Briefly review the list of 46 radionuclides and identify any other radionuclides, in addition to those listed in RAWP-72, that may become airborne and represent a potential inhalation exposure pathway in a sweat lodge.

These two issues were formulated into the following question, which the discussion below attempts to answer:

> Assuming that radionuclides contaminate surfaces waters and these surface waters are used by native Americans in sweat lodges, what radioactivity exposure problems might result?

The Sweat Lodge

To prepare for a sweat lodge ceremony, igneous rocks such as lava are heated outside the lodge in a fire pit fueled with wood logs. (Lava tends to hold its heat well.) It takes several hours to heat the rocks, which may be about the size and shape of a man's head, to the required red heat. According to William Grosshandler, Acting Chief, Fire Sciences Division, National Institute for Science and Technology (301-971-2310), the temperature of the glowing coals in an intense wood fire is about 1700°C, while the flame temperature is about 1200°C. Rocks heated to a dull red heat will have a temperature of about 650°C. The sweat lodge generally consists of a frame of bent willow boughs covered with blankets and tarpaulins. The entrance to the sweat lodge is covered with blankets. A typical sweat lodge might be about 10 feet in diameter and roughly hemispherical in shape. When it is time for the ceremony to begin, a certain number of heated rocks are brought into the lodge one-by-one and placed in a central pit in a ritual manner. Depending on the particular ritual, this might involve twelve rocks. When the heated rocks are in place, the entrance is sealed, water is sprinkled onto the rocks, and prayers and meditation begin. Four such rounds of ritual comprise the ceremony. Each round is about 45 minutes.

Information presented above was obtained at the following Internet sites:

- http://www.ausbcomp.com/redman/sweat_lodge.htm
- http://www.crystalinks.com/sweatlodges.html
- http://www.welcomehome.org/rob/sweat/sweat.html

Aerosols in a Sweat Lodge

Emissions from the vitrification process are expected to be either gaseous species (e.g., CO_2, H_2O, I_2) or

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solid particulates (e.g., metal oxides and/or silicates).[1] Some fraction of the gaseous species will dissolve in surface waters on contact as H_2O, I^-, or CO_3^{-2}. Some fraction of the solid particulate emissions may also fall onto surface waters. Some of these particulates may settle to the bottom of the body of water, some may dissolve in the water, and some may remain suspended in the water as colloidal particles. Particles which settle out will not contribute to the types of exposures addressed here.

As noted above, water is sprinkled on the heated rocks in the sweat lodge to produce a steam-laden atmosphere. Any tritium, as tritiated water, would be vaporized in the sweat lodge. Similarly, any carbon-14 existing as dissolved carbonic acid would also be vaporized. Other dissolved radioactive species (e.g., metal ions and I-) would most likely remain on the igneous rocks as metal salts which might or might not subsequently evaporate depending on the chemical form of the resulting compounds. The melting and boiling points of some possible compounds are listed in Table 1 (Hdbk 1954).

It can be seen from Table 1 that if antimony chloride or antimony iodide is formed as a result of evaporation, these compounds could volatilize. Selenium, if present as the oxide, could also vaporize under expected sweat lodge conditions.

Ruthenium metal is quite stable and oxides slowly in air at temperatures above 800°C. The metal does not react with air at room temperature. The oxide, RuO_4, is highly volatile with a quoted boiling point of either 40°C or 130°C (**http://www.emsdiasum.com/ems/techdata/57.html**). However, this oxide can not be formed from the elements (http://www.britannica.com/bcom/eb/article/2/0,5716,119792+28+110614,00.html); rather, complex chemical synthesis techniques are required. Consequently, volatilization of ruthenium is not expected to represent a realistic exposure pathway.

Cesium metal boils at about 690°C. As a result, if the element is present in metallic form, perhaps due to decomposition of the oxide, it would not be vaporized in the sweat lodge. If the cesium salts, such as the chloride, iodide, or sulfate, reformed on the heated rocks after the steam had evaporated, none of these compounds would be expected to volatilize.

It is also possible that, instead of remaining as evaporative salts on the heated rocks, some of the dissolved species could be physically airborne as an aerosol mist if the boiling process is sufficiently violent. Whatever mechanism is responsible for the generation of aerosols (vaporization, mechanical entrainment, or volatilization), the quantities of such materials will likely be relatively small since only small quantities of water are used in the ceremonies. For example, consider a sweat lodge in the form of a hemisphere 10 feet in diameter. The lodge will contain about 262 cubic feet of air. Assuming that the lodge contains saturated air at a temperature of 100°F (38°C), then the air will contain 0.043 lb of water vapor per pound of dry air, and the saturated air will have a specific volume of 15.1 cubic feet per pound of dry air (Perry's 1984). Thus, there will be 0.74 lbs of water vapor in the lodge (261 ft^3 x 0.043 lb of H_2O/lb dry x lb dry air/15.1 ft^3). Since a gallon of water weighs 8.3 pounds, the amount of water required to saturate the air in the sweat lodge is about 0.1 gallons. Hence, the total amount of a contaminant airborne in the sweat lodge at any given time would not exceed the amount of the contaminant that is in about 0.1 gallon of water.

[1] Joule-heated ceramic melters used in the vitrification of HLW operate at about 1100°C in an oxidizing atmosphere. Thus, solid particulates are expected to be oxides or silicates.

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TABLE 1
MELTING POINTS AND BOILING POINTS OF SELECTED INORGANIC COMPOUNDS

Compound	Melting Point (°C)	Boiling Point (°C)
$SbCl_3$	74	234
SbI_3	167	401
Sb_2O_3	656	1550
$BaCl_2$	962	1560
BaI_2	740	NR
BaO	1923	NR
$BaSiO_3$	1604	NR
$BaSO_4$	1580	NR
$CdCl_2 \cdot 2.5H_2O$	568	960
CdI_2	NR	713
CdO	NR	900-1000 (d)
$CdSO_4$	NR	1000
CsCl	646	1290
CsI	621	1280
Cs_2O	360-400 (d)	NR
Cs_2SO_4	1010	NR
CoO	1800 (d)	NR
$CoSO_4$	989	NR
$EuCl_3$	623	NR
NiO	2090	NR
$RaCl_2$	1000	NR
$RuCl_3$	>500 (d)	NR
$SmCl_3$	678	NR
SmI_3	820	NR
SeO_2	NR	316
$SrCl_2$	873	NR

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Compound	Melting Point (°C)	Boiling Point (°C)
$Sr(OH)_2$	375	NR
SrO	2430	NR
$SrSO_4$	1580 (d)	NR
$SnCl_2$	246	**623**
SnO	700-950 (d)	NR
$ThCl_4$	720-750 (sub)	NR
YCl_3	680	NR

Notes:

Chemicals with boiler point values in **bold** would be expected to volatilize.

d Decomposes
sub Sublimes
NR Not reported

Recommendation:

Clearly, the quantity of radionuclides that may become airborne in this exposure scenario, and the potential significance of this scenario, will depend on many factors related to the chemical form of the radionuclides, the radionuclide concentration in the water, the temperature of the hot rocks, and the amount of water used in the ceremony. Given the many uncertainties, and the potential that aerosols may be generated by mechanical entrainment in addition to volatilization, it is recommended that a two-step process be employed for the assessment of this pathway. The first step would be a screening process, wherein it would be assumed that all of the radionuclides in the water used in the sweat lodge become airborne. If these levels result in potential risks exceeding 1E-6, a more refined analysis could then be initiated for the more limiting radionuclides.

Issue 3: Check if the HEAST slope factor for inhalation of tritiated water vapor includes uptake by dermal absorption.

The inhalation slope factor for tritiated water vapor reported in Table 4 of HEAST is 9.59 E-14 lifetime risk of cancer per pCi inhaled. This value includes both the risk contribution from the internal dose delivered by the tritium that is inhaled plus the tritium that is taken into the body by dermal absorption. This can be demonstrated by the following calculation:

The risk from inhalation of 1 pCi of tritiated water vapor, not including dermal absorption, is derived as follows:

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Dose = 1 pCi x .037 dis/sec-pCi x .0057 MeV/dis x 10 d/.693 x 86400 s/d
x 1.6E-06 erg/MeV x .01 rad-g/erg /70,000 g = 6.0E-11 rad/pCi inhaled

Risk = 6.0E-11 rad/pCi x 7.6E-4 risk/rad = 4.56E-14 risk/pCi inhaled

Other than physical constants, the key parameters in this equation are the effective half-life of tritiated water in the body of 10 days, the body weight of reference man of 70 kg, and the risk coefficient for uniform whole body exposure to ionizing radiation of 7.6E-4 lifetime risk per rad uniform whole body exposure.

As may be noted, the result of the above calculation is about one half the slope factor. Since, it is widely acknowledged that the internal dose from immersion in a plume of tritiated water vapor is about 50% from inhalation and 50% from dermal absorption[2], it is clear that the HEAST slope factor includes a factor of two to account for dermal absorption. A telephone conversation with Michael Boyd of the Office of Radiation and Indoor Air (11/3/00) confirmed this understanding.

Issue 4: Check to determine if dermal absorption of I-129 can be a significant contributor to risk relative to inhalation.

Guidance on the possible significance of dermal absorption, relative to inhalation, as a route of exposure to airborne toxicants is provided in "Dermal Exposure Assessment: Principles and Applications," EPA/600/8-91/001B, January 1992. As indicated on page 7-1, as a general rule, "many chemicals due to their low vapor pressure cannot achieve adequate vapor concentrations to pose a dermal hazard" and "for chemicals that can achieve adequate vapor concentrations, it has been assumed that they are primarily absorbed by the respiratory tract." In order to confirm this generalization, it is instructive to evaluate the permeability constant that an I-129 vapor must have in order for it to contribute significantly to uptake relative to inhalation.

Assuming a typical breathing rate of 8,000 m3/yr and an exposed skin surface area of 5,800 cm2[3], the permeability constant (Kp) for a vapor that would correspond to an uptake rate via dermal absorption that is comparable to the uptake by inhalation is derived as follows:

Kp (cm/hr) = (15.2 m3/day x 1E06 cm3/m3)/(5,200 cm2 x 24 hr/day) = 122 cm/hr

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[2] See Section 9.3.2 (page 9-4) of "Radiological Assessment - A Textbook on Environmental dose Analysis," Edited by John E. Till and H. Robert Meyer, NUREG/CR-3332, September 1983.

[3] These are the recommended adult long term inhalation value and the upper end exposed skin surface area value on pages 5-24 and 6-5 of "Exposure Factors Handbook," EPA/600/P-95/002Fa, August 1997.

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Therefore, the permeability constant for I-129 vapor would have to be 122 cm/hr in order for dermal absorption to contribute as much to I-129 uptake as does inhalation. The permeability constants reported in Table 7-1 in the above cited EPA guidance for a broad range of vapor phase organic compounds, which have a high potential for dermal absorption, range from .01 to 14.9 cm/hr. Clearly, dermal absorption of I-129 vapor cannot be a significant contributor to risk relative to inhalation of I-129 vapor.

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Issue 5: Check to determine if I-129 can represent an external exposure risk from plume immersion which may be significant relative to the risk it represents by inhalation.

I-129 is a pure beta emitter and will, therefore, not deliver a significant external effective whole body dose from plume immersion. As a result, the lifetime risk associated with immersion in an airborne plume of I-129 will essentially be entirely due to the I-129 taken up by inhalation, with a negligible contribution from dermal absorption and external exposure. For example, assuming an airborne plume of 1 pCi/m3 of I-129, and using the HEAST inhalation slope factors, the lifetime risk of cancer due to one year of inhalation exposure to the plume is estimated as follows:

R_{inh} = 1 pCi/m3 x 8000 m3/yr x 1.22E-10 risk per pCi inhaled = 9.76E-07 lifetime cancer risk of cancer from inhalation

Using the external risk conversion factors for I-129 in Federal Guidance Report No. 13, the lifetime risk from the external exposures from one year exposure to a plume containing 1 pCi/m3 of I-131 is estimated as follows:

R_{ext} = 1 pCi/m3 x 1.85E-17 risk per Bq per m3 per sec x 0.037 Bq/pCi x 3.15E7 sec/yr = 2.15E-11 lifetime risk of cancer from external exposure

Hence, the risk from external exposure is over four orders of magnitude smaller than the inhalation risk.

Issue 6: Prepare a brief statement defining the level of exposure that may be considered a LOAEL for radionuclides (e.g., 1 to 5 rem).

The Appendix presents a review of the literature which establishes the bases for defining LOAELs and NOAELs for radionuclides. Though the subject is complex, requiring a number of qualifying statements, in brief, the lowest levels of exposure where clinically significant non-stochastic effects (i.e., the acute effects of radiation) have been observed is about 10 rem. The lowest doses where a statistically significant increase in the incidence of stochastic effects (i.e., cancer) have been observed in an exposed population was about 1 rem uniform whole body exposure delivered over a short period of time to a large population.

Issue 7: Provide a brief report on the concentrations of naturally occurring and ubiquitous manmade radionuclides in mother's breast milk.

Available sources of information were searched, however no data on the natural background and ubiquitous manmade levels of radionuclides in human milk were located. The best evidence found were data on the radionuclide content in cow's milk and produce in the vicinity of Hanford. These data are included in an EXCEL spreadsheet (electronic copy transmitted with this memorandum). These data, which were kindly provided by Bruce Napier of Pacific Northwest National Laboratory, are the results of the 1999 environmental radiological surveillance program (Poston and others 1999). Dr. Napier explained

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that these annual reports can be obtained at http://www.hanford.gov/doe/98annualrp/index.html.

Human milk for women in the vicinity of Hanford would likely contain substantially lower levels of radionuclides than cow's milk since the amount of food and the radionuclide content of the cows' diet is likely to be considerably greater than that of a person. Nevertheless, the data in the spreadsheets represent a baseline that may be useful. In theory, the radionuclide content in human milk in the vicinity of Hanford can be estimated based on human dietary intake, along with the application of biokinetic models on the uptake and retention of radionuclides in human milk.

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Perry, R.H., and D.W. Green, eds. 1984. *Perry's Chemical Engineers Handbook*. McGraw-Hill.

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APPENDIX

LOAELs ASSOCIATED WITH RADIATION EXPOSURE

1.0 BACKGROUND INFORMATION

The concept of the "Lowest Observed Adverse Effect Level" (LOAEL) has been employed by public health professionals to assist their efforts to provide policies, guidance, and set regulatory limits in behalf of individuals exposed to radiation and radioactive materials. A LOAEL is the lowest dose in a given study that resulted in an observable harmful health effect. Radiation health effects are generally categorized as either deterministic or stochastic.

1.1 DETERMINISTIC HEALTH EFFECTS

Deterministic effects are those with a threshold dose and where the severity of the health effect(s) is largely defined by the total dose of radiation that is delivered to tissue(s), organ(s), or the whole body of the individual. These health effects are termed "acute radiation health effects" and are generally seen only for relatively large doses above the threshold level that are delivered within a short time period.

Modifying factors that affect the dose-response relationship are numerous and include (1) the rate at which the dose is delivered, (2) the type of radiation (alpha, beta, gamma, or neutron), (3) the exposure pathway (external versus internal exposure from ingestion or inhalation), and (4) age, sex, and health status of the individual.

1.2 STOCHASTIC HEALTH EFFECTS

In contrast to deterministic health effects, the severity of stochastic health effects is not affected by radiation dose. By definition, stochastic radiation effects are "probabilistic" health effects that include (1) cancer induction, (2) genetic effects, and (3) in-utero effects. Thus, the distinguishing feature of the dose-response relationship of a stochastic effect is that the severity is not dose dependent; rather the probability that a stochastic effect may occur is directly proportional to the dose of radiation. A second distinguishing feature of the dose-response relationship of a stochastic effect is that it is assumed to have no threshold. Thus, stochastic health effects associated with chronic low doses or low dose rates of radiation are assumed to represent a linear no-threshold (LNT) dose response. Thus, for even a very small dose of radiation, it is assumed that there is a small but finite risk of cancer, genetic, or in-utero effect.

A familiar example of a stochastic effect is that of smoking and lung cancer. Indisputably, cigarette smoking is a direct cause of human lung cancer, but not all smokers develop lung cancer. Moreover, lung cancer may also be observed in some non-smokers. It is important to note that the "severity" of a lung cancer is independent of whether the individual was a heavy smoker, light smoker, or non-smoker. Thus, the causal relationship of cigarette smoking and lung cancer was established when a higher incidence rate of lung cancer was observed among smokers than among non-smokers. The level of increase was found to be proportional to the amount and duration of cigarette smoking. While large differences in lung cancer rates were readily observable when heavy smokers were compared to non-smokers, these differences diminished to indistinguishable levels for very light smokers or individuals who had smoked only for a very short time.

A similar relationship exists between radiation exposure and several types of stochastic effects. For small

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doses of radiation, the likelihood that even a single cell will undergo a selective alteration, which leads to a cancer or some other health effect, is extremely low. Furthermore, genetic effects, disturbances in growth and development of an embryo, and cancer can also be caused by chemical, physical, and biological agents, many of which exist naturally in the environment. Thus, even for large doses of radiation, stochastic health effects can be observed only as relatively small increases above the spontaneous incidence that is observable in the normal population.

It must also be acknowledged that the slope of the dose-response relationship for stochastic health effects is also modified by (1) the type of cancer, (2) sex and age at time of exposure, and (3) the type of radiation, pathway of exposure, etc. For example, for a given dose of radiation to the thyroid, the risk of thyroid cancer is highest when radiation is external and the exposed individual is a female child.

A quantitative assessment of the radiation dose-response relationship is further complicated by the fact that cancers (and other stochastic effects) induced by radiation are indistinguishable from those arising spontaneously or caused by other carcinogens. Physicians and pathologists cannot determine, based on tissue type, whether certain lung cancers, for example, are caused by radiation, cigarette smoking, air pollutants, chemicals, or other cancer-causing agents. The ability to detect the common cancers caused by any specific agent is, therefore, limited to statistical analyses. These statistical methods rely on the fact that the incidence of various cancers in a well-defined population can be predicted with reasonable accuracy. For a sufficiently large group of people who have received radiation exposure, an incidence of cancer above the expected level would suggest radiation was a possible cause of the excess number of cancers, but it would not identify radiation as the cause of cancer in any specific individual. Only epidemiologic studies of people exposed to relatively high doses of radiation (greater than 10,000 mrem or 10 rem) have shown such an excess of cancer and have, therefore, demonstrated a causal relationship.

In brief, there exists a voluminous body of data that describes the dose-response relationship and, while there is general consensus at the high end of the dose response, there remains uncertainty and controversy at the low end.

It is the combination of these factors that complicate a quantitative assessment of LOAELs associated with radiation exposure. A detailed and comprehensive discussion is, therefore, beyond the scope of this task. Presented below, however, are select citations of observed radiation health effects and their reported doses that provide useful reference values for LOAELs representing both deterministic and stochastic radiation health effects.

2.0 LOAELs FOR DETERMINISTIC OR ACUTE RADIATION HEALTH EFFECTS

Radiation affects the individual cells that are the building blocks of the tissues and organs of the body. Although all cells can be affected by radiation, some are more sensitive to radiation injury than others. In general, the degree of sensitivity depends on the rate of cell division and the degree of cell differentiation. Thus, the most sensitive cells are undifferentiated rapidly dividing cells that include somatic stem cells and precursor cells to male sperm. The key feature of deterministic effects is that they require a minimum dose that in turn induces cell death in a significant fraction of the exposed cell population that represents a particular tissue/organ.

Human exposure to a single whole-body dose of rapidly delivered radiation of 50 rem or more results in the development of a complex of clinical symptoms, signs, and laboratory findings, which are collectively termed the Acute Radiation Syndrome. In the acute radiation syndrome, the very radiosensitive

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hemopoietic system is the most prone to manifest evidence of injury. It is only when injury is more severe that gastrointestinal symptoms dominate the picture.

Presented below is a brief discussion of prominent features of the acute radiation syndrome in terms of time of onset and required radiation doses.

2.1 EARLY PRODROMAL SYMPTOMS

The first phase of the acute radiation syndrome is characterized by nausea, vomiting, and diarrhea. The best statistical information on the amount of radiation required to cause various levels of early acute radiation sickness (known clinically as prodromal gastro-intestinal distress) has been derived largely from an analysis of clinical data obtained from the histories of therapeutically and accidentally irradiated persons. The radiation exposures predicted to cause 50% probabilities of loss of appetite, nausea, vomiting, diarrhea and fatigue in such patients are listed in Table A-1.

2.2 HEMOPOIETIC SYNDROME

Clinical changes that develop in the blood following acute exposure often are referred to as the *hemopoietic syndrome*. The earliest change is a fall in the absolute peripheral lymphocyte count. This commences in the first few hours and continues for several days to levels commensurate with the amount of radiation exposure within certain limits. Reduced lymphocyte levels may persist for several weeks. There often is a prompt increase in the leukocyte count during the first few days, then a leveling off for a few more days, following which the granulocyte count will continue to fall with maximum leukopenia developing in two to five weeks. Large doses of radiation may result in severe granulocytopenia within the first seven to ten days, a poor prognostic indicator. Recovery may take several weeks to months. The platelet count usually begins to fall one to two weeks after exposure. Massive radiation exposure doses may cause severe thrombocytopenia to develop much earlier. It may take several months before the platelet counts return to normal. Usually there is a slow decline in the erythrocyte count associated

TABLE A-1
ESTIMATES OF SINGLE RADIATION EXPOSURES THAT WILL CAUSE 50% INCIDENCE OF PRODROMAL RESPONSES (EARLY SYMPTOMS) IN MAN[a]

Effect of Radiation Sickness	Single Radiation Exposure (R[b])	95% Confidence Range (R)
Anorexia (loss of appetite for food)	180	150-210
Nausea	260	220-290
Fatigue	280	230-310
Vomiting	320	290-360
Diarrhea	360	310-410

[a] Source: *Radiobiological Factors in Manned Space Flight*, Edited by W. Langham, National Academy of Sciences Publication 1487, National Academy of Sciences, National Research Council, Washington, D.C., 1967.
[b] Measured in air.

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with reticulocytopenia, the extent of which depends on the amount of radiation exposure and the severity of the acute radiation syndrome.

One difficulty for defining a LOAEL that involves a deterministic effect is the subjective interpretation for deciding when an "observed effect" is truly "adverse." Acute doses between 300 and 400 rem to hemopoietic tissue are generally regarded as mid-lethal doses, while doses below 100 rem are sub-lethal and result in cell depression that are transient and reversible. Wald and others (1962) provides the following doses-response relationship for each of the major blood-cell components:

Lymphocyte Count. The absence of any observable decrease has been equated with an exposure dose of less than 25 R; mild decrease and minor lymphopenia with less than a 100 R dose; a fall of greater than 50% and 90% with a dose of greater than 100 R. A pronounced fall has been taken to indicate a dose in the "dangerous range" from 300 to 1,000 rad. A lymphocyte count above 1,500/mm^3 has been considered to mean less than 200 R; less than 1,000/mm^3 to mean 200 to 400 or 500 R; less than 500/mm^3 to mean 400 or 500 to 900 R; and "virtually zero" to mean greater than 900 R.

Neutrophile Count. A depression count in the fourth and fifth week has been equated with a dose of less than 200 R; severe depression in 3 to 5 weeks with a dose of 200 to 400 or 500 R; and severe depression on days 10 to 20 with a dose of 400 or 500 to 900 R.

Platelet Count. A moderate depression of the platelet count during the fourth and fifth week has been associated with less than 200 R; severe depression in 3 to 5 weeks with 200 to 400 or 500 R; and sever depression on days 10 to 20 with 400 or 500 to 900 R.

Reticulocyte Count. An "unequivocal fall" in the reticulocyte count in five days has been equated with a dose or greater than 300 rad.

Mitotic Index. A progressive decrease has been equated with a dose in the 50 to 200 rad range. The absence of mitoses by the fourth day has been equated with a dose of 200 rad or more.

2.3 LOAELs ASSOCIATED WITH HUMAN GAMETES

Fertility. Radiation exposure of an individual's reproductive tissues may affect the production of mature male sperm or female egg cells. Reduced production of these cells may result in the temporary or permanent loss of ability to father or bear children. Sources of information about radiation effects on human fertility are limited to several studies involving medically exposed individuals (Rowley 1974; Upton 1974) and atomic bomb survivors (Blot 1977; Seigel 1966). Additionally, data from animal studies are generally thought to be applicable for estimating these effects on humans. Collectively, human and animal studies indicate that cells responsible for producing sperm in men and ova in women are among the more radiation-sensitive cells of the body. Nevertheless, radiation sensitivity differs between males and females with regard to reproductive fertility. These differences reflect the dynamics of sperm and egg production.

In the females, the ovary contains the complete inventory of about 2 million immature eggs (i.e., oocytes) at the time of birth. Following sexual maturation at puberty, monthly ovulation induces the production of a

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mature female egg. About 360 to 400 mature female oocytes are produced over her reproductive years. Immature preovulatory egg cells are relatively radioresistant, and following puberty, fertility is impaired only after moderately high doses of 300-400 rad (300,000-400,000 mrad) (NAS 1980). It is not surprising, therefore, that follow-up studies of female Japanese atomic bomb survivors have failed to demonstrate any long-term effects on female (and male) fertility (Blot 1977).

The male testes continuously produce reproductive sperm cells throughout life following sexual maturity. In this steady state of sperm cell renewal, cells are continuously produced to replace functional sperm cells that are expelled or leave the system. The production of mature sperm cells from testicular stem cells involves several cell divisions in which cells undergo dramatic changes. Radiation, which can profoundly impair cell division, is most detrimental in the early stages of sperm cell differentiation. Acute doses of a few rad can temporarily halt cell division at this stage and result in a transient reduction of sperm cell count (ICRP 1984). For increasing doses, the reduction in sperm cell count may lead to temporary or permanent male sterility. Sperm-count studies of males exposed to partial-body irradiation indicate that for gonadal doses of about one hundred to several hundred rad, sterility is temporary, and normal sperm counts resume within one to three years (Upton 1974). Thus, a dose that would permanently sterilize a man is thought to be greater than 500 rad (500,000 mrad) and would exceed the lethal whole body dose for acute radiation exposure (NAS 1980 (BEIR III)).

Among the 38,000 children born to parents irradiated at Hiroshima and Nagasaki with average doses between 31,000 and 39,000 mrem (31 and 39 rem), no statistically significant increase in genetic defects has been seen (Neel 1988; Schull 1981).

3.0 LOAELs ASSOCIATED WITH STOCHASTIC RADIATION HEALTH EFFECTS

Stochastic health effects may not appear for years or even decades after exposure to radiation. Such effects result from specific changes that occur in a few cells or a single cell. Although these selective cellular changes occur rarely, when they do, there is a probability that the altered cell may develop into cancer. If the altered cell is a reproductive cell, there is a possibility of transmitting genetic defects to the progeny of irradiated parents. Also, a developing embryo or fetus could possibly suffer injury if a pregnant woman is exposed to radiation. Thus, radiation-induced stochastic effects may exhibit long latency periods, are probabilistic, and involve biological end-points that occur relatively frequently among unexposed individuals. Because of these constraints, the most informative studies are those that involve (1) a large number of individuals, (2) large radiation doses, and (3) a follow-up period of several decades. These three parameters are frequently used to assess the strength of a study and are quantitatively expressed in person-rem-years.

Summarized in this section are epidemiologic studies grouped by the circumstances in which radiation was received. The categories include:

- Atomic Bomb Survivors
- Medical Exposures
- Fallout from Experimental Weapons Testing
- Occupational Exposures
- Others

3.1 CANCER

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This section summarizes information concerning incidences of cancer related to radiation exposures.

3.1.1 Japanese A-Bomb Data

The most intensely studied human populations are the Japanese survivors of the 1945 atomic bombing of Hiroshima and Nagasaki. A-bomb survivors represent the largest group of humans exposed to radiation for whom estimates of individual doses are available. Survivors in the two cities were exposed to the immediate external radiation produced by bomb blasts and to a lesser extent subsequent internal/external exposure from fallout. Of the 75,991 survivors for whom doses were estimated, 34,272 were so far from the hypocenters that their radiation doses were considered negligible (less than 500 mrem or 0.5 rem); thus, they serve as a comparison or "control" group, leaving 41,719 whose doses are estimated at 500 mrem (0.5 rem) or greater. Table A-2 provides the dose distribution for this group of nearly 76,000 individuals.

TABLE A-2
DISTRIBUTION OF EXPOSURE AMONG A-BOMB SURVIVORS

Dose Range (Rad)	Number of Individuals
≈ 0	34,272
1 - 5	19,192
6-9	4,129
10 - 99	15,346
100 - 199	1,946
200 +	1,106

Data on cancer mortality among these 76,000 individuals have been collected and reported over the years. Relative to "controls" and adjusted for age and sex distribution, the number of observed cancer mortalities among the 76,000 A-bomb survivors has been compared to the number of expected mortalities if exposure to radiation had not occurred. The difference between the observed and expected numbers of cancer is assumed to be attributable to radiation exposure. The data in Table A-3 indicate that, of the 5,936 A-bomb survivors who died of cancer, about 340 of these cancers deaths are thought to have been the result of radiation exposure.

The data also define a dose-response in which increasing doses yield an increased percentage of excess cancers, especially for leukemia. However, some numerical estimates embody substantial statistical uncertainties as to the number of cancer deaths induced by radiation. Thus, for doses between 10,000 and 50,000 mrem (10-50 rem), the small number of excess cancers above normal expected levels is difficult to interpret and may reflect random fluctuations that are not linked to radiation exposure. When doses exceed 50,000 mrem (50 rem), the number of excess cancers is sufficient to support a causal link to human cancers.

TABLE A-3
OBSERVED CANCER DEATHS AND NUMBER OF EXPECTED CANCER DEATHS AMONG A-BOMB SURVIVORS

Doses (Rem)	Approx. No. of Survivors	Leukemia				Non-Leukemia			
		Observed	Expected	Excess		Observed	Expected	Excess	
				No.	%			No.	%
0	34,272	58	88	-	0	2443	2593	-	0
1 - 10	23,321	38	61	-	0	1655	1688	-	0
10 - 50	11,500	32	20	12	38	927	866	61	7
50 - 100	3,500	19	6	13	68	329	273	56	17
100 - 200	2,000	23	3	20	87	218	147	71	33
200 +	1,000	30	2	28	93	132	68	64	48
Total	76,000	202	122	80	40	5,734	5,474	260	5

Source: Shimizu 1987.

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Hanford Cancer Study. An observable excess cancer rate corresponding to much lower doses of radiation has been reported in studies involving occupationally exposed individuals. Mortality studies of Department of Energy (DOE) site workers were initiated in 1965 by the Atomic Energy Commission, under the direction of Dr. Thomas Mancuso of the University of Pittsburgh. Using mortality data dating to the 1940s, researchers examined the death rates among 44,100 Hanford employees. In 1977, Mancuso and his associates, Alice Stewart and George Kneale, first reported their findings (Mancuso 1977). Their analysis of death certificates for 1,336 "non-exposed" and 2,184 "exposed" male workers who died between 1944 and 1972 found statistically significant associations between cumulative external radiation dose and cancer mortality involving the lung, pancreas, and bone marrow. A subsequent analysis of 4,033 deaths among "radiation monitored" male and female workers also indicated elevated cancer risks among male and female workers for cancer of the pancreas, stomach, lung, and bone marrow (Kneale 1978).

The estimates of cancer risks from these two studies are markedly higher than estimates based on data from the Japanese A-bomb survivors and medically exposed populations. However, many scientists, including those belonging to the National Academy of Sciences, have criticized the studies' methodologies (NAS 1980).

3.1.2 Cancer Induction for Childhood Exposures

Some epidemiologic data suggest that young children may be more sensitive to the carcinogenic effects of radiation. However, these data also have not been without controversy. One such study involved thyroid cancers among individuals exposed during childhood.

Scalp Irradiation for Tinea Capitis in Israel. A total of 10,902 Jewish children immigrating into Israel were studied after having received scalp irradiation for ringworm. All but 60 of the patients were successfully traced and matched against an equal number of nonirradiated controls with tinea capitis and a nonirradiated sibling group of half the size. A sixfold increase in malignant thyroid tumors was found in the irradiated group, compared with the controls. Nine of the 12 thyroid cancers in the irradiated group occurred in females, most of them of the papillary-cell type. Ten of the tumors occurred between 9 and 16 years after therapy. A total of 10 patients who developed cancer had an estimated dose of about 6-9 rads to the thyroid, and the other two received 12 and 18 rads (Modan and others 1974; Modan and others 1977a; Modan and others 1977b).

Scalp Irradiation for Tinea Capitis in New York. Shore, Albert, and Pasternak reported on the second survey of a population of 2,215 irradiated and 1,395 nonirradiated control subjects with tinea capitis (Shore and others 1976). Scalp epilation was accomplished with essentially the same technique as in the Israeli population just discussed; the authors produced almost exactly the dosimetry estimates of 6-10 rads to the thyroid. The average age at irradiation was about 8 years, and the average interval of follow-up was about 20 years after irradiation. No thyroid cancers were observed, although patients with benign ademonas were identified. The variance of this study from that of Modan and others (1977b) may be due to the much smaller size of the population.

3.1.3 Cancer Among Children Exposure in Utero

Earlier epidemiologic studies of in-utero exposure have also yielded inconsistent data regarding the risks of in-utero exposure and subsequent childhood cancers. No significant excess mortalities from juvenile leukemia or other cancers were observed among the 1,630 pregnant Japanese women for embryo/fetus doses of 1,000 to 50,000 mrem (1 to 5 rem) (Jablon 1970). However, a tentative link between in-utero

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exposure and childhood cancers was reported in a study of pregnant women exposed to diagnostic radiation to the abdomen in doses in the range of 500 to 5,000 mrem (0.5 to 5 rem) (Stewart 1970; Monson 1984).

For years, the surveys involving diagnostic radiation remained controversial. It was suggested that the original surveys were flawed by certain selection criteria of study subjects since many of the radiological procedures were requested by physicians for medical reasons (Oppenheim 1974; Totter 1981). To rule out the possibility that the diagnostic exposure and observed childhood cancers were not causally linked but merely shared a common risk factor, additional studies involving twin pregnancies were undertaken (Harvey 1985). The study focused on twin pregnancies where the diagnostic x-rays were performed solely because the pregnancy involved twins rather than an existing (or suspected) medical problem, as in the previously studied singleton births. When irradiated twin pregnancies were compared to non-irradiated twin pregnancies, a small increase in childhood cancers was observed (Harvey 1985). However, even this improved study design was clouded by the fact that the majority of individual twins affected by childhood cancers were children of mothers with a history of previous pregnancy loss, which may have predisposed these children to cancer. The National Academy of Sciences (NAS 1990) in its reevaluation of all current data nevertheless stated:

> "These complications, notwithstanding the concordance of the studies of twins with the studies of prenatally irradiated singleton births, prompt the tentative conclusion that susceptibility to the carcinogenic effects of irradiation is high during prenatal life."

Based on the limited available human data, the National Academy of Sciences estimated the risk per unit absorbed dose to be between 0.2 and 0.25 excess cancer deaths in the first 10 years of life per 1,000 children each receiving 1,000 mrem (1 rem) of exposure before birth. About 50% of the excess cancers would be expected to be leukemia.

3.2 LOAELS FOR OTHER IN-UTERO DEVELOPMENT EFFECTS

Although animal experiments have shown developmental health effects in the embryo/fetus for radiation doses as low as 5,000 to 10,000 mrem (5 to 10 rem), it can not be demonstrated with certainty that such low doses can induce injury to a human fetus. The evidence is based on the epidemiologic studies of children born to women of Hiroshima and Nagasaki who were exposed to atomic radiation in- utero. The atomic bomb studies were not able to associate doses below 25,000 mrem (25 rem) with developmental abnormalities of the newborn, such as central nervous system defects, skeletal abnormalities, or reduced stature. For doses above 25,000 mrem (25 rem), the most definitive human data concerning the effects of prenatal irradiation are related to brain development (Beebe 1981). In humans, impaired central nervous system development may lead to small-head size and/or severe mental retardation. Severe mental retardation in the fetus is most likely to result from exposure during the 8th to the 15th week of pregnancy, a period when specific cells, including those of the brain, are undergoing crucial development.

Among the approximately 1,600 Japanese subjects studied who had been exposed to radiation in-utero, there were 30 cases of severe mental retardation (Otake 1987). Severe mental retardation was defined as unable to perform simple calculations, to make simple conversation, or to care of himself or herself (i.e., institutionalized). The association between severe mental retardation and small-head size is not clear. Of the 30 cases of severe mental retardation, 18 individuals exhibited small-head size. For the entire study cohort, the number of individuals exhibiting small heads totaled 71 (Wood 1965).

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Aside from the classification of severe mental retardation, the study cohort of 1,600 individuals exposed in-utero were also given intelligence tests (i.e., Koga test). Intelligence test (Koga) scores of the exposed individuals revealed that radiation-related effects on intelligence was most pronounced when exposure in-utero occurred 8-15 weeks after conception. The distribution of test scores suggests a progressive reduction in IQ scores with increasing radiation exposure. For fetal exposure in the 8th through 15th week, the reduction in intelligence score under a linear dose-response model was 21-29 points at a dose of 100 rad (100,000 mrad) (Schull 1988). For a fetal dose of 1 rad (1,000 mrad), the corresponding risk implies a reduction of about one-quarter of one IQ point.

3.3 LOAELs ASSOCIATED WITH GENETIC MUTATIONS

Radiation exposure of reproductive cells have the potential for inducing developmental malformation, still births, neonatal deaths, and ill-health (inclusive of cancer) in the offspring that is the result of a genetic mutation in the exposed gamete. Japanese A-bomb survivors to date have provided important information using biochemical indicators to screen for mutations. In a total of 289,868 locus tests, involving measurements of 28 different protein phenotypes using one-dimensional electrophoresis to detect protein variants, Neel et al. (1980), have found one probable mutation in the offspring of proximally exposed parents, who received an estimated average gonadal exposure of 31-39 rem in the atomic bombings of Hiroshima and Nagasaki. There were no mutations in 208,196 locus tests involving children of distally exposed parents, who received essentially no radiation exposure. These findings correspond to mutation rates of 0.34×10^{-5} per locus per generations in the proximally exposed parents and zero in the distally exposed parents.

However, the significance of this observed gene mutation remains uncertain. Among the 38,000 children born to parents irradiated at Hiroshima and Nagasaki with average doses between 31,000 and 39,000 mrem (31 and 39 rem), no statistically significant increase in genetic defects has been seen (Neel 1988; Schull 1981).

It is also recognized that certain types of cancers have a heritable component. To test the hypothesis that a parent's job exposure to ionizing radiation affects his or her child's risk of cancer, investigators compared this occupational exposure the year before the child's birth for parents of children with and without cancer (Hicks 1984). The parents of 283 children diagnosed with cancer and the parents of controls were identified and classified by profession (i.e., dentists, radiologists, x-ray technicians, etc.) and industry (i.e., nuclear industry, veterinary medicine, industrial radiography, etc.) in which the potential for occupational exposure was high, moderate, or none. The researchers found no evidence of increased cancer risks among children whose parent(s) worked in occupations classified as having high potential exposures. Another study, however, found that leukemia incidence was higher than normal among children fathered by men who had previously received comparatively high exposures (Gardner 1990). However, this observation by no means proves a causal connection between occupational irradiation of a parent and leukemia in the offspring. In fact, any assumed causal relationship is inconsistent with what is known about radiation genetics, mechanisms of leukemogenesis, and the results of other independent epidemiologic studies.

4.0 CONCLUSION

LOAELs between 10 rem (10,000 mrem) and several 10's of rem have been cited in the literature in behalf of deterministic radiation health effects. These effects principally reflect fractional cell death and reduced division of hemopoietic and male reproductive stem cells. However, these low-level effects are transient and reversible and, therefore, require a subjective interpretation of the definition of an "adverse" health

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effect. Moreover, for deterministic effects, the radiation dose must be delivered over a very short time and would reflect "accidental" conditions of exposure.

LOAELs of less than 10 rem (10,000 mrem) for stochastic radiation health effects are primarily linked to childhood cancer induction (i.e., cancers that result from radiation exposure received during childhood/in-utero, or by genetic mutation of male sperm), and other in-utero effects. However, some of these data remain controversial.

These values must be viewed in context with regulatory exposure limits for members of the public. For all anthropogenic sources of radiation, the regulatory limit for public exposure is 0.1 rem per year (or 100 mrem per year). For a discrete source of radiation exposure, the most common limit for public exposure is 0.025 rem per year (or 25 mrem per year).

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Appendix B-4

Information Regarding Human Health Risk Parameters for the Native American Receptors

Appendix B-4
Information Regarding Human Health Risk Parameters for the Native American Receptors

Contents

Article: "The Spokane Tribe's Multipathway Subsistence Exposure Scenario and Screening Level RME" (Harper et al. 2002) B4-1

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The Spokane Tribe's Multipathway Subsistence Exposure Scenario and Screening Level RME

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Exposure scenarios are a critical part of risk assessment; however, representative scenarios are not generally available for tribal communities where a traditional subsistence lifestyle and diet are relevant and actively encouraged. This article presents portions of a multipathway exposure scenario developed by AESE, Inc. in conjunction with the Spokane Tribal Cultural Resources Program. The scenario serves as the basis for a screening-level reasonable maximum exposure (RME) developed for the Midnite Uranium Mine Superfund site. The process used in developing this scenario balances the need to characterize exposures without revealing proprietary information. The scenario and resulting RME reflect the subsistence use of original and existing natural resources by a hypothetical but representative family living on the reservation at or near the mine site. The representative family lives in a house in a sparsely populated conifer forest, tends a home garden, partakes in a high rate of subsistence activities (hunting, gathering, fishing), uses a sweat lodge daily, has a regular schedule of other cultural activities, and has members employed in outdoor monitoring of natural and cultural resources. The scenario includes two largely subsistence diets based on fish or game, both of which include native plants and home-grown produce. Data gaps and sources of uncertainty are identified. Additional information that risk assessors and agencies need to understand before doing any kind of risk assessment or public health assessment in tribal situations is presented.

KEY WORDS: Native American; subsistence diet; multipathway; exposure scenario

1. INTRODUCTION

Exposure assessment has been termed the "wasteland of risk assessment"[4] because so much information is lacking with regard to exposure patterns and rates, and this is especially true for specific populations such as Native American communities. The need to address a tribe's subsistence exposure is based on fundamental considerations of the tribe, as a people, and the role the reservation and its natural resources play in supporting them. The United States recognizes that Indian reservations were, and are, intended to provide permanent homelands for members of the particular tribes. As such, those members possess the inherent right to use reservation natural resources for subsistence, religious, and other cultural purposes. The Spokane

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[4] Carol Henry, American Chemistry Council, quoted in Wakeland, 2001 *EHP 108*(12): A559.
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Tribe's effort to preserve its culture and environmental quality has, on numerous occasions, been formally memorialized by pronouncements of the tribe's official governing body. The immediate impetus for developing this tribal scenario is the Midnite Uranium Mine Superfund Site, an inactive open-pit uranium mine located on the Spokane Reservation, that has contaminated various media with radionuclides and heavy metals. The exposure scenario described herein is an effort to ensure the proper evaluation of risk to Spokane Tribal members who engage in traditional practices in areas affected by the mine. While this scenario attempts to include as many activities related to Spokane cultural practices as possible, there undoubtedly exist unintended omissions and instances of understated exposure. It is important for readers to understand that this scenario is designed to reflect traditional lifestyles whose practice has been and remain the long-term intent of the tribal council, rather than a current snapshot of statistical cross-sectional surveys. While the latter may be more "quantitative," such surveys would not provide the level of protection needed for safe practice of traditional ways.

The scenario relies on existing ethnographic information about traditional Spokane lifestyles identified by the tribe as accurate[1-3] as well as confirmatory interviews with elders. The Spokane Tribe has determined that information regarding cultural activities, gathering areas, and resources is a cultural resource, and restricts access to that information (Spokane Tribal Resolution 1996-0018); therefore, details regarding specific species, locations, uses, or activities that are deemed proprietary have been omitted.

The scenario also serves as the basis for a screening-level reasonable maximum exposure (RME) developed for the Midnite Uranium Mine Superfund site. This article presents portions of a multipathway exposure scenario developed by AESE, Inc.[4] in conjunction with the Spokane Tribal Cultural Resources Program. It includes dietary factors specific to the Spokane Tribe and builds on previous work,[5] refines some of the exposure factors used in earlier work, and demonstrates how a complex scenario can be used to develop a screening-level RME under CERCLA. It should be noted that the term "subsistence" has been used in this article as a short-hand term that encompasses a broader range of activities than those necessary to sustaining human life such as eating and drinking. It includes other cultural and religious practices as well, such as medicinal and ceremonial uses of natural resources.

Our experience in developing tribal subsistence-based exposure scenarios has led to a set of technical, ethical, and procedural rules:

- To be most useful to regulators and others seeking to protect the health of subsistence users, the information should be developed with an eye toward satisfying appropriate court rules for admissibility of expert testimony. While both state and federal courts have such rules, Federal Rule of Evidence 702, on which many state court rules are modeled, is the most widely applied and interpreted. Rule 702 permits "a witness qualified as an expert by knowledge, skill, experience, training, or education" to testify when his or her "scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue." In response to two U.S. Supreme Court cases holding trial judges responsible for excluding unreliable expert testimony, Rule 702 recently was qualified by amendment. To be admissible, the rule now requires federal courts to find: "(1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." The subsistence scenario incorporates information from a variety of disciplines, including cultural and traditional environmental knowledge. To prevent a challenge to the admissibility of the subsistence scenario as being unreliable, we wish to ensure that the subsistence scenario has been developed as much as possible using

general scientific criteria adopted from the *Daubert* case:[5]

- That each parameter can be tested or verified (documented, modeled, measured, or elicited from acknowledged experts), and that each assumption has been systematically validated. Risk assessors can rely on ethnographic data, verbal representations from subsistence practitioners, and so on. We relied on (1) open peer-reviewed literature on exposures through different but analogous pathways and caloric content of foods, (2) ethnographic documents and reports concerning traditional lifestyles and practices, and (3) statements from tribally recognized cultural experts. This latter expertise derives from their traditional environmental knowledge, and is based on confidential information, so we cannot verify it in the sense of reanalyzing raw numerical data, but we can verify the expertise of the cultural experts who summarized their knowledge of resources and activity patterns for us.
- That another risk assessor could repeat the same steps and would construct essentially the same scenario, because the approach for developing an exposure scenario is fairly standardized.
- That the scenario is accepted by colleagues as reasonable and factual rather than eccentric, unreliable, or mere opinion, or that it meets the "general acceptance" test set forth in *Frye v. United States*, 293 F. 1013 (App. D.C. 1923), the predecessor case to *Daubert*. We satisfy this criteria by obtaining peer review from qualified colleagues ("the relevant scientific community") even beyond the editorial peer-review process. Does this mean that exposure scenarios for over 500 tribes must be peer reviewed and published in *Risk Analysis* in order to be admissible in court should they be challenged during a CERCLA or NEPA process? We believe that if a standardized process is followed and the scenario is reviewed by an advisory board of qualified peers that actual publication is not necessary, even though publication in a peer-reviewed journal is a commonly accepted standard for peer review.
- The scenario must be both scientifically relevant and reliable, and culturally relevant and reliable. The process must be culturally sensitive, respectful, draw on traditional environmental knowledge (such as the observational expertise of elders), and must be developed from within the tribe by a toxicologist/risk assessor in partnership with tribal cultural and technical experts. Collaboration with the Cultural Resources Program provided the cultural assurance.
- Policy-level approval must be obtained. The process must meet Institutional Review Board rules or their equivalent for conducting human research (which we believe includes cultural or anthropological research)

[5] See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) (holding trial courts responsible for excluding unreliable scientific expert testimony); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999) (holding trial courts responsible for excluding unreliable nonscientific expert testimony). An authoritative discussion of *Daubert* and the reliability tests for expert testimony is contained in the Federal Rules of Evidence Advisory Committee Notes, which accompany Rule 702. They include a "nonexclusive" list of considerations for reliability of scientific expert testimony under *Daubert*:

(1) whether the expert's technique or theory can be or has been tested—that is, whether the expert's theory can be challenged in some objective sense, or whether it is instead simply a subjective, conclusory approach that cannot reasonably be assessed for reliability;
(2) whether the technique or theory has been subject to peer review and publication;
(3) the known or potential rate of error of the technique or theory when applied;
(4) the existence and maintenance of standards and controls; and
(5) whether the technique or theory has been generally accepted in the scientific community.

Kumho found that depending on the particular circumstances of the case, these factors may also apply to nonscientific testimony. Other factors considered by post-*Daubert* courts include: whether the expert's opinions were developed independent of litigation or for the purpose of testifying; whether there exists too great an analytical gap between data and opinion; whether obvious alternative explanations have been accounted for; and whether the same level of intellectual rigor is applied in the testimony as would be required in field practice. In addition to reliability, courts will require a testifying expert to be "qualified," and the testimony must be relevant and helpful to the trier of fact. Thus, the emphasis is on testimony being relevant and reliable more than on whether there is a strict litmus test of generating a theory and statistically testing a null hypothesis.

such as informed consent, benefit to the tribal community, disclosure of the risk of adverse consequences, and confidentiality. Repeated conversations with tribal program managers and/or policymakers ensured that there was an understanding of the way that the risk information was to be used, the potential adverse consequences of developing a scenario from a risk acceptance perspective or precedent, and related concerns.

- Identifying resources and activities on a base map overlain by ecological habitats, and constructing a dependency web (culturally relevant natural history diagrams)[6] as a pictorial representation of the ethnohabitat proved helpful. A subsistence food pyramid is another useful tool.

2. THE SPOKANE TRIBE AND ITS ECOCULTURAL LANDSCAPE

The Spokane Indians are part of the Interior Salish group, which has inhabited northeastern Washington and northern Idaho since time immemorial.[1] The Spokane Reservation lies at the confluence of the Spokane and Columbia Rivers in northeastern Washington. Salmon was the most important commodity in the early economy of the tribe. Since the construction of Columbia River dams the anadromous salmon are no longer available. Instead, Kokanee (landlocked sockeye salmon) and resident trout and other species have been substituted. Abundant game also supports an alternative game diet, along with a wide variety of roots, berries, and other plants. Because the reservation is still fairly pristine and undeveloped, it provides enough resources for some members to continue a traditional subsistence dietary lifestyle, and for all members to obtain traditional foods.

The ecology of the reservation area is characteristic of the arid montane areas of the northern Columbia Basin transitioning into the Okanagon highlands to the north. Annual precipitation is approximately 16 inches. The Spokane lands include the two major rivers (the Columbia River and one of its tributaries, the Spokane River) including the waters to their far banks, and various other large and small tributaries, springs, ponds, and wetlands. Mount Spokane is a central feature of the reservation landscape. A Douglas fir zone exists at the highest elevations, with Ponderosa pine and Western juniper zones with a variety of understories at lower elevations, and grassland-sagebrush shrub steppe and riparian areas along the waterways.[7–9] Areas affected by activities at the Midnite Mine include the mined area on Mount Spokane and adjacent upland habitats, several seeps and springs with riparian habitats, and a major creek (Blue Creek) that empties into the Spokane River arm of Lake Roosevelt, the reservoir created in the Columbia River by the Grand Coulee Dam.[10]

The Spokane traditional lifestyle is governed by ecological seasons and the activities that people undertake in response. A significant portion of the population follows this lifestyle in full or in part. Hunting, fishing, and gathering are essential to support nutritional, cultural, spiritual, and medicinal needs of tribal members. Hunting and gathering on the reservation is allowed based on the needs of the family. Typically, all family members work in the field on a regular basis to keep the extended family unit stocked with a wide variety of plants and wildlife. While in the field, tribal members live off the land by consuming surface and spring water, wild plants, and wildlife. In addition to the time spent in hunting, fishing, or gathering, time is also spent cleaning, processing, and preserving hides, drying vegetal food or medicines, and making a wide variety of items. The Spokane people use over 200 varieties of plants.[11] Huckleberries are gathered, as are a wide variety of roots, shoots, moss, leaves, stems, cambium, seeds, and flowers. Most natural resources have several human uses[12,13] as well as providing multiple ecological functions and services. A more complete description of edible plants, ethnographic information, plant technology, ethnobotany, and ethnopharmacology is found in AESE.[4]

3. GENERALIZED LIFESTYLE OF A REPRESENTATIVE COMPOSITE SPOKANE TRIBAL FAMILY

This section describes a family-based exposure scenario founded on traditional Spokane lifestyles and diets (one fish-based diet and one game-based diet). This hypothetical but representative family lives in a house in a sparsely populated conifer forest, tends a home garden, pursues a high rate of subsistence activities and a regular schedule of other cultural activities. The lifestyle is moderately active, with daily sweat lodge use and outdoor employment.

The family composition was determined with the guidance of the Spokane Tribal Culture Program and current tribal demographics. Each family includes an infant/child (age 0–2 years) who breastfeeds for two years and crawls and plays; a child (age 2–6), a youth (age 7–16) who attends school, plays outdoors near the residence, and is learning traditional practices; two adult workers (one male, one female, age 17–55; the female breastfeeds the infant) who work outdoors on reclamation and environmental and cultural activities and also engage in subsistence activities, and an elder (age 56–75) who is partly at home and partly outdoors teaching and demonstrating traditional cultural practices. All members (except the infant) partake in family sweat lodge use and in cultural activities throughout the year. In actuality, a family typically includes members who are employed conventionally and members who are full-time subsistence providers.

3.1. Residence

A conventional suburban scenario would identify a person living at home and growing a garden. The subsistence family is superficially similar to this, but they live in a more open house, spend more time outdoors in cultural and subsistence activities, eat both garden and native foods, and are fully interactive with the environment. The family spends its entire lifetime on the reservation, rather than the suburban default assumption of 30 years. The house has no landscaping other than the natural Ponderosa and understory, some naturally bare soil, a gravel driveway, no air conditioning, and a wood-burning stove in the winter for heat. Each house has its own well for domestic use and a garden irrigated with groundwater and/or surface water. Each house has a nearby sweat lodge. The amount of indoor dust is not known, but is likely to be higher than in suburban communities with manicured lawns, air conditioning, and paved streets.

3.2. Generalized Daily Activity Patterns of Each Family Member

Due to space limitations, the average daily activity pattern is not described for each age range and each gender, but in the full scenario, such information would be included in this section.[6] While activities of Spokane males and females are different, they likely result in a similar frequency and duration of environmental contact, so the genders may be separated or combined. The daily activity patterns can also be combined into entire lifetimes for the evaluation of cumulative risk.

3.3. Sweat Lodge Use (Ages 2–75)

The daily use of the sweat lodge is an integral part of the lifestyle that starts at age two. Sweat lodge construction has been described in the open literature.[14,15] Although the details vary among tribes and among individual families, sweat lodges are generally round structures (6 feet in diameter for single-family use). A nearby fire is used to heat rocks that are brought into the sweat lodge. Water (4L) is poured over the rocks to form steam (a confined hemispheric space with complete evaporation of the water, which is available for inhalation and dermal exposure over the entire skin area). Water is ingested (1L is included in the total drinking water ingestion rate) and medicinal plants are used (not specifically included).

3.4. Cultural Activities

All persons participate in day-long outdoor group cultural activities once a month, such as pow-wows, horse races, and seasonal ceremonial as well as private family cultural activities. These activities tend to be large gatherings with a greater rate of dust resuspension and particulate inhalation. Individuals also tend to be more active during the ceremonies, resulting in greater inhalation and water ingestion rates. These activities are folded into the higher soil ingestion, water ingestion, and inhalation rates rather than being estimated on a single-event basis.

3.5. Diet

The Spokane food pyramid looks markedly different from the USDA food pyramid. Caloric needs are generally cited in the range of 2,000 to 4,000 kcal per day for adult males, depending on the level of activity. We use 2,500 kcal/day for the Spokane Tribe, based on a moderately active outdoor lifestyle and renowned athletic prowess (as did Scholz[3]). The original diet of the Spokane Indians was based on salmon and included large and small game, roots, berries, and many other plants.[2,3,11] Hunn[16] estimated that 45% of the native Columbia Plateau dietary calories came from protein (fish and game), with higher estimates

for upriver tribes such as the Spokane.[3] Historically, the Spokane Tribe consumed roughly 1,000 to 1,500 grams of salmon and other fish per day.[2,3] The most robust upper bound estimate of original (predam) salmon intake by the Spokane Tribe is the Walker estimate (cited in Reference 3) of 1,200 pounds per year of salmon per adult, or 1,426 gpd (about 3 pounds/day), yielding 2,566 kcal/day before migration (i.e., if caught in the estuary) and 2566×0.64 1643 kcal/day after migration from the ocean to the Spokane area. With the construction of the Grand Coulee Dam, the anadromous salmon runs were destroyed, so there was a shift to big game and to Kokanee and resident trout. Because the intent of this scenario is to evaluate exposures that traditional members currently receive and that more members will receive as they regain a traditional diet, two diets were evaluated: a high fish diet and a high game diet. Eighty percent of each diet is native, augmented with vegetables grown in a household garden. The current realistic high fish diet based on availability, percentage of the diet, and caloric content consists primarily of fish (885 g/d, somewhat lower than historical levels), supplemented by big game, aquatic amphibian/crustacean/mollusks, small mammals, and upland game birds. The high game diet reverses the fish-game quantities, and both diets include identical amounts of native and domestic plants. Both forms of the diet are approximately 40% protein, 25% fat, and 35% carbohydrate (given the limited data available for native foods), which is comparable to other hunter-gatherer diets.[17] Until recently, this diet was even higher in fish-derived protein, and was stable for at least 5,000 years (based on archaeological evidence of salmon runs). The carbohydrates are largely unprocessed and include many roots but little grain. The fats are from fish, game, nuts, and seeds.

3.6. Drinking Water

Daily replacement water needs are approximately 2L/100 pounds body weight (more during exercise or pregnancy).[6] Athletic activity can result in a loss of 1.5 L/hour; replacement volumes are recommended as 1 to 1.5 ml/kcal of energy expended.[18] Harris and Harper[5] estimated an average water ingestion rate of 3 L/day for adults, based on total fluid intake for the Confederated Tribes of the Umatilla Indian Reservation. However, that number did not account for all uses. This scenario includes adult water ingestion of 1L while at home (from the household water supply), 1L taken from home to the worksite, 1L consumed from worksite sources, and 1L from the household or spring to rehydrate during use of the sweat lodge, for a total of 4 L/d.

3.7. Soil Ingestion

Soil ingestion by young children (0–6 years) is assumed to be 400 mg/day for 365 days/year. This is higher than the prior EPA default value of 200 mg/day.[19] It reflects both indoor dust and continuous outdoor activities analogous to gardening or camping,[20] but is less than a single-incident sports or construction ingestion rate.[21,22,23] For adults, the soil ingestion value is also 400 mg/day, reflecting an unspecified upper percentile.[21] This value also better reflects the environmental setting, the typical residential situation, gardening and gathering activities, the preparation and consumption of native and garden plants, the consumption of other natural foods, and a variety of additional outdoor activities (work, play, cultural activities). However, it may still substantially underestimate the amount of soil and sediment on garden produce and gathered plant foods. In particular, episodic events such as gathering in wetlands or road work could result in 1 gram of soil ingested per event,[21,22,23] which may be over and above the 400 mg ingested daily. If there is geophagy (eating dirt for micronutrients or salt), the ingestion would be higher yet. In fact, the intentional presence of some Mother Earth in food may be beneficial medically[23] and spiritually.

3.8. Inhalation Rate

We believe that an inhalation rate of 30 m^3/d is more accurate for the Spokanes' active, outdoor lifestyle than the EPA default rate of 20 m^3/d.[21] EPA[21] reviewed several extensive studies that examined ventilation rates based on direct management and activity diaries in developing the default rate of 20 m^3/day. EPA recognizes that special populations, such as athletes or outdoor workers, have higher average rates and recommends

[6] U.S. Air Force at http://www.capnhq.gov/nhq/cp/ encampments/AETC.htm#AETC.; Coyle at http://www.veggie.org/veggie/fluid.exercise.shtml).

Table I. The Spokane Subsistence Composite RME Scenario

Medium	Description (Not All Routes of Exposure are Listed)
Groundwater	Each family has their own well for drinking/household, watering the garden, sweat lodge
Surface water	Each family uses surface water (seep and creek) for domestic and garden use, washing locally gathered materials, and the worker uses surface water during fieldwork and sweat lodge
Air	Indoor radon, sweat lodge radon, outdoor radon daughters, inhalation of resuspended dust, inhalation of aerosols
Soil	Direct ingestion, deposition on plants, as-gathered conditions, and indirect (uptake from soil to plant)
Sediment	Duplicates the soil; gathering may include high rates of sediment exposure that may be underestimated
Sweat lodge	Daily for 2 hours, using groundwater (springs) or surface water
Pathway	**Description (Not All Routes of Exposure are Listed)**
Inhalation	30 m^3/d to accommodate indoor and outdoor activities; the inhalation rate for strenuous outdoor activities may actually be underestimated (can be discussed as a source of uncertainty)
Drinking water	4 L/d; this is duplicated for surface and groundwater if both are contaminated; fluid replacement needs for strenuous activity may be underestimated
Other water uses	Garden irrigation, dermal and inhalation while showering, other standard routes of exposure
Sweat lodge	Steam, inhalation, immersion
Soil ingestion	400 mg/d (100 mg/d from indoor sources and 300 mg/d from outside sources); outdoor sources may vary in concentration; indoor dust is equal to local outside soil; this is duplicated if sediment is included; episodic events 1 gram each
Other	Other factors are as reported previously (dermal, etc.; Harris and Harper, 1997)

High Fish Diet—About 2500–3000 kcal/d (Moderate Adult Level)		High Game Diet—About 2500–3000 kcal/d (Moderate Adult Level)	
Fish (10% of which is organ meat with 10x concentrations; sockeye and mixed trout are used for calorie estimates)	885 g/d = 1300 kcal	Big game (10% of which is organ meat with 10x concentrations; deer and elk are used for calorie estimates, not beef)	885 g/d = 1000 kcal
Big game	100 g/d = 110 kcal	Fish	75 g/d = 180 kcal
Local small game, fowl	50g/d = 75 kcal (or 25g birds, 25g rabbits)	Local small game, fowl	50 g/d = 75 kcal (or 25g birds, 25g rabbits)
Aquatic foods (mussels and crayfish are nutritionally similar)	175 g/d = 120 kcal	Aquatic foods	175 g/d = 120 kcal
Vegetal calories	1600 gpd = about 1000 kcal (mixed species)	Vegetal calories	1600 gpd = about 1000 kcal (mixed species)
10% garden (above ground)		10% garden (above ground)	
10% garden (below ground)		10% garden (below ground)	
40% gathered terrestrial below ground		40% gathered terrestrial below ground	
20% gathered terrestrial above ground		20% gathered terrestrial above ground	
20% aquatic		20% aquatic	
Other calories (medicines, etc.)	Not determined	Other calories (medicines, etc.)	Not determined
Dairy (children only)	0.5 L/d milk	Dairy (children only)	0.5 L/d milk

Note: The best estimate of original (predam) salmon intake by the Spokane Tribe is the Walker estimate (cited in Scholz *et al.*, 1985) of 1,200 pounds per year of salmon per adult, or 1,426 gpd (about 3 pounds), yielding 2,566 kcal before migration and 2566 × 0.64 = 1643 kcal after migration from the ocean to the Spokane area. The current 885 gpd is based on a combination of calories estimates, availability, interviews, and dietary balance. The current Spokane diet relies on Kokanee (landlocked sockeye) and trout (bull or Dolly Varden, rainbow), suckers, whitefish, other species. Salmon and steelhead are obtained whenever possible. Mussels and crayfish were also eaten regularly.

Both fish and game are eaten fresh, smoked, or dried, but there are few data on calories or contaminant concentrations according to method of preparation. No contaminant loss during preparation is assumed, since contaminants could become more concentrated as well as being lost with fat loss.

The dietary data are not adequate to distinguish fruit, berries, greens, roots, bulbs, fungi/moss, seeds/nuts, medicines, or sweeteners on a caloric basis, nor domesticated from wild plants. If data for uptake from soil/sediment or dust/sediment load for a native species becomes available, the intake of that species will be estimated. The proportion of above and below ground plants is based on reliance on tubers and bulbs, using USDA caloric information on domesticated plants from the same plant families. Intake of other plants (medicines, rose hips, etc.) occurs but was not determined.

Dairy may be underestimated (cheese, milk), and eggs are not specifically included, but should be included depending on the information supplied by tribal members.

While many animal species are similar with respect to how much nutrition they provide to people, their contaminant concentration will vary according to their habitat and ecological niche, as well as their location and size of home range. This is estimated through the ecological food web or actual sampling data.

All the exposure factors are constant through the year (i.e., they apply 365 days/year).

calculating their inhalation rates using the following median hourly intakes for various activity levels (in m^3/hr): resting = 0.4, sedentary = 0.5, light activity = 1, moderate activity = 1.6, heavy activity = 3.2. For outdoor workers, a median rate is 1.3, with an upper percentile of 3.3, depending on the ratio of light, moderate, and heavy activities during the observation time. "Inhalation rates may be higher among outdoor workers/athletes because levels of activity outdoors may be higher, therefore, this subpopulation group may be more susceptible to air pollutants and are considered a 'high risk' subgroup."[23] Using this EPA guidance, a median rate of 26.2 m^3/d is obtained from eight hours sleeping, two hours sedentary, six hours light activity, six hours moderate activity, and two hours heavy activity. This represents minimal heavy activity (construction, climbing hills, etc.), and is a median rather than a reasonable maximum. The California Air Resources Board[25] also reviewed daily breathing rates based on activity levels and concluded that 20 m^3/d represents an 85th percentile of typical American adult lifestyle (eight hours sleeping and 16 hours of light to moderate activity), a lifestyle that is less active than an outdoor lifestyle in a topography that includes steep slopes, as on the Spokane Reservation.

4. A SCREENING-LEVEL COMPOSITE RME

Due to the number of age groups, daily activities, and limited EPA funds for determining both media-specific exposure point concentrations as well as developing and subsequently running the risk model, EPA requested that the tribe condense the scenario into a screening-level composite RME application for use in the Midnite Mine risk assessment (Table I). The principle of developing a screening scenario is to reduce the number of calculations by combining (not eliminating) pathways and age groups, and maximizing exposure factors to a reasonable degree. The screening-level risk assessment then generally employs the composite RME and the upper 95th percentile exposure point concentrations in each medium, wherever they occur throughout the site, so that any location, activity, diet, or water source has the chance to drive risk. This means that the result of the screening-level risk assessment is not strictly location, pathway, age, or activity specific. It only indicates whether unacceptable sitewide risk is possible and shows the spatial aspects of the risk profile if plotted on a base map. In the future, EPA or the tribe will need to use the full scenario and location-specific exposure point concentrations to assess risk attributable to location, pathway, age, or activity. Such information will be required to evaluate the remedial alternative during the feasibility study and to quantify residual risk once remediation has been completed.

The full scenario was condensed as follows. The daily time allocation is 12 hrs/d indoors, 2 hours in the sweat lodge, 7 hours outdoors working, playing, and other nonsubsistence activities, and 3 hours of subsistence activities in *each* contaminated area where these activities might occur. This will result in more than a 24-hour day, but is necessary to reduce the number of calculations. Alternately, the person can live and subsist at the single most contaminated location. Soil ingestion remains at 400 mg/d for 365 days/year (100 mg from indoor sources and 300 from outdoor sources; for multiple contaminated subsites, each contributes 300 mg, which could result in more than 400 mg/d; alternately, the single most contaminated soil location can serve as the sole source of soil-based exposure). For application to other areas, such as wetlands, 1 gram per visit may be used.[21,22] Drinking water

Table II. Examples of Differences in Exposure Factors for a 70 kg Adult

Parameter	Default Value[1]	Subsistence Value[2]
Drinking water ingestion	2 L/day	4 L/d (includes 1L during sweat lodge use)
Soil ingestion	200 mg/d (children) 50 mg/d (adult)	400 mg/d for all ages
Inhalation rate	20 m^3/d	Varies by average activity level; 30 m^3/d.
Meat & fish ingestion[3]	21.1 g/d (general population) and 70–170 (subsistence); 17.5 g/d (general population) and 142.4 g/d (subsistence)	885–1000 g/d fish and 100 g/d meat (high fish diet), or 885 g/d meat and 75 g/d fish (high game diet); 50 g/d small game for each, 175 g/d shellfish for each; no dairy for adults is included in this total
Vegetable ingestion	Fruit and vegetable totals: 539 g/d; grain: 287 g/d[4]	1600 g/d; fraction obtained locally = 1, both gathered and home-grown
Exposure frequency	Varies according to climate and activity	365 d/yr unless documented otherwise
Exposure duration	30 yrs (assumes retirement elsewhere) or less (average time spent in a home)	70 yrs (a full lifetime)

[1] EPA *Exposure Factors Handbook*, in totals per day assuming 70 kg body weight.
[2] These values apply only to the Spokane Tribe unless verified specifically for other tribes. Dietary factors are specific to the Spokane Tribe. Total caloric intake is assumed to be the same for both scenarios but in fact may be higher for the more athletic outdoor lifestyle.
[3] *Exposure Factors Handbook*, Volume II, Section 10.10 recommends using 21.1 g/d total fish and shellfish as the mean value for the general population and 70 g/d for Native American subsistence populations (mean value) or 170 g/d (95th percentile). EPA Office of Water (Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health 2000, EPA-822-B-00-004 and Water Quality Standards for Indian Country at www.epa.gov/ost/standards/tribal/tribalfact.html) uses 17.5 g/d as the 90th percentile for the general population and 142.4 g/d for subsistence populations as the 99th percentile, all in uncooked weight. These values are all for adults and are all based on current cross-sectional surveys that likely omit traditional tribal members. The Spokane value reflects existing documentation on historical subsistence consumption rates with caloric evaluation, confirmatory interviews with the tribal cultural staff, and tribal policy goals for regaining traditional healthy cultural lifestyles, not on dietary surveys.
[4] *Exposure Factors Handbook*, Volume II (mean values).

remains at 4 L/d, which is derived from the most contaminated source (this is duplicated for surface and groundwater if both are contaminated). This results in an upper bound sitewide risk estimate. Risks for an actual individual who specializes in certain activities (i.e., the hunter or the fisher), spends more time in fewer locations or a single location, or fully utilizes a contaminated medium such as groundwater, could be as high as but no higher than this upper bound estimate. Subsequent analyses using either the complete scenario or the composite RME can examine particular pathways and locations, or can be used to support risk management decisions such as remedial goals, subsistence soil and water remedial screening levels, or tribal regulatory standards.

Table II shows some of the major differences between EPA default exposure factors and our subsistence scenario. We are not presenting a sensitivity analysis in this article because the relative contribution of various exposure factors will depend on the concentration of contaminants in various media and their physical parameters, and specific human activity patterns at the contaminated site. This will be the subject of another article. However, we expect that the major factors for subsistence lifestyles or lifestyles with high environmental contact rates will be soil ingestion, drinking water, exposure duration, and diet. We should note that the dietary factors in the *Exposure Factors Handbook* reflect major categories of the diet rather than a necessarily complete diet—adding average caloric content for the categories identified in the *Handbook* totals about 2000 kcal/d for the general population, which is lower than actual national average caloric intakes by up to one-third. That other third of the diet is not likely to come from the contaminated site, so from an exposure perspective this does not detract from suburban dietary exposure estimates. The subsistence diet in this article, however, yields a full day's calories (~2500 kcal). If one tried to construct a subsistence diet solely from the *Handbook*, the caloric intake would fall short of an adequate amount even if the intake factors for Native Americans were used. One could erroneously equate "subsistence" with a modern diet supplemented with fish, game, and wild plants using

intake rates that are given in the *Handbook*. This could be due to several factors: whether reservation dwellers were specifically sampled during the three-day recall surveys (versus urban or suburban dwellers who happened to be Native American), the difference between current reservation conditions (with USDA commodity foods) and a truly subsistence lifestyle, socioeconomic factors, and so on. Thus, developing a subsistence exposure scenario with a traditional diet and cultural practices specific to reservation living needs to rely primarily on ethnographic data and cultural information, and only secondarily on national dietary survey data.

5. DATA GAPS AND SOURCES OF UNCERTAINTY ASSOCIATED WITH THE SCREENING-LEVEL RME

An incomplete list of data gaps and uncertainties are briefly discussed below. The relative error caused by each uncertainty cannot be ascertained at this time. We believe that the overall uncertainty and variability are greater in tribal communities than in suburban communities due to the greater number of risk factors and the potential for several risk factors to cluster in particular communities and individuals. Because tribal members could be at greater risk due to both greater exposure and greater sensitivity, an additional safety factor or precautionary approach may be warranted in these types of situations.

5.1. Mobile Versus Stationary RME

The typical suburban RME for members of the general population is a house-bound individual with a local garden, or a residential farmer who is largely self-sufficient. In these cases, the house and garden are assumed to be located at the contaminated site and available for unrestricted use. The subsistence family also lives where the contamination occurs if this is physically possible, but may spend more time away from the immediate residence during subsistence activities. However, a subsistence RME should not assume that exposure is diluted by spending significant amounts of time in uncontaminated areas. For large sites with variable contaminant concentrations, problems arise when trying to perform a single risk assessment to evaluate multiple hot spots (as not-to-exceed concentrations), even if the risk assessment assumes that the person moves around from hot spot to hot spot or if all subsistence activities are assumed to occur where the upper 95th concentration limit occurs. Additionally, the problem of spatially integrating widespread contamination still remains because, conceptually, 10 acres of contamination poses a greater risk than one acre with the same contaminant concentration. Temporally, persistent contaminants pose a longer risk, and therefore a greater total risk, than degradable contaminants. Unfortunately, the present regulatory framework does not use spatial or temporal risk metrics (such as risk acre-years, or dose per community gene pool across several generations) to account for this cumulative exposure over time and space and people.

5.2. Special Activities

There are special circumstances when some people may be highly exposed that have not been included in the complete scenario or the screening-level RME. For instance, some men hunt or fish for the general community, and many people provide roots and fish and game to elders in addition to their own families. Gathering of some plants (e.g., cattails, water potatoes, reeds, and rushes) is a very muddy activity and rivershore or lakeshore activities may underestimate sediment exposure (soil ingestion can be 1 gram per event[21,22,23]). Washing, peeling, weaving rushes, and other activities results in additional exposure. For example, basketmakers clean and wash their materials, incur cuts on their hands, and hold materials in their mouth. Flintknappers may receive additional exposure through obtaining and working with their materials. In addition, there are potential pathways that are not specifically identified but that might contribute additional exposure, such as contaminated firewood used for smoking food, plants used for teas, flavoring, smudging, or medicine, contact with contaminated animal parts (paints, bone ornaments, clothing), sitting on the ground for long periods of time while processing or during ceremonial activities, and so on. Even though the composite activity patterns are intended to reflect reasonable maximum exposures, there is a potential for underestimating some pathways (i.e., this is not a worst-case scenario).

5.3. Community Exposure Burdens

An entire community exposure burden estimate or population dose estimate may be needed that

includes people who do not reside in but occasionally visit the contaminated area (this includes inadvertent intruders onto the site). If a resource is contaminated, the entire community is exposed. The assumption that protecting the RME adequately protects everyone else may result in a failure to provide all the information that the tribe's governing body needs for informing its members. There may be sensitive individuals (children, elders, the sick, the occupationally exposed) who, arguably, may or may not be protected by using standard reference doses and other factors. Also, tribal leaders often make decisions at the community rather than the individual level (i.e., the survival of the individual may not be as important as the survival of the family or community, so the community is also an appropriate unit of analysis). Therefore, decisions where everyone is exposed to a low level of contamination may be different from and more stringent than decisions where a few individuals are at high risk or decisions where risks are distributed over time, space, or populations rather than localized. We believe this to be an important but understated element of real risk and risk-based decision making (not to be dismissed as perceived risk, or cultural amplification of real risk, or a risk management determination). The nature and extent of community exposure can be estimated over time and space by estimating the number of people and the number of generations that could live in each area or concentration isopleth and be exposed (a community chemical effective dose equivalent). The total number of generations and the number of people per generation need to be described in terms of the total number of people exposed, total dose for the community (or the gene pool), proportion of each generation exposed, and so on. Even more broadly, the total dose for a small community's combined gene pool or neuronal pool could be estimated. Finally, the proportion of each generation that is affected, rather than simply the number of people (in a small population), can be determined.

5.4. Background Exposure and Communitywide Exposure from Other Sources

Under the National Contingency Plan and subsequent EPA guidance, EPA is charged with evaluating incremental risk to humans caused by a release from the subject site. This means that when evaluating a Superfund site, EPA is not charged with evaluating risk associated with high concentrations of naturally occurring substances, such as arsenic, measured in background soil, water, or food, if the concentrations were not increased by on-site activity, nor risk associated with releases of contaminants from another site. When there is background contamination (however that is defined), or widespread low-level contamination, this contamination contributes to cumulative exposure to many or all people in the community. From a human health standpoint, the origin of the contaminant is irrelevant. However, from a liability-based regulatory standpoint such as CERCLA, the origin is paramount. In the case of the Spokane scenario, it is known that Columbia River fish are contaminated with PCBs and metals (there are existing fish advisories for Lake Roosevelt and for an upriver portion of the Spokane River), but cleanup at the mine site is proceeding as if this contamination is not present or that people are not exposed to it. When an entire community is exposed to nonsite contaminants, we believe that this should be included as part of the total risk burden, and that the clean-up goals for the incremental risk posed by the site itself may need to be modified (see, for instance, OSWER Environmental Justice Action Agenda, EPA 540/R-95/023, which states that "OSWER supports Agency-wide efforts to develop scientifically valid standards to measure cumulative risk."). Other EPA approaches are more cumulative in nature, such as the Guidance on Cumulative Risk Assessment (http://www.epa.gov/ORD/spc/cumrisk2.htm); Toward Integrated Environmental Decision Making (EPA-SAB-EC-00-011; http://www.epa.gov/science1/ecirp011.pdf); and various permitting programs based on total toxicant burdens in a watershed or airshed. As another example, the EPA approach to arsenic or other substances in drinking water is to require treatment to safe levels even if these are lower than natural background levels.

5.5. Individual Exposure Factors

The exposure assessment literature is lacking relevant information for subsistence activities. For instance, gardening or camping are typically used by risk assessors as an analogue for hunting and gathering activities, athletic physiological factors are used as an analogue for more vigorous outdoor activities, sports nutrition information is used in checking diet, and so on. Several pathways are simply unknown, such as the use of medicinal plants

(further, certain of these pathways need to be included in a way that does not violate confidentiality). We believe that some factors, particularly soil ingestion, are still underestimated. The amount of exposure obtained as a person consumes wild foods (often without being able to wash them first as is assumed in a typical suburban scenario) is unknown, as is the amount of soil remaining on gathered vegetation even if it is washed, because environmental samples are generally not analyzed in an as-gathered or as-consumed condition.

5.6. Ecological Food Web as an Input to Human Exposure

At present, the tribe does not know if the ecological risk assessments being prepared by EPA for the Midnite Mine will provide the appropriate information for estimating human subsistence dietary information. Existing ecological and human health risk models are generally incompatible. Ecological models typically have more species but fewer pathways, while human health models have many more pathways but generally less trophic-level capability. The lack of transfer factors (soil to plant, and dispersion through the food web) may also pose a problem. EPA is attempting to address this nationally; it is especially important to include tribal considerations during these discussions.

5.7. Seasonality and Acute Exposures

Some of the original activity patterns over the annual seasonal cycle have been modified in modern times, but the ecological cycles have not. Therefore, people must still gather plants according to when they are ripe, hunt according to game and fowl patterns, and fish when the spawning runs occur. The Spokane Tribe Cultural Resources Program confirmed that although specific activities change from one season to the next throughout the year, these activities are replaced by other activities with a similar environmental contact rate. This scenario assumes that exposure is fairly homogeneous because even in winter months materials are gathered, cleaned, and used, and native foods are eaten (i.e., all factors are applied 365 days per year). However, it is possible that excessive acute exposures occur, over and above the annually averaged exposure rates included in this scenario.

5.8. Co-Risk Factors

Many co-risk factors cluster in tribal communities, including poverty, higher rates of existing health conditions (such as diabetes), poorer access to health care, inadequate infrastructure, 500 years of cumulative psychological stress, employment in occupations with more chemical exposures, and so on. Data on other factors such as enzyme polymorphisms related to detoxification or disease susceptibility are simply absent. Each of these factors is known to influence the health response to chemicals, although data are lacking about their combined effect as well as their prevalence in any particular tribal community.

6. CONCLUSION

Although the scenario discussed in this article greatly improves the accuracy of risk-based decision making in Indian Country, much still remains to be done in order for tribes to achieve the same proportional degree of risk reduction that suburban communities have enjoyed for many decades. Existing human-health-based regulatory standards were not developed with subsistence in mind, so tribes are always less protected because they are always more exposed. This is not meant to indict standards as intentionally ignoring certain populations, simply that there are situations and populations that did not receive attention when the regulations were written many years ago. The inequity of this situation has not been fully explored, but is the topic of current research. Additionally, this scenario is not generalizable to other tribes, particularly the diet section, although the soil and drinking water exposure factors may prove to be fairly similar for many tribal settings.

The true worth of any risk assessment is measured by whether its results are used, even if the ultimate decision is based more on other factors such as economics, technical feasibility, or precaution. One of the goals of a project manager is to achieve a stable decision, or one that is durable over time, even if this is not explicitly stated. Decision stability is not merely due to compromise or consensus, but also to whether a community's expectations are met regarding the specific metrics and impacts to be assessed. Decisionmakers or community leaders have certain information needs that can help design a truly useful risk assessment, even if the assessment takes form somewhat differ-

ently from the norm. We believe that deliberately incorporating community concerns into both the risk assessment and the risk management decision makes decisions more stable and robust, not less scientific. It is a matter of opinion whether responding to community issues within the risk assessment itself, rather than deferring these items until a later risk management phase, improves the assessment and makes it more useful by tailoring it to the specific situation, or merely results in inconsistency by making results less useful for comparing risks between sites.

We would also like to raise the bar for risk ethics. The traumatic history of federal actions against tribes is still recent history for many tribal nations and tribal members experience remnants of federal extermination and assimilation policies literally every day. This is a strong and discomforting statement, but it is a reality risk assessors and project managers must recognize if they work on tribal risk issues. It might even be said that tribes are still at war, a war that is being fought in the courts on a daily basis to preserve their rights, jurisdiction, resources, religion, homeland, and way of life. We do not want risk assessors to underestimate how serious this is to tribal members and tribal staff. Many or most tribal members can name ancestors who died defending their rights and homelands, and the current generation of tribal scientists honors this by vigilantly protecting the rights and resources on which their culture and identity and existence depend. Mistrust of the federal government and its risk assessment tools can be extremely high and pervasive. Particularly in tribal communities, risk assessors or public health assessors typically run afoul of tribal perspectives because they do not understand the community and its history. There is a tendency to want to get the details right first, then step back and look at the implementation or consequences (i.e., to keep risk assessment separate from risk management). We do not intend to introduce bias into the risk assessment that might come from knowing so much about the community that unconscious judgments are made about how to tailor the assessment (for instance, making a subconscious determination that remediation might take dollars away from other visibly urgent needs). We simply want the assessor to be more aware of the subjects of his or her assessment from the start so as to avoid pitfalls, missteps, and negative community reactions. Currently, tribes and regulators still operate from two different decision paradigms. We wish to recognize the tremendous progress made in recent years by various federal agencies in increasing the attention paid to these issues, but we recognize how much remains to be done.

DISCLAIMER

This exposure scenario has been approved for publication by the Spokane Tribal Council and for use in the Midnite Mine risk assessments. It should not be viewed as a release or waiver of any claims or rights concerning the protection of human health and the environment, the injury of natural resources, or any other claim or right.

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Regarding: Daily Inhalation Rate of 30 m^3/day in: Risk Analysis, Vol. 22, No. 3, pp. 513-26 (2002).

Harper et al. specify a lifetime daily inhalation rate of 30 m^3/day in *The Spokane Tribe's Multipathway Pubsistence bxposure Pcenario and Pcreening i evel o Mb*. At first glance, it seems reasonable that a higher inhalation rate would be appropriate for a tribal subsistence exposure scenario compared with rates applied to risk assessments prepared by EPA under CERCLA for non-subsistence exposure scenarios. However, upon closer examination, 30 m^3/day appears biologically implausible based on daily caloric requirements, which are a better measure of long-term breathing rates (Layton, 1993).

The EPA Exposure Factors Handbook (Handbook) (U.S. Environmental Protection Agency, 1997) recommendations described by (Harper et al., 2002) were taken out of context. The Handbook recommendations specifically apply to short-term exposures (i.e. data derived from short-term inhalation studies apply to exposures of similar duration) (U.S. Environmental Protection Agency, 1997). These studies measured inhalation rates within a time scale of hours. For lifetime exposures, the EPA Handbook (U.S. Environmental Protection Agency, 1997) recommends inhalation rates of 11.3 and 15.2 m^3/day for female and male adults, respectively based on (Layton, 1993).

With the exception of (Layton, 1993), most inhalation studies estimated inhalation rates by determining the relationship between inhalation rate and heart rate using short-duration, controlled activities over a range of exertion levels for each subject. Inhalation rates of individuals conducting daily activities were then derived by measuring heart rates and converting the heart rate to inhalation rate using [illegible] appropriate for estimating short-term exposures. An alternative approach to measuring short-term inhalation rates associated with various activities is to calculate inhalation rates using caloric energy consumption to balance inhalation with metabolic respiration (Layton, 1993). This approach was the basis for the average lifetime inhalation rates recommend by the Handbook and has been expanded by others to develop metabolically consistent estimates of multi-route exposures (Layton, 1993; McCurdy, 2000). The metabolic approach is appealing because it relates caloric requirements to respiration to reduce the uncertainties associated with using hourly inhalation rates to estimate lifetime exposures. There is less uncertainty associated with daily energy consumption rates than with using short-term

inhalation rates to estimate average lifetime daily inhalation rates because it is easier to measure food intake than air intake. Dietary and activity patterns were based upon the probabilistic National Health and Nutrition Examination Survey and the Nationwide Food Consumption Survey (cited by Layton). Survey results were adjusted upwards to account for under reporting of foods consumed. The most recent survey reported daily intakes of approximately 2,000 kilocalories (U.S. Department of Agriculture Beltsville Human Nutrition Research Center, 1998).

Using equations developed by (Layton, 1993), and the caloric requirements of 2,500-3,000 kilocalories specified by (Harper et al., 2002) yields inhalation rates of 14.3-17.1 m^3/day, respectively, which contradict the 30 m^3/day rate. A lifetime inhalation rate 30 m^3/day is not supported by any of the studies evaluated by the Handbook (U.S. Environmental Protection Agency, 1997) or by more recent studies (Marty et al., 2002). Furthermore, 30 m^3/day equates to 5,250 kilocalories/day, an implausibly high value for a lifetime and approximately double the energy requirements specified by (Harper et al., 2002).

Using the equations from (Layton, 1993), yields the following results:

$V_E = E \times H \times VQ$

V_E = minute ventilation volume liters per minute (1 L/min = 1.44 m^3/day)
H = volume of O_2 in liters consumed per kJ expended .05 L O_2 /kJ
E = energy expenditure kJ per day (1 kJ = .239 kcal)
VQ = ventilatory equivalent ratio of V_E to V_{O2} unitless (both quantities are liters per minute)
VQ = 27

Daily Kilocalories Consumed	Estimated Daily Inhalation Rate
2,000	11.4 m^3/day
2,500	14.3 m^3/day
3,000	17.1 m^3/day
3,500	20 m^3/day
5,250	30 m^3/day

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Response to Stifelman

Harper et al.

W would lik to addr s s v al points rais d in Stif man's l t . H says that th Layton m abolic approximation, developed via studies performed by others on the general population, indicates that a long-term inhalation rate of 30 m^3/d is biologically implausibl r ativ to th Spokan Trib s di and traditional lifeways. Ptifelman would apply national (urban and suburban) averages for respiratory and metabolic parameters, average suburban activity levels, and average suburban dietary values to people who maintain an active outdoor lifestyle throughout their entire adult lives (through age T0) and eat a native diet. However, we documented both the diet and its caloric content as well as the activity levels in the traditional lifestyle. fn other words, instead of estimating inhalation rates based solely on caloric intakes (i ayton's approach), we documented caloric intake rates *and* estimated inhalation rates from activity tables. This approach is preferred when activity data are available; otherwise, spirometry would no longer be necessary--one would only need caloric intake to calculate inhalation rates. Ptifelman merely confirms that the parameters i ayton used for the general population do not apply to traditional tribal members and their active, outdoor lifestyle and native diet.

1. What are traditional lifeways?

Th xposur factors in th Spokan Trib s sc nario ar bas d on th lif styl s of traditional tribal members, including youth who are learning traditional subsistence skills, adult outdoor workers who also hunt, gather, and fish, and elders who gather plants and medicines, and prepare and use them (e.g., making medicines or baskets, etc.) and who teach a variety of indoor and outdoor traditional activities. This may be hard for modern office workers to conceptualize, but traditional tribal communities have no sedentary members except the frail elderly, whereas one-quarter of modern American adults of all ages report no leisure time physical activity at all.[1] W provid (3A with a d scription of typical "days in th lif of" and "y rs in th lif of" ch ag group, including s sonal variations, for us in th0 idnit r ranium Mine Baseline Human Health o isk Assessment. t e further documented this lifestyle and diet with published anthropological studies specific to the Ppokane fndians, and ethnographic literature on foraging theory, hunting-gathering lifestyles, and tribal recommendations on diabetes prevention.

2. Use of the Layton metabolic equation to calculate inhalation rate from dietary calories, rather than direct observation of activity levels and breathing rates.

b mA (199T) thoroughly reviewed the i ayton method in the b xposure c actor Handbook. ft is an alternative method, not necessarily a better method, and as not d by (3A "th low [inhalation rat level obtained with the metabolic approach (25%) compared to the activity pattern approach is not well support d by th data..." ((xposur) actors Handbook, pag 5-16). Th uation employ d by Layton assumes such a tight link between ventilation rate and caloric intake, that caloric intake can be used to stimat v ntilation rat and vic v sa, by using national av ag s for th uation's simplifying factors. Ptifelman asserts that this relationship can be extended to traditional tribal members and their unique genetics and lifestyle. t e disagree. Any of a dozen variables for respiratory physiology, oxygen transport and oxidative processes in muscle cells may be different for people practicing active traditional lifeways, and some of these are known to be different in certain indigenous populations (e.g., Andes n uechan and Tibetan peoples and their genetically-based altitude adaptations for oxygen utilization). Another set of variables for metabolism and native diets need to be considered as well. All of these

[1] (http www.cdc.gov lbrfss pdf L2001prvrpt.pdf and http www.cdc.gov lbrfss pubrfdat.htm).

variables are well known, but it is not known how these variables cluster in various ethnic populations. We believe it is improper to assume all ranges of ages, genders, ethnicities, fitness levels, and pulmonary condiWons are capWred in single naWonal averages. Tribal populaWons are noWepresenWd by a "high end Wil" of a naWonal melWng poWof eWniciWes, buWdiscreW lifesWles proWcWd by TreaWes and/or federal Trusteeship obligations.

Merhaps the most relevant factors associated with ethnic-specificity are the thrifty genotype(s), insulin use, and oxidation and adiposity patterns (d oran, 2000; c ox et al., 1998; Muzzin et al., 1999; o ush et al., 199T; Paad et al., 1991; h ue v oung et al., 2002), as well as ethnic differences in spirometry (Crapo et al., 1988; i anese et al., 19T8; Mapel et al., 199T; Aidaraliyev et al., 1993; Berman et al., 1994). o esearch on the thrifty genotype suggests that there may be several stress response genes that enable indigenous populations to respond to environmental stresses and to the rapid transition between extremes, including feast and famine, heat and cold, disruption in circadian rhythms, dehydration, seasonality, and explosive energy output or rapid transitions between minimum and maximum exercise and s 1 2_{max} (h imm et al., 2002; 6niWer eWal., 1998). These genes "uncouple" several energy expendiWre parameWrs (imm eWal., 2002) embedded in LayWn's eTuaWon, furWer indicaWng WaWeWnic-specific daWshould be developed if LayWn's eTuaWon is used.

Pimilarly, the national average diet cited by Ptifelman is not relevant to populations who eat traditional diets. Most tribes are recommending a return to native diets wherever possible for people who are not already eaWng WadiWonally. We agree wiW 6Wfelman's implicaWon WaWour caloric inWke (we used 2500 kcalIday) might be somewhat underestimated (see, for instance, Pteegman et al., 2002). e owever, we believe that the thrifty genotype, with its more efficient energy utilization, alters the ratios of ventilation rate, calorie needs, and activity levels so that the documented Ppokane diet (2500 h calId or a little more) and observed activity levels are compatible with an inhalation rate of 30 m^3Id.

3. Short-term versus long-term inhalation rates.

Most federal and state agencies use either the b mA default value of 20m^3Id or use activity levels to estimate long-term inhalation rates. We found no examples of federal or states agencies that rely on a metabolic equation to derive inhalation rates. When we developed the Ppokane exposure scenario, we evaluated activity levels through anthropological data and confirmatory interviews, and used the Ce Aa -based b mA recommendations for ventilation rate for the different activity levels. Peveral examples of similar approaches areW

- (3A's 1 aWonal Air Toxics AssessmenWhomepage: hWp://www.epa.gov/WW/aW/naW/ natsa3.html) uses the Ce Aa database in its e AmbM4 model to estimate national average air Wxics exposures even Wough "We lack of acWiWy pattern data that extend over longer periods of times presents a challenge for e AmbM4 to predict the long-term (yearly) activity patterns that are reTuired W deWrmine chronic exposures." Therefore, "an approach of selecWon of a series of single day's patterns (from Ce Aa) to represent an individual's activity pattern for a year was developed."
- The California Air o esources Board (CAo B, 2000) reviewed daily breathing rates based on activity levels and measured ventilation rates for many activities in the Ce Aa database. The average hourly rate for sleeping was 0.5 m^3Ihr, light activities at 0.55 m^3Ihr, moderate activities at 1.4 m^3Ihr, and heavy rates of activity levels at 3.4 m^3Ihr. The CAo B concluded that 20 m^3Id represents an 85th percentile of typical adult sedentaryIlight activity lifestyles. This is based on 8 hours sleeping and 16 hours of light activity with no moderate or heavy activity, or 1 hour day of moderate and heavy activity each.

- In their technical guidance document, "Long-term Chemical Exposure Guidelines for Deployed Military Personnel," the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommended an inhalation rate of 29.2 m^3/d for US service members. Deployed personnel were assumed to spend 6 hours sleeping at an inhalation rate of 0.4 m^3/hr, 4 hours in sedentary activities (at 0.5 m^3/hr), 6 hours in light duties (at 1.2 m^3/hr), and 8 hours in moderate duties (at 2.2 m^3/hr).[2]
- EPA used 30 m^3/day for a year-long exposure estimate for the general public at Hanford, based on a person doing 4 hours of heavy work, 8 hours of light activity, and 12 hours resting.[3]
- 7 hHD2 ('s / DvUHncHBHJkHHY / DEoUtoUy Dlso usHG30 P ^{3}/G "thHwoUkIng EUHDthIng UDHIs IoU 8 hours of work and, when combined with 8 hours of breathing at the active rate and 8 hours at the resting rate, gives a daily equivalent intake of 30 m^3 IoUDn DGult."[4]
- c or radionuclide exposures, EPA recommends using a lifetime average value of 19.2 m^3/day for men and 16.5 m^3/day for women, based on the Third k HAk ES (EPA, 1999). They also reviewed the Layton paper and pointed out that the single s n number proposed for all ages and activity lHVHs DnGEoth gHnGHJ SosHs gUHD uncHtDInty, DnGstDHGthD EHcDusH "UHIDElHDgH DnGgHnGHJ sSHcIIIc cHntUD vDluHs IoU9 4 hDVHnot EHn HstDElIshHG thH' C5 3 's UHcoP P HnGHGDgH DnG gHnGHJsSHcIIIc InhDDtIon UDHs, UDhHUthDn UDHs GHJvHGIUoP / Dyton's P HthoG DUHDSSlIHGIn [thIs) G5 13 GocuP Hnt]" ((3A, 1999, SDgH139).

4. The use of population-specific information rather than national averages.

EPA instructs risk assessors to identify the receptor population and their activities or land use.[5] "AssHssoUs DUHHncouUDgHGto usHvDluHs whIch P ost DccuUDHy UHlHct thHHKSosHGSoSulDtIon."[6] The 1 St Eo Land Use Directive[7] requires the identification of land uses for the baseline risk assessment; when the affected resources are on reservations or areas where tribes retain usory rights, a subsistence/residential land use must be assumed if the Tribe so indicates. Executive l rder 12898[8] requires the identification of subsistence consumption of natural resources, and for Indian Tribes this includes the activities required to obtain those resources.

EPA recognizes that inhalation rates may be higher in certain populations, such as athletes or outdoor workers, because levels of activity outdoors may be highHUovHUlong tIP HSHJoGs. "'I sItHsSHcIIIc GDD are available to show that subsistence farmers and fishers have higher respiration rates due to rigorous ShysIcD DctIvItIHs thDn othHUUHcHStoUs, thD GDDP D EHDSSUoSUDH"[9] Such subpopulation groups are

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[2] http://www.gulflink.osd.mil/particulate_final/ particulate_final_s06.htm and http://www.gulflink.osd.mil/pm/pm_en.htm.

[3] (http://yosemite.epa.gov/r10/AIo PAGE.k Sc/ 1887fc8b0c8f2aee8825648f00528583/f8e7130584971528882569300072cd00?l penDocument).

[4] (www.lbl.gov/ehs/epg/tritium/TritAppB.html)

[5] http://www.epa.gov/superfund/programs/risk/ragsd/table4instructions.pdf.

[6] Exposure c actor Handbook, s olume 1, page 5-23

[7] 1 St Eo Directive 9355.7-04, "Land Use in the CEo CLA o emedy Selection Process" (May 25, 1995)

[8] t hite House, 1994. c ederal Actions To Address Environmental gustice In Minority Populations And Lowincome Populations: c eb. 11, 1994; 59 co 7629, c eb. 16, 1994.

[9] (3A (2 6: (5) "HuP Dn HHDth 5 Isk Assessment Protocol for Hazardous t aste Combustion c acilities, Support Materials s olume 1: Human Health o isk Assessment Protocol for Hazardous t aste

considered 'high risk' subgroups.[10] bPA (1997) recommends calculating their inhalation rates using the following median hourly intakes for various activity levels (in m^3/hr): resting = 0.4, sedentary = 0.5, light activity = 1, p oderate activity = 1.6, heavy activity = 3.2. (PA's p edian rate for outdoor workers is 1.3 m^3/hr, with an upper percentile of P.P m^3/hr, depending on the ratio of light, moderate and heavy activities during the observation time. Other bPA risk assessments typically use 4.8 m^3/hr for construction workers, 2.5 m^3/hr for groundskeepers, and similar values applied to an 8 hour work day and extended for an entire worklife.

Pince we have population-specific data, we believe that bPA is required to use it in order to meet its statutory p andate to protect hup an heaOh – and particuOrO if p ep bers of an expOcit popuOation are identifiably discrete. r sing bPA guidance on hourly inhalation rates for different activity levels, a reasonabO inhaOtion rate for an average tribaOp ep ber's active Ofestyo is a p edian rate of 26.2 p ^{3}/d, based on 8 hours sleeping at 0.4 m^3/hr, 2 hours sedentary at 0.5 m^3/hr, 6 hours light activity at 1 m^3/hr, 6 hours moderate activity at 1.6 m^3/hr, and 2 hours heavy activity at P.2 m^3/hr.

5. Conclusion

r nlike other exposure factors, which are upper bounds, the inhalation rate is a median rate.

(PA says "an upper percentiO is not recop p ended"[11] with no reason given. This is inconsistent with the usual o Mb approach used in Puperfund risk assessments, and could result in under-protection of children, the elderly, athletes, asthmatics, and the half of the population with above-average inhalation rates. a ue to a tribal desire to protect more than just the average traditional person, we have chosen to round up the value of 26.2 m^3/d to P0 m^3/day. t e are continuing to collect data on tribal activities analogous to Ce Aa categories, and will continue to follow bPA's generaOHAP(0 4 approach. : e shouO note that we are not focusing on a cross-section of tribal members, some of whom have westernized lifestyles, but specifically on traditional lifeways, subsistence activities, and native diets which were reserved between the r nited Ptates and the tribal governments and which continue to be protected by federal law.

: e beOeve the reaOp otivation for chaOnging the tribes' inhaOtion rate is (PA's concern for setting precedent for other applications, such as air emissions from the r matilla Army Chemical Munitions fncinerator (and other point sources affecting tribal lands) and the nationaOtribaOair ɿuaOty ruO. (PA's Tribal Consultation Policy[12] requires genuine consultation before changing exposure factors developed by tribal scientists and promulgated through tribal law.

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Appendix C

Ecological Risk Assessment

Appendix C
Ecological Risk Assessment

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Appendix C-1

Lists of Common Vascular Plants, Mammals, Common Birds, Amphibians and Reptiles, Plant Species of Concern, and Wildlife Species of Concern

Appendix C-1
Lists of Common Vascular Plants, Mammals, Common Birds, Amphibians and Reptiles, Plant Species of Concern, and Wildlife Species of Concern

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Project Documents

None

Codes and Standards

None

Other Documents

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Table C1-1 Common Vascular Plants Found on the Hanford Site

Scientific Name	Common Name
Shrub-Steppe Species Shrubs	
Artemisia tridentata	big sagebrush
Chrysothamnus nauseous	grey rabbitbrush
Chrysothamnus viscidiflorus	green rabbitbrush
Eriogonum niveum	snowy buckwheat
Grayia (Atriplex) spinosa	spiny hopsage
Purshia tridentata	bitterbrush
Perennial Grasses	
Agropyron dasystachyum	thick-spike wheatgrass
Agropyron desertorum (cristatum)	crested wheatgrass
Agropyron sibericum	Siberian-wheatgrass
Agropyron spicatum	bluebunch wheatgrass
Oryzopsis hymenoides	Indian-ricegrass
Poa sandbergii (secunda)	Sandbergs bluegrass
Sitanion hystrix	bottlebrush squirreltail
Sporobolus cryptandrus	sand dropseed
Stipa comata	needle-and-thread grass
Perennial Forbs	
Achillea millefolium	yarrow
Arenaria franklinii	sandwort
Astragalus caricinus	buckwheat milkvetch
Astragalus sclerocarpus	stalked-pod milkvetch
Balsamorhiza careyana	balsamroot
Brodiaea douglasii	cluster lily
Comandra umbellata	comandra
Cymopterus terebinthinus	turpentine cymopterus
Erigeron filifolius	threadleaf milkbane
Frittillaria pudica	yellow bell
Helianthus cusickii	Cusick's sandflower
Lomatium grayi	Gray's desert-parsley
Machaeranthera canescens	hoary aster
Oenothera pallida	pale evening primrose

Table C1-1 Common Vascular Plants Found on the Hanford Site

Scientific Name	Common Name
Penstemon acuminatus	Beard tongue
Phlox longifolia	long-leaved phlox
Psoralea lanceolata	scurf pea
Rumex venosus	sand dock
Sphaeralcea munroana	desert mallow
Thelypodium lanciniatum	thelypody
Annual Forbs	
Ambrosia acanthicarpa	ragweed
Amsinckia lycopsoides	fiddleneck tarweed
Chaenactis douglasii	false yarrow
Chorispora tenella	purple mustard
Crepis atrabarba	hawk beard
Cryptantha circumscissa	matted cryptantha
Cryptantha pterocarya	cryptantha
Descurainia pinnata	tansy mustard
Draba verna	spring draba
Epilobium paniculatum	willow-herb
Erodium cicutarium	filaree (cranes bill)
Erysimum asperum	western wall flower
Holosteum umbellatum	jagged chickweed
Lastuca serriola	prickly lettuce
Lepidium perfoliatum	pepperweed
Annual Grasses	
Bromus tectorum	cheatgrass
Festuca microstachys	small fescue
Festuca octoflora	six-weeks fescue
Riparian Plants Trees and Shrubs	
Apocynum cannabinum	dogbane
Morus alba	white mulberry
Populus trichocarpa	black cottonwood
Prunus spp.	peach, apricot, cherry
Robinia pseudo-acacia	black locust

Table C1-1 Common Vascular Plants Found on the Hanford Site

Scientific Name	Common Name
Salix amygdaloides	peachleaf willow
Salix exigua	sandbar willow
Salix spp.	willow
Perennial Grasses and Forbs	
Allium spp.	wild onion
Artemisia campestris	Pacific sage
Artemisia ludoviciana	prairie sage
Carex spp.	sedge
Centurea repens	Russian-knapweed
Coreopsis atkinsonia	tickseed
Eleocharis spp.	wiregrass
Equisetum spp.	horsetail
Gaillardia aristata	gaillardia
Grindelia columbiana	gumweed
Heterotheca villosa	golden aster
Juncus spp.	rushes
Lupinus spp.	lupine
Phalaris arundinacea	reed canary grass
Polygonum persicaria	smartweed
Scirpus spp.	bulrushes
Solidago occidentalis	goldenrod
Typha latifolia	cattail
Veronica anagallis-aquatica	speedwell
Aquatic Vascular	
Elodea canadensis	waterweed
Lemna minor	duckweed
Myriophyllum spicatum	water milfoil
Potamogeton spp.	pondweed
Rorippa nasturtium-aquaticum	watercress
Rorippa columbiae	Columbia yellow cress

Source: Cushing 1992 in Hanford Environmental Impact Statement.

Table C1-2 List of Mammals Occurring on the Hanford Site

Scientific Name	Common Name
Antrozous pallidus	pallid bat
Brachylagus idahoensis	pygmy rabbit
Canis latrans	coyote
Castor canadensis	beaver
Cervus elaphus	elk
Erethizon dorsatum	porcupine
Eutamias minimus	least chipmunk
Lagurus curtatus	sagebrush vole
Lasionycteris noctivagans	silver-haired bat
Lasiurus cinereus	hoary bat
Lepus californicus	black-tailed jackrabbit
Lepus townsendi	white-tailed jackrabbit
Lutra canadensis	river otter
Lynx rufus	bobcat
Marmota flaviventris	yellow-bellied marmot
Mephitis mephitis	striped skunk
Microtus montanus	montane meadow mouse
Mus musculus	house mouse
Mustela erminea	short-tailed weasel
Mustela frenata	long-tailed weasel
Mustela vison	mink
Myotis californicus	California brown bat
Myotis lucifugus	little brown bat
Myotis yumanensis	Yuma brown bat
Neotoma cinerea	bushy-tailed woodrat
Odocoileus hemionus	mule deer
Odocoileus virginianus	white-tailed deer
Ondatra zibethicus	muskrat
Onychomys leucogaster	northern grasshopper mouse
Perognathus parvus	Great Basin pocket mouse
Peromyscus maniculatus	deer mouse
Plecotus townsendii townsendii	Pacific western big-eared bat

Table C1-2 List of Mammals Occurring on the Hanford Site

Scientific Name	Common Name
Procyon lotor	raccoon
Rattus norvegicus	Norway rat
Reithrodontomys megalotis	western harvest mouse
Sorex merriami	Merriam shrew
Sorex vagrans	vagrant shrew
Spermophilus townsendii	Townsend ground squirrel
Sylvilagus nuttallii	Nuttall cottontail rabbit
Taxidea taxus	badger
Thomomys talpoides	northern pocket gopher

Source: Cushing 1992 in Hanford Environmental Impact Statement.

Table C1-3 Common Birds Occurring on the Hanford Site

Scientific Name	Common Name
Ageless phonics	red-winged blackbird
Alas aceta	northern pintail
Alas americana	American wigeon
Anas clypeata	northern shoveler
Anas platyrhynchos	mallard
Ardea herodias	great blue heron
Aythya americana	edhead
Branta canadensis	Canada goose
Bucephala albeola	bufflehead
Calidris mauri	western sandpiper
Calidris minutilla	least sandpiper
Carpodacus mexicanus	house finch
Charadrius vociferus	killdeer
Chordeiles minor	common nighthawk
*Columba livia*rock	dove
Corvus corax	common raven
Dendroica coronata	yellow-rumped warbler
Eremophila alpestris	horned lark
Fulica americana	American coot
Hirundo pyrrhonota	cliff swallow
Hirundo rustica	barn swallow
Junco hyemalis	dark-eyed junco
Larus californicus	California gull
Larus delawarensis	ring-billed gull
Limnodromus scolopaceus	long-billed dowitcher
Mergus merganser	common merganser
Numenius americanus	long-billed curlew
Passer domesticus	house sparrow
Pica pica	black-billed magpie
Podilymbus podiceps	pied-billed grebe
Sturnella neglecta	western meadowlark
Sturnus vulgaris	European starling

Table C1-3 Common Birds Occurring on the Hanford Site

Scientific Name	Common Name
Turdus migratorius	American robin
Tyrannus verticalis	western kingbird
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow

Source: Cushing 1992 in Hanford Environmental Impact Statement.

Table C1-4 Amphibians and Reptiles Occurring on the Hanford Site

Scientific Name	Common Name
Amphibians	
Bufo woodhouseii	Woodhouse's toad
Hyla regilla	Pacific treefrog
Spea intermontana	d reat Basin spadefoot
Reptiles	
Chrysemys picta	painted turtle
Coluber constrictor	western yellow-bellied racer
Crotalus viridis	western rattlesnake
Hyspiglena torquata	desert night snake
Masticophis taeniatus	striped whipsnake
Phrynosoma douglassii	short-horned lizard
Pituophis melanoleucus	gopher snake
Sceloporus graciosus	sagebrush lizard
Uta stansburiana	side-blotched lizard

Source: Cushing 1992 in Hanford Environmental Impact Statement.

Table C1-5 Plant Species of Concern on the Hanford Site

Scientific Name	Common Name	Status*
Allium robinsonii	Robinson's onion	M3
Allium scillioides	squill onion	M3
Arenaria franklinii v. thompsonii	Tompson's sandwort	FC3b, M2
Artemisia campestris var. wormskioldii	northern wormwood	FC1, Pb
Artemisia lindleyana	Columbia o iver mugwort	M3
Astragalus columbianus	Columbia milkvetch	FC2, PT
Astragalus sclerocarpus	stalked-pod milkvetch	M3
Astragalus speirocarpus	medick milkvetch	M3
Astragalus succumbens	crouching milkvetch	M3
Balsamorhiza rosea	rosy balsamroot	M3
Carex densa	dense sedge	P
Cirsium brevifolium	palouse thistle	M3
Cryptantha interrupta	bristly cyptantha	P
Cryptantha leucophaea	gray cryptantha	P
Cuscuta denticulata	desert dodder	M1
Cyperus rivularis	shining flatsedge	P
Erigeron piperianus	3 iper's daisy	S
Limosella acaulis	southern mudwort	P
Lindernia anagallidea	false-pimpernel	P
Lomatium tuberosum	Hoover's desert-parsley	FC2, ST
Oenothera pygmaea	dwarf evening-primrose	P
Pellaea glabella	smooth cliffbrake	M3
Penstemon eriantherus	fuzzy beardtongue	M3
Rorippa columbiae	Columbia yellowcress	FC2, Pb

* Plant species of concern status definitions:

State Definitions (WSDNR 1990)

SE - State endangered: Plant taxa that are in danger of becoming extinct or extirpated within the near future if factors contributing to their decline continue.

S - State threatened: Plant taxa that are likely to become endangered within the near future if factors contributing to their population decline or habitat degradation continue.

S - Sensitive: Plant taxa that are vulnerable or declining, and that could become endangered or threatened without active management or removal of threats.

M1 - Monitor group 1: Plant taxa in need of further field work before a status can be assigned.

Table C1-5 Plant Species of Concern on the Hanford Site

M2 - Monitor group 2: Plant taxa with unresolved taxonomic questions.

M3 - Monitor group 3: Plant taxa that are more abundant and less threatened than previously assumed.

Federal Definitions (50 CFR 17)

FC1 - Candidate plant taxa for which enough substantial information on biological vulnerability and threat is available to support listing as threatened or endangered by the federal government.

FC2 - Candidate plant taxa for which there is some evidence of vulnerability, but not enough data to support listing proposals at this time.

FC3 - Candidate plant taxa that were once considered for listing as threatened or endangered but are no longer candidates for listing.

Subcategory (FC3b) includes names that, on the basis of current taxonomic understanding, do not represent distinct taxa meeting the *Endangered Species Act of 1973* definition of species.

Source: Sackschewsky and others 1992 in Hanford Environmental Impact Statement.

Table C1-6 Wildlife Species of Concern on the Hanford Site

Scientific Name	Common Name	Status*
Mammals		
Antrozous pallidus	pallid bat	SM
Brachylagus idahoensis	pygmy rabbit	FC2, ST
Lagurus curtatus	sagebrush vole	SM
Onychomys leucogaster	northern grasshopper mouse	SM
Plecotus townsendii	Pacific western big-eared bat	FC2, SC
Sorex merriami	Merriap 's shrew	SC
Birds		
Accipter gentilis	northern goshawk	FC2, SC
Aechmophorus clarkii	Clark's grebe	SM
Aechmophorus occidentalis	western grebe	SM
Ammodramus savannarum	grasshopper sparrow	SM
Amphispiza belli	sage sparrow	SC
Aquila chrysaetos	golden eagle	SC
Ardea herodias	great blue heron	SM
Athene cunicularia	burrowing owl	SC
*Branta canadensis leucopareia***	Aleutian Canadian goose	Fb, Sb
Buteo regalis	ferruginous hawk	FC2, ST
Buteo swainsoni	Swainson's hawk	SC
Caserodius albus	great egret	SM
Cathartes aura	turkey vulture	SM
Centrocercus urophasianus	western sage grouse	FC2, SC
Chlidonias niger	black tern	FC2, SM
Falco columbarius	merlin	SM
Falco mexicanus	prairie falcon	SM
Falco peregrinus	peregrine falcon	Fb, Sb
Falco rusticolus	gyrfalcon	SM
Gavia immer	common loon	SC
Grus canadensis	sandhill crane	Sb
Haliaeetus leucocephalus	bald eagle	FT, ST
Himantopus mexicanus	black-necked stilt	SM
Lanius ludovicianus	loggerhead shrike	FC2, SC

Table C1-6 Wildlife Species of Concern on the Hanford Site

Scientific Name	Common Name	Status*
Melanerpes lewis	Lewis' woodpecker	SC
Myiarchus cinerascens	ash-throated flycatcher	PM
Numenius americanus	long-billed curlew	PM
Nyctea scandiaca	snowy owl	PM
Nycticorax nycticorax	black-crowned night heron	PM
Oreoscoptes montanus	sage thrasher	PC
Otus flammeolus	flammulated owl	PC
Pandion haliaetus	osprey	PM
Pelecanus erythrorhychos	white pelican	PE
Podiceps auritus	horned grebe	PM
Podiceps grisegena	red-necked grebe	PM
Sialia mexicana	western bluebird	PC
Sterna caspia	Caspian tern	PM
Sterna forsteri	Forster's tern	SM
Sterna paradisaea	arctic tern	PM
Strix varia	barred owl	PM
Reptiles		
Hypsiglena torquata	desert night snake	PM
Masticophis taeniatus	striped whipsnake	PC
Amphibians		
Bufo woodhousei	Woodhouse's toad	SM
Fish		
Catostomus platyrhynchus	mountain sucker	PM
Cottus beldingi	Piute sculpin	PM
Cottus perplexus	reticulate sculpin	PM
Percopsis transmontana	sand roller	PM
Mollusks		
Fisherola nuttalli	short-faced lanx	[c] C2, PC
Fluminicola columbiana	Columbia pebble snail	[c] C2, PC
Insects		
Cicindela columbica	Columbia [o] iver tiger beetle	PC

Table C1-6 Wildlife Species of Concern on the Hanford Site

* Species of concern status definitions:

Federal Definitions (from *Endangered Species Act*, as amended by PL 100-207, November 23, 1988; Federal Register, Vol. 54, 1 R 4, ˜anuary 6, 1989, 1 RtIre Rf 5 evIew–AnIp alV 8 S FIvh and : IldIIfe ServIre).

FE - Federal endangered: A species in danger of extinction or extirpation throughout all or a substantial portion of its range.

FT - Federal threatened: A species that is likely to become endangered within the near future because of threats to its population.

FC2 - Federal candidate for listing, Category 2: A species for which there is some evidence of vulnerability, but for which there are not enough data to support listing proposals at this time.

State Definitions (t Sa t 1991F

SE - State endangered: A species native to t ashington State that is seriously threatened with extinction throughout all or a substantial portion of its range within the state. Endangered species are designated in t AC 232-12-014.

ST - State threatened: A species native to t ashington State likely to become endangered within the foreseeable future throughout substantial portions of its range within the state without cooperative management or the removal of threats. Threatened species are designated in t AC 232-12-011.

SC - State candidate: A wildlife species native to t ashington State that the a epartment of t ildlife will review for possible listing as endangered, threatened, or sensitive.

SM - State monitor: A wildlife species native to t ashington State of special interest because at one time it was classified as endangered, threatened, or sensitive; it requires habitat that has limited availability during some portion of its life cycle; it is an indicator of environmental quality; further field investigations are required to determine its population status; there are unresolved taxonomic problems that may bear upon its status classification; it may be competing with and impacting other species of concern; and it has substantial popular appeal.

** Rare migrant or accidental occurrence on the e anford Site (a owns and others 1993F

Source: a owns and others 1993, Stengen 1993, Landeen and others 1992 in e anford Environmental fmpact Statement.

Appendix C-2

Soil-to-Plant Transfer Factors, Terrestrial Bioaccumulation Factors, and Aquatic Bioaccumulation Factors for Ecological Chemicals of Potential Concern and Radionuclides of Potential Concern

Appendix C-2
Soil-to-Plant Transfer Factors, Terrestrial Bioaccumulation Factors, and Aquatic Bioaccumulation Factors for Ecological Chemicals of Potential Concern and Radionuclides of Potential Concern

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Annotated Contents of Appendix C-2 Tables

Table C2-1, Ecological Transfer Factors for COPCs and ROPCs

This table contains values of log K_{ow} and log K_{oc} for organic COPCs; ecological bioconcentration factors for uptake from soil to plants; bioaccumulation factors for uptake from soil to terrestrial invertebrates; transfer factors from ingested material to mammals; and bioconcentration factors from water to aquatic biota, aquatic plants, aquatic invertebrates, and benthic invertebrates. The preferred source of data for each type of factor was EPA (1999). For plants and mammals, Baes and others (1984) was next in order of preference for inorganic COPCs and ROPCs. For organic COPCs for which no measured data were available, uptake factors were estimated by using equations derived by regression analysis of uptake of organic compounds under controlled conditions. Equations for uptake factors and for radiation dose factors, their numbers in the text, the locations of their descriptions in the text, and their sources follow:

Terrestrial plants- bioconcentration factor for uptake of organic COPCs from soil to terrestrial plant tissue (SPv):
log SPv = 1.588 - (0.578 × log K_{ow})
Equation 8-60, section 8.2.5.3 (Travis and Arms 1988). Terms are defined in section 8.2.5.3 and in the notes to Table C2-1.

Terrestrial invertebrates – Bioaccumulation factors for uptake of organic COPCs from soil to terrestrial invertebrates (BAF-S):
log BAF-S = 0.819 × log K_{ow} - 1.146
Equation 8-63, section 8.2.5.3 (Southworth and others 1978). Terms are defined in section 8.2.5.3 and in the notes to Table C2-1.

Mammals and birds - transfer factors from ingested material to animal tissue (Ba):
For mammals, log Ba = log K_{ow} -7.6
Equation 8-66, section 8.2.5.3 (Travis and Arms 1988). Terms are defined in section 8.2.5.3 and in the notes to Table C2-1.
For birds, Ba = 0.8 × Ba for mammals

Aquatic plants - bioconcentration factors for uptake of organic COPCs from water to plant tissue (t P):
log t P = 0.819 × log K_{ow} - 1.146
Equation 8-72, section 8.2.5.4 (Southworth and others 1978). Terms are defined in section 8.2.5.4 and in the notes to Table C2-1.

Aquatic plants - bioconcentration factor for uptake of organic COPCs from sediment to rooted aquatic plant tissue (SP):
log SP = 1.588 - (0.578 × log K_{ow})
Equation 8-73, section 8.2.5.4 (Travis and Arms 1988). Terms are defined in section 8.2.5.4 and in the notes to Table C2-1.

Aquatic invertebrates - bioconcentration factors for uptake of organic COPCs from water to invertebrate tissue (BCF_{inv}):
log BCF_{inv} = 0.819 log K_{ow} - 1.146
Equation 8-74, section 8.2.5.4 (Southworth and others 1978). Terms are defined in section 8.2.5.4 and in the notes to Table C2-1.

Fish - bioconcentration factors for uptake of organic COPCs from water to invertebrate tissue (BCF_{fish}):
$\log BCF_{fish} = 0.91 \times \log K_{ow} - 1.975 \times \log (6.8 \times 10^{-7} \times K_{ow} + 1.0) - 0.786$
Equation 8-75, section 8.2.5.4 (Bintein and others 1993). Terms are defined in section 8.2.5.4 and in the notes to Table C2-1.

Benthic invertebrates - bioaccumulation factors for uptake of organic COPCs from sediment to benthic invertebrates (BASF):
$\log BASF = 0.819 \times \log K_{ow} - 1.146$
Equation 8-76, section 8.2.5.4 (Southworth and others 1978). Terms are defined in section 8.2.5.4 and in the notes to Table C2-1.

Table C2-2, Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Bioaccumulation factors for uptake from ingested soil by mammals and birds ($BAF\text{-}T_s$) was calculated as:
$BAF\text{-}T_s = Ba \times IR_F \times SF \times BW$
Equation 8-10, sections 8.2.3.1 and 8.2.5.3 (EPA 1999).
Terms are defined in sections 8.2.3.1 and 8.2.5.3 and in the notes to Table C2-2.

Table C2-3, Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Bioaccumulation factors for uptake from ingested plant tissue by mammals and birds ($BAF\text{-}T_p$) was calculated as:
$BAF\text{-}T_p = Ba \times IR_F \times PF \times BW$
Equation 8-11, sections 8.2.3.1 and 8.2.5.3 (EPA 1999).
Terms are defined in Sections 8.2.3.1 and 8.2.5.3 and in the notes to Table C2-3.

Table C2-4, Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Bioaccumulation factors for uptake from ingested water by mammals and birds ($BAF\text{-}T_w$) was calculated as:
$BAF\text{-}T_w = Ba \times IR_W \times BW$
Equation 8-42, sections 8.2.4.1 and 8.2.5.3 (EPA 1999).
Terms are defined in sections 8.2.4.1 and 8.2.5.3 and in the notes to Table C2-4.

Table C2-5, Food Chain Multipliers for Bioaccumulation of Organic COPCs by Mammals and Birds

Food chain multipliers (FCMs) for bioaccumulation of organic COPCs to receptors at different trophic levels (section 8.2.5.3) were developed for aquatic biota by EPA (1995) and are applied in the Risk Assessment Work Plan for terrestrial biota as described by EPA (1999). They are used in sections 8.2.3.1, 8.2.3.3, 8.2.4.1, and 8.2.4.3.

Table C2-6, Dose Conversion Factors, Decay Energies, Absorption Factors, and Radiation Dose Factors for ROPCs

Dose factors (DFs) are factors for ROPCs that convert activities of ROPCs in air, soil, and water to external radiation doses.

Dose factor for external radiation from soil (DF_{soil}):

$DF_{soil} = F_{above} \times F_{ruf} \times DCF \times CFb \times ECF + 1.05 \times F_{below} \times E_{\gamma}n_{\gamma} \times \Phi_{\gamma} \times CFa$

Equation 8-24, section 8.2.3.4 (Sample and others 1997).

Dose factor for external radiation from air (DF_{air}):

$DF_{air} = 3.2 \times 10^{5} \times DCF$

Values of DCF are given in Eckerman and Ryman (1993).

Dose factor for external radiation from immersion in water ($DF_{water,\ imm}$)

$DF_{water,\ imm} = C_{wctot} \times (1-F_s-F_{in}) \times 0.001 \times CFa \times [(1-\Phi_{\beta}) \times E_{\beta}n_{\beta} + (1-\Phi_{\gamma}) \times E_{\gamma}n_{\gamma}]$

(qu[illegible]n 8-55, [illegible]n 8.2.4.4 ([illegible]k,) r[illegible]nk, [illegible]nd 2 '1 e[illegible]1993).

Dose factor for external radiation from sediment ($DF_{sediment}$)

$DF_{sediment} = C_s \times (0.5 \times F_s + F_{in}) \times CFa \times [(1-\Phi_{\beta}) \times E_{\beta}n_{\beta} + (1-\Phi_{\gamma}) \times E_{\gamma}n_{\gamma}]$

(qu[illegible]n 8-56, [illegible]n 8.2.4.4 ([illegible]k,) r[illegible]nk, [illegible]nd 2 '1 e[illegible]1993).

Dose factor for external radiation from proximity to water ($DF_{water,\ prox}$)

$DF_{water,\ prox} = C_{wctot} \times F_{near} \times 0.001 \times CFa \times [(1-\Phi_{\gamma}) \times E_{\gamma}n_{\gamma}]$,

(qu[illegible]n 8-58, [illegible]n 8.2.4.4 ([illegible]k,) r[illegible]nk, [illegible]nd 2 '1 e[illegible]1993).

The DF for internal exposure is:

$DF_{int} = CFa \times (^{n}F \times E_{\alpha}n_{\alpha} \times \Phi_{\alpha} + E_{\beta}n_{\beta} \times \Phi_{\beta} + E_{\gamma}n_{\gamma} \times \Phi_{\gamma})$.

Equation 8-28, sections 8.2.3.4 and 8.2.4.3 (Sample and others 1997). Terms are defined in sections 8.2.3.4 and 8.2.4.4 and in the notes to Table C2-6.

Radiation dose factors (DFs) are ROPC-specific because the decay energy is ROPC-specific and are receptor-specific because the absorption fraction is receptor-specific. The decay energies ($E_{\alpha}n_{\alpha}$, $E_{\beta}n_{\beta}$, and $E_{\gamma}n_{\gamma}$) are the product of the energy of disintegration and the fraction of disintegrations that produce the specific type of radiation (α or β particles) or the photon energy emitted during transition from a higher to a lower energy state (γ radiation) (Eckerman and Ryman 1993), and absorption factors (Φ_{α},Φ_{β}, and Φ_{γ}) are the receptor-specific fraction of the decay energy absorbed by tissue (Blaylock, Frank, and 2 '1 e[illegible]1993; 6[illegible] [illegible]nd [illegible]ther[illegible]1997).

Table C2-7, Dose Conversion Factors, Decay Energies, Absorption Factors, and Radiation Dose Factors for Non-ROPC Daughter Radionuclides in Sediment

Radiation dose factors for non-ROPC daughter radionuclides have the same definitions as the dose factors for ROPCs. k on-ROPC daughter radionuclides are radionuclides that are produced by radioactive decay of ROPCs. They are included in dose assessment for exposure to sediment because they may accumulate in sediment.

Acronyms and Terms used in Appendix C-2

BW	Body weight of receptor (kg).
COPC	Chemical of potential concern.
FCM	Food chain multiplier.
IR_F	Receptor-specific daily ingestion rate of food (kg fresh weight of food/d).
IR_W	Receptor-specific daily ingestion rate of water (L/d).
$\log K_{ow}$	logarithm of the octanol-water partitioning coefficient (L/kg).
$\log K_{oc}$	organic carbon-water partitioning coefficient (L/kg).
PF	Fraction of IR_F that is plant tissue.
QF	Quality factor to adjust radiation dose for relative abilities of α, β, and γ radiation to harm tissue.
ROPC	Radionuclide of potential concern.
SF	Fraction of IR_F equal to the daily soil consumption rate.

Uptake factors are defined on pages C2-iii through C2-v and in the notes to the Appendix C2 tables.

References for Appendix C-2

Project Documents

None

Codes and Standards

None

Other Documents

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Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Organic Compounds							
Aromatic Halogenated Hydrocarbons							
2,3,4,6-Tetrachlorophenol	58-90-2	4.30	2.40	1.26E-01	Equation 1	2.38E+02	Equation 2[b]
4-Chloro-3-methylphenol	59-50-7	3.10	2.57	6.25E-01	Equation 1	2.47E+01	Equation 2[b]
Aromatic Nonhalogenated Hydrocarbons							
2-Nitrotoluene	88-72-2	2.30	2.63	1.81E+00	Equation 1	5.47E+00	Equation 2
4-Nitrobiphenyl	92-93-3	3.77	3.09	2.56E-01	Equation 1	8.74E+01	Equation 2[b]
Benzaldehyde	100-52-7	1.48	1.30	5.42E+00	Equation 1	1.16E+00	Equation 2
Benzene	71-43-2	2.14	1.79	2.25E+00	Equation 1	4.02E+00	Equation 2
Benzyl alcohol	100-51-6	1.10	1.01	8.95E+00	Equation 1	5.69E-01	Equation 2
Ethyl benzene	100-41-4	3.12	2.31	6.06E-01	Equation 1	2.58E+01	Equation 2[b]
m-Xylene	108-38-3	3.20	2.29	5.47E-01	Equation 1	2.99E+01	Equation 2[b]
o-Xylene	95-47-6	3.13	2.38	6.01E-01	Equation 1	2.62E+01	Equation 2[b]
p-Xylene	106-42-3	3.17	2.49	5.70E-01	Equation 1	2.82E+01	Equation 2[b]
Styrene	100-42-5	2.93	2.96	7.85E-01	Equation 1	1.79E+01	Equation 2[b]
Toluene	108-88-3	2.67	2.15	1.11E+00	Equation 1	1.09E+01	Equation 2[b]
Non-aromatic Nonhalogenated Hydrocarbons							
1,2-Epoxybutane	106-88-7	0.86	0.65	1.23E+01	Equation 1	3.62E-01	Equation 2
1,3-Butadiene	106-99-0	1.99	1.64	2.74E+00	Equation 1	3.05E+00	Equation 2
1,4-Dioxane	123-91-1	-0.27	-0.06	5.53E+01	EPA (1999)	4.00E-02	EPA (1999)
1-Methylpropyl alcohol	78-92-2	0.61	0.63	1.72E+01	Equation 1	2.26E-01	Equation 2
1-Nitropropane	108-03-2	0.87	0.83	1.22E+01	Equation 1	3.69E-01	Equation 2
2,2,4-Trimethylpentane	540-84-1	5.02	4.07	4.86E-02	Equation 1	9.23E+02	Equation 2[b]
2-Butanone	78-93-3	0.28	0.37	2.66E+01	Equation 1	1.21E-01	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Organic Compounds							
Aromatic Halogenated Hydrocarbons							
2,3,4,6-Tetrachlorophenol	58-90-2	5.02E-04	Equation 3	2.38E+02	Equation 2	1.26E-01	Equation 1
4-Chloro-3-methylphenol	59-50-7	3.16E-05	Equation 3	2.47E+01	Equation 2	6.25E-01	Equation 1
Aromatic Nonhalogenated Hydrocarbons							
2-Nitrotoluene	88-72-2	5.01E-06	Equation 3	5.47E+00	Equation 2	1.81E+00	Equation 1
4-Nitrobiphenyl	92-93-3	1.48E-04	Equation 3	8.74E+01	Equation 2	2.56E-01	Equation 1
Benzaldehyde	100-52-7	7.54E-07	Equation 3	1.16E+00	Equation 2	5.42E+00	Equation 1
Benzene	71-43-2	3.44E-06	Equation 3	4.02E+00	Equation 2	2.25E+00	Equation 1
Benzyl alcohol	100-51-6	3.16E-07	Equation 3	5.69E-01	Equation 2	8.95E+00	Equation 1
Ethyl benzene	100-41-4	3.34E-05	Equation 3	2.58E+01	Equation 2	6.06E-01	Equation 1
m-Xylene	108-38-3	3.99E-05	Equation 3	2.99E+01	Equation 2	5.47E-01	Equation 1
o-Xylene	95-47-6	3.39E-05	Equation 3	2.62E+01	Equation 2	6.01E-01	Equation 1
p-Xylene	106-42-3	3.72E-05	Equation 3	2.82E+01	Equation 2	5.70E-01	Equation 1
Styrene	100-42-5	2.13E-05	Equation 3	1.79E+01	Equation 2	7.85E-01	Equation 1
Toluene	108-88-3	1.17E-05	Equation 3	1.09E+01	Equation 2	1.11E+00	Equation 1
Non-aromatic Nonhalogenated Hydrocarbons							
1,2-Epoxybutane	106-88-7	1.82E-07	Equation 3	3.62E-01	Equation 2	1.23E+01	Equation 1
1,3-Butadiene	106-99-0	2.45E-06	Equation 3	3.05E+00	Equation 2	2.74E+00	Equation 1
1,4-Dioxane	123-91-1	1.36E-08	Equation 3	4.00E-02	EPA (1999)	5.53E+01	EPA (1999)
1-Methylpropyl alcohol	78-92-2	1.02E-07	Equation 3	2.26E-01	Equation 2	1.72E+01	Equation 1
1-Nitropropane	108-03-2	1.86E-07	Equation 3	3.69E-01	Equation 2	1.22E+01	Equation 1
2,2,4-Trimethylpentane	540-84-1	2.63E-03	Equation 3	9.23E+02	Equation 2	4.86E-02	Equation 1
2-Butanone	78-93-3	4.80E-08	Equation 3	1.21E-01	Equation 2	2.66E+01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Organic Compounds					
Aromatic Halogenated Hydrocarbons					
2,3,4,6-Tetrachlorophenol	58-90-2	1.30E+03	Equation 4	2.38E+02	Equation 2
4-Chloro-3-methylphenol	59-50-7	1.08E+02	Equation 4	2.47E+01	Equation 2
Aromatic Nonhalogenated Hydrocarbons					
2-Nitrotoluene	88-72-2	2.03E+01	Equation 4	5.47E+00	Equation 2
4-Nitrobiphenyl	92-93-3	4.38E+02	Equation 4	8.74E+01	Equation 2
Benzaldehyde	100-52-7	3.62E+00	Equation 4	1.16E+00	Equation 2
Benzene	71-43-2	1.44E+01	Equation 4	4.02E+00	Equation 2
Benzyl alcohol	100-51-6	1.64E+00	Equation 4	5.69E-01	Equation 2
Ethyl benzene	100-41-4	1.14E+02	Equation 4	2.58E+01	Equation 2
m-Xylene	108-38-3	1.34E+02	Equation 4	2.99E+01	Equation 2
o-Xylene	95-47-6	1.15E+02	Equation 4	2.62E+01	Equation 2
p-Xylene	106-42-3	1.25E+02	Equation 4	2.82E+01	Equation 2
Styrene	100-42-5	7.57E+01	Equation 4	1.79E+01	Equation 2
Toluene	108-88-3	4.38E+01	Equation 4	1.09E+01	Equation 2
Non-aromatic Nonhalogenated Hydrocarbons					
1,2-Epoxybutane	106-88-7	9.92E-01	Equation 4	3.62E-01	Equation 2
1,3-Butadiene	106-99-0	1.06E+01	Equation 4	3.05E+00	Equation 2
1,4-Dioxane	123-91-1	9.34E-02	EPA (1999)	4.00E-02	EPA (1999)
1-Methylpropyl alcohol	78-92-2	5.88E-01	Equation 4	2.26E-01	Equation 2
1-Nitropropane	108-03-2	1.01E+00	Equation 4	3.69E-01	Equation 2
2,2,4-Trimethylpentane	540-84-1	5.29E+03	Equation 4	9.23E+02	Equation 2
2-Butanone	78-93-3	2.95E-01	Equation 4	1.21E-01	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
2-Butenaldehyde (2-Butenal)	4170-30-3	0.55	0.58	1.86E+01	EPA (1999)	2.00E-01	EPA (1999)
2-Ethoxyethanol	110-80-5	-0.10	1.32	4.42E+01	Equation 1	5.92E-02	Equation 2
2-Heptanone	110-43-0	1.98	1.70	2.78E+00	Equation 1	2.99E+00	Equation 2
2-Hexanone	591-78-6	1.38	2.13	6.17E+00	Equation 1	9.64E-01	Equation 2
2-Methoxyethanol	109-86-4	-0.77	0.00	1.08E+02	Equation 1	1.67E-02	Equation 2
2-Methyl-2-propanol	75-65-0	0.35	1.57	2.43E+01	Equation 1	1.38E-01	Equation 2
2-Methyl-2-propenenitrile	126-98-7	0.54	0.57	1.89E+01	Equation 1	1.98E-01	Equation 2
2-Methylaziridine	75-55-8	-0.60	-0.32	8.61E+01	Equation 1	2.30E-02	Equation 2
2-Methylpropyl alcohol	78-83-1	0.76	0.74	1.41E+01	Equation 1	3.00E-01	Equation 2
2-Pentanone	107-87-9	0.91	1.87	1.15E+01	Equation 1	3.97E-01	Equation 2
2-Propanone (Acetone)	67-64-1	-0.22	-0.02	5.20E+01	EPA (1999)	5.00E-02	EPA (1999)
2-Propene-1-ol	107-18-6	0.17	0.28	3.09E+01	Equation 1	9.85E-02	Equation 2
2-Propyl alcohol	67-63-0	0.05	0.19	3.62E+01	Equation 1	7.85E-02	Equation 2
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	0.99	1.08	1.04E+01	Equation 1	4.62E-01	Equation 2
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	1.19	1.08	7.94E+00	Equation 1	6.74E-01	Equation 2
4-Methyl-3-penten-2-one	141-79-7	NA	NA	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.72	1.59	3.93E+00	Equation 1	1.83E+00	Equation 2
Acetaldehyde	75-07-0	-0.22	-0.02	5.19E+01	Equation 1	4.72E-02	Equation 2
Acetamide	60-35-5	-1.26	-1.55	2.07E+02	Equation 1	6.64E-03	Equation 2
Acetic acid	64-19-7	-0.17	0.00	4.86E+01	Equation 1	5.19E-02	Equation 2
Acetic acid ethyl ester	141-78-6	0.73	0.36	1.47E+01	Equation 1	2.83E-01	Equation 2
Acetic acid n-butyl ester	123-86-4	1.73	1.50	3.87E+00	Equation 1	1.87E+00	Equation 2
Acetonitrile	75-05-8	-0.34	-0.11	6.09E+01	Equation 1	3.76E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
2-Butenaldehyde (2-Butenal)	4170-30-3	8.91E-08	EPA (1999)	2.00E-01	EPA (1999)	1.86E+01	EPA (1999)
2-Ethoxyethanol	110-80-5	2.00E-08	Equation 3	5.92E-02	Equation 2	4.42E+01	Equation 1
2-Heptanone	110-43-0	2.40E-06	Equation 3	2.99E+00	Equation 2	2.78E+00	Equation 1
2-Hexanone	591-78-6	6.03E-07	Equation 3	9.64E-01	Equation 2	6.17E+00	Equation 1
2-Methoxyethanol	109-86-4	4.27E-09	Equation 3	1.67E-02	Equation 2	1.08E+02	Equation 1
2-Methyl-2-propanol	75-65-0	5.62E-08	Equation 3	1.38E-01	Equation 2	2.43E+01	Equation 1
2-Methyl-2-propenenitrile	126-98-7	8.72E-08	Equation 3	1.98E-01	Equation 2	1.89E+01	Equation 1
2-Methylaziridine	75-55-8	6.31E-09	Equation 3	2.30E-02	Equation 2	8.61E+01	Equation 1
2-Methylpropyl alcohol	78-83-1	1.45E-07	Equation 3	3.00E-01	Equation 2	1.41E+01	Equation 1
2-Pentanone	107-87-9	2.04E-07	Equation 3	3.97E-01	Equation 2	1.15E+01	Equation 1
2-Propanone (Acetone)	67-64-1	1.51E-08	Equation 3	5.00E-02	EPA (1999)	5.20E+01	EPA (1999)
2-Propene-1-ol	107-18-6	3.72E-08	Equation 3	9.85E-02	Equation 2	3.09E+01	Equation 1
2-Propyl alcohol	67-63-0	2.82E-08	Equation 3	7.85E-02	Equation 2	3.62E+01	Equation 1
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	2.45E-07	Equation 3	4.62E-01	Equation 2	1.04E+01	Equation 1
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	3.89E-07	Equation 3	6.74E-01	Equation 2	7.94E+00	Equation 1
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.32E-06	Equation 3	1.83E+00	Equation 2	3.93E+00	Equation 1
Acetaldehyde	75-07-0	1.51E-08	Equation 3	4.72E-02	Equation 2	5.19E+01	Equation 1
Acetamide	60-35-5	1.38E-09	Equation 3	6.64E-03	Equation 2	2.07E+02	Equation 1
Acetic acid	64-19-7	1.70E-08	Equation 3	5.19E-02	Equation 2	4.86E+01	Equation 1
Acetic acid ethyl ester	141-78-6	1.35E-07	Equation 3	2.83E-01	Equation 2	1.47E+01	Equation 1
Acetic acid n-butyl ester	123-86-4	1.35E-06	Equation 3	1.87E+00	Equation 2	3.87E+00	Equation 1
Acetonitrile	75-05-8	1.15E-08	Equation 3	3.76E-02	Equation 2	6.09E+01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
2-Butenaldehyde (2-Butenal)	4170-30-3	5.18E-01	EPA (1999)	2.00E-01	EPA (1999)
2-Ethoxyethanol	110-80-5	1.33E-01	Equation 4	5.92E-02	Equation 2
2-Heptanone	110-43-0	1.04E+01	Equation 4	2.99E+00	Equation 2
2-Hexanone	591-78-6	2.95E+00	Equation 4	9.64E-01	Equation 2
2-Methoxyethanol	109-86-4	3.26E-02	Equation 4	1.67E-02	Equation 2
2-Methyl-2-propanol	75-65-0	3.41E-01	Equation 4	1.38E-01	Equation 2
2-Methyl-2-propenenitrile	126-98-7	5.08E-01	Equation 4	1.98E-01	Equation 2
2-Methylaziridine	75-55-8	4.66E-02	Equation 4	2.30E-02	Equation 2
2-Methylpropyl alcohol	78-83-1	8.05E-01	Equation 4	3.00E-01	Equation 2
2-Pentanone	107-87-9	1.10E+00	Equation 4	3.97E-01	Equation 2
2-Propanone (Acetone)	67-64-1	1.00E-01	EPA (1999)	5.00E-02	EPA (1999)
2-Propene-1-ol	107-18-6	2.34E-01	Equation 4	9.85E-02	Equation 2
2-Propyl alcohol	67-63-0	1.82E-01	Equation 4	7.85E-02	Equation 2
3-Heptanone	106-35-4	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data
3-Pentanone	96-22-0	1.30E+00	Equation 4	4.62E-01	Equation 2
4-Heptanone	123-19-3	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	1.98E+00	Equation 4	6.74E-01	Equation 2
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	6.01E+00	Equation 4	1.83E+00	Equation 2
Acetaldehyde	75-07-0	1.03E-01	Equation 4	4.72E-02	Equation 2
Acetamide	60-35-5	1.17E-02	Equation 4	6.64E-03	Equation 2
Acetic acid	64-19-7	1.15E-01	Equation 4	5.19E-02	Equation 2
Acetic acid ethyl ester	141-78-6	7.56E-01	Equation 4	2.83E-01	Equation 2
Acetic acid n-butyl ester	123-86-4	6.14E+00	Equation 4	1.87E+00	Equation 2
Acetonitrile	75-05-8	8.03E-02	Equation 4	3.76E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Acrolein	107-02-8	-0.01	0.14	3.92E+01	Equation 1	7.03E-02	Equation 2
Acrylonitrile	107-13-1	0.25	0.35	2.78E+01	EPA (1999)	1.10E-01	EPA (1999)
Bis(isopropyl)ether	108-20-3	1.56	2.23	4.86E+00	Equation 1	1.35E+00	Equation 2
Butane	106-97-8	2.89	2.41	8.27E-01	Equation 1	1.66E+01	Equation 2[b]
Carbon disulfide	75-15-0	2.00	1.71	2.70E+00	Equation 1	3.10E+00	Equation 2
Cyanogen	460-19-5	0.07	0.92	3.53E+01	Equation 1	8.15E-02	Equation 2
Cyclohexane	110-82-7	3.44	2.68	3.98E-01	Equation 1	4.69E+01	Equation 2[b]
Cyclohexanone	108-94-1	0.81	0.78	1.32E+01	Equation 1	3.29E-01	Equation 2
Cyclohexene	110-83-8	2.86	2.38	8.61E-01	Equation 1	1.57E+01	Equation 2[b]
Cyclopentane	287-92-3	3.00	2.49	7.14E-01	Equation 1	2.05E+01	Equation 2[b]
Ethyl alcohol	64-17-5	-0.31	-0.09	5.85E+01	Equation 1	3.98E-02	Equation 2
Ethyl ether	60-29-7	0.89	0.85	1.18E+01	Equation 1	3.83E-01	Equation 2
Ethyl methacrylate	97-63-2	1.59	1.39	4.67E+00	Equation 1	1.43E+00	Equation 2
Formaldehyde	50-00-0	0.34	0.42	2.46E+01	EPA (1999)	1.40E-01	EPA (1999)
Formamide	75-12-7	-1.51	-1.03	2.89E+02	Equation 1	4.14E-03	Equation 2
Formic acid	64-18-6	-0.54	-0.27	7.92E+01	Equation 1	2.59E-02	Equation 2
Formic acid, methyl ester	107-31-3	-0.26	-0.05	5.50E+01	Equation 1	4.34E-02	Equation 2
Glycidylaldehyde	765-34-4	-0.12	0.00	4.54E+01	Equation 1	5.70E-02	Equation 2
Methyl acetate	79-20-9	0.46	0.51	2.10E+01	Equation 1	1.70E-01	Equation 2
Methyl alcohol	67-56-1	-0.71	-0.40	9.96E+01	Equation 1	1.87E-02	Equation 2
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	0.79	1.80	1.35E+01	Equation 1	3.17E-01	Equation 2
Methyl tert-butyl ether	1634-04-4	0.94	0.88	1.11E+01	Equation 1	4.21E-01	Equation 2
Methylacetylene	74-99-7	0.94	0.88	1.11E+01	Equation 1	4.21E-01	Equation 2
Methylcyclohexane	108-87-2	4.10	3.35	1.65E-01	Equation 1	1.63E+02	Equation 2[b]
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Acrolein	107-02-8	2.46E-08	Equation 3	7.03E-02	Equation 2	3.92E+01	Equation 1
Acrylonitrile	107-13-1	4.47E-08	Equation 3	1.10E-01	EPA (1999)	2.78E+01	EPA (1999)
Bis(isopropyl)ether	108-20-3	9.12E-07	Equation 3	1.35E+00	Equation 2	4.86E+00	Equation 1
Butane	106-97-8	1.95E-05	Equation 3	1.66E+01	Equation 2	8.27E-01	Equation 1
Carbon disulfide	75-15-0	2.51E-06	Equation 3	3.10E+00	Equation 2	2.70E+00	Equation 1
Cyanogen	460-19-5	2.95E-08	Equation 3	8.15E-02	Equation 2	3.53E+01	Equation 1
Cyclohexane	110-82-7	6.92E-05	Equation 3	4.69E+01	Equation 2	3.98E-01	Equation 1
Cyclohexanone	108-94-1	1.62E-07	Equation 3	3.29E-01	Equation 2	1.32E+01	Equation 1
Cyclohexene	110-83-8	1.82E-05	Equation 3	1.57E+01	Equation 2	8.61E-01	Equation 1
Cyclopentane	287-92-3	2.51E-05	Equation 3	2.05E+01	Equation 2	7.14E-01	Equation 1
Ethyl alcohol	64-17-5	1.23E-08	Equation 3	3.98E-02	Equation 2	5.85E+01	Equation 1
Ethyl ether	60-29-7	1.95E-07	Equation 3	3.83E-01	Equation 2	1.18E+01	Equation 1
Ethyl methacrylate	97-63-2	9.77E-07	Equation 3	1.43E+00	Equation 2	4.67E+00	Equation 1
Formaldehyde	50-00-0	5.56E-08	Equation 3	1.40E-01	EPA (1999)	2.46E+01	EPA (1999)
Formamide	75-12-7	7.76E-10	Equation 3	4.14E-03	Equation 2	2.89E+02	Equation 1
Formic acid	64-18-6	7.28E-09	Equation 3	2.59E-02	Equation 2	7.92E+01	Equation 1
Formic acid, methyl ester	107-31-3	1.37E-08	Equation 3	4.34E-02	Equation 2	5.50E+01	Equation 1
Glycidylaldehyde	765-34-4	1.91E-08	Equation 3	5.70E-02	Equation 2	4.54E+01	Equation 1
Methyl acetate	79-20-9	7.24E-08	Equation 3	1.70E-01	Equation 2	2.10E+01	Equation 1
Methyl alcohol	67-56-1	4.90E-09	Equation 3	1.87E-02	Equation 2	9.96E+01	Equation 1
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	1.55E-07	Equation 3	3.17E-01	Equation 2	1.35E+01	Equation 1
Methyl tert-butyl ether	1634-04-4	2.19E-07	Equation 3	4.21E-01	Equation 2	1.11E+01	Equation 1
Methylacetylene	74-99-7	2.19E-07	Equation 3	4.21E-01	Equation 2	1.11E+01	Equation 1
Methylcyclohexane	108-87-2	3.16E-04	Equation 3	1.63E+02	Equation 2	1.65E-01	Equation 1
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Acrolein	107-02-8	1.61E-01	Equation 4	7.03E-02	Equation 2
Acrylonitrile	107-13-1	4.80E+01	EPA (1999)	1.10E-01	EPA (1999)
Bis(isopropyl)ether	108-20-3	4.30E+00	Equation 4	1.35E+00	Equation 2
Butane	106-97-8	6.97E+01	Equation 4	1.66E+01	Equation 2
Carbon disulfide	75-15-0	1.08E+01	Equation 4	3.10E+00	Equation 2
Cyanogen	460-19-5	1.90E-01	Equation 4	8.15E-02	Equation 2
Cyclohexane	110-82-7	2.20E+02	Equation 4	4.69E+01	Equation 2
Cyclohexanone	108-94-1	8.94E-01	Equation 4	3.29E-01	Equation 2
Cyclohexene	110-83-8	6.55E+01	Equation 4	1.57E+01	Equation 2
Cyclopentane	287-92-3	8.78E+01	Equation 4	2.05E+01	Equation 2
Ethyl alcohol	64-17-5	8.55E-02	Equation 4	3.98E-02	Equation 2
Ethyl ether	60-29-7	1.06E+00	Equation 4	3.83E-01	Equation 2
Ethyl methacrylate	97-63-2	4.58E+00	Equation 4	1.43E+00	Equation 2
Formaldehyde	50-00-0	3.35E-01	EPA (1999)	1.40E-01	EPA (1999)
Formamide	75-12-7	6.92E-03	Equation 4	4.14E-03	Equation 2
Formic acid	64-18-6	5.31E-02	Equation 4	2.59E-02	Equation 2
Formic acid, methyl ester	107-31-3	9.41E-02	Equation 4	4.34E-02	Equation 2
Glycidylaldehyde	765-34-4	1.27E-01	Equation 4	5.70E-02	Equation 2
Methyl acetate	79-20-9	4.29E-01	Equation 4	1.70E-01	Equation 2
Methyl alcohol	67-56-1	3.70E-02	Equation 4	1.87E-02	Equation 2
Methyl isocyanate	624-83-9	No data	No data	No data	No data
Methyl methacrylate	80-62-6	8.57E-01	Equation 4	3.17E-01	Equation 2
Methyl tert-butyl ether	1634-04-4	1.17E+00	Equation 4	4.21E-01	Equation 2
Methylacetylene	74-99-7	1.17E+00	Equation 4	4.21E-01	Equation 2
Methylcyclohexane	108-87-2	8.66E+02	Equation 4	1.63E+02	Equation 2
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
n-Butyl alcohol	71-36-3	0.88	0.84	1.20E+01	Equation 1	3.76E-01	Equation 2
n-Heptane	142-82-5	4.66	3.79	7.84E-02	Equation 1	4.68E+02	Equation 2[b]
n-Hexane	110-54-3	4.11	3.36	1.63E-01	Equation 1	1.66E+02	Equation 2[b]
Nitromethane	75-52-5	-0.35	-0.12	6.17E+01	Equation 1	3.69E-02	Equation 2
n-Nonane	111-84-2	5.65	4.56	2.10E-02	Equation 1	3.03E+03	Equation 2[b]
n-Octane	111-65-9	4.00	3.27	1.89E-01	Equation 1	1.35E+02	Equation 2[b]
n-Pentane	109-66-0	3.21	2.65	5.40E-01	Equation 1	3.04E+01	Equation 2[b]
n-Propionaldehyde	123-38-6	0.59	0.61	1.77E+01	Equation 1	2.17E-01	Equation 2
n-Propyl alcohol	71-23-8	0.25	0.35	2.78E+01	Equation 1	1.14E-01	Equation 2
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	-0.30	-0.08	5.77E+01	Equation 1	4.06E-02	Equation 2
p-Cymene	99-87-6	4.10	3.35	1.65E-01	Equation 1	1.63E+02	Equation 2[b]
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	-0.38	0.12	6.42E+01	Equation 1	3.49E-02	Equation 2
Propionic acid	79-09-4	0.33	0.41	2.50E+01	Equation 1	1.33E-01	Equation 2
Propionitrile	107-12-0	0.16	0.28	3.13E+01	Equation 1	9.66E-02	Equation 2
Propylene glycol monomethyl ether	107-98-2	-0.49	0.00	7.43E+01	Equation 1	2.84E-02	Equation 2
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	1.45	2.03	5.62E+00	Equation 1	1.10E+00	Equation 2
Trimethylamine	75-50-3	0.16	0.60	3.13E+01	Equation 1	9.66E-02	Equation 2
Vinyl acetate	108-05-4	0.70	0.70	1.53E+01	Equation 1	2.67E-01	Equation 2
Non-aromatic Halogenated Hydrocarbons							
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	3.41	2.54	4.14E-01	Equation 1	4.43E+01	Equation 2[b]
1,1,1,2-Tetrachloroethane	630-20-6	2.63	2.20	1.17E+00	Equation 1	1.02E+01	Equation 2[b]
1,1,1-Trichloroethane	71-55-6	2.42	5.13	1.54E+00	Equation 1	6.88E+00	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
n-Butyl alcohol	71-36-3	1.91E-07	Equation 3	3.76E-01	Equation 2	1.20E+01	Equation 1
n-Heptane	142-82-5	1.15E-03	Equation 3	4.68E+02	Equation 2	7.84E-02	Equation 1
n-Hexane	110-54-3	3.24E-04	Equation 3	1.66E+02	Equation 2	1.63E-01	Equation 1
Nitromethane	75-52-5	1.12E-08	Equation 3	3.69E-02	Equation 2	6.17E+01	Equation 1
n-Nonane	111-84-2	1.12E-02	Equation 3	3.03E+03	Equation 2	2.10E-02	Equation 1
n-Octane	111-65-9	2.51E-04	Equation 3	1.35E+02	Equation 2	1.89E-01	Equation 1
n-Pentane	109-66-0	4.07E-05	Equation 3	3.04E+01	Equation 2	5.40E-01	Equation 1
n-Propionaldehyde	123-38-6	9.77E-08	Equation 3	2.17E-01	Equation 2	1.77E+01	Equation 1
n-Propyl alcohol	71-23-8	4.47E-08	Equation 3	1.14E-01	Equation 2	2.78E+01	Equation 1
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	1.26E-08	Equation 3	4.06E-02	Equation 2	5.77E+01	Equation 1
p-Cymene	99-87-6	3.16E-04	Equation 3	1.63E+02	Equation 2	1.65E-01	Equation 1
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	1.05E-08	Equation 3	3.49E-02	Equation 2	6.42E+01	Equation 1
Propionic acid	79-09-4	5.37E-08	Equation 3	1.33E-01	Equation 2	2.50E+01	Equation 1
Propionitrile	107-12-0	3.63E-08	Equation 3	9.66E-02	Equation 2	3.13E+01	Equation 1
Propylene glycol monomethyl ether	107-98-2	8.13E-09	Equation 3	2.84E-02	Equation 2	7.43E+01	Equation 1
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	7.08E-07	Equation 3	1.10E+00	Equation 2	5.62E+00	Equation 1
Trimethylamine	75-50-3	3.63E-08	Equation 3	9.66E-02	Equation 2	3.13E+01	Equation 1
Vinyl acetate	108-05-4	1.26E-07	Equation 3	2.67E-01	Equation 2	1.53E+01	Equation 1
Non-aromatic Halogenated Hydrocarbons							
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	6.46E-05	Equation 3	4.43E+01	Equation 2[b]	4.14E-01	Equation 1
1,1,1,2-Tetrachloroethane	630-20-6	1.07E-05	Equation 3	1.02E+01	Equation 2	1.17E+00	Equation 1
1,1,1-Trichloroethane	71-55-6	6.63E-06	Equation 3	6.88E+00	Equation 2	1.54E+00	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
n-Butyl alcohol	71-36-3	1.03E+00	Equation 4	3.76E-01	Equation 2
n-Heptane	142-82-5	2.68E+03	Equation 4	4.68E+02	Equation 2
n-Hexane	110-54-3	8.84E+02	Equation 4	1.66E+02	Equation 2
Nitromethane	75-52-5	7.86E-02	Equation 4	3.69E-02	Equation 2
n-Nonane	111-84-2	1.34E+04	Equation 4	3.03E+03	Equation 2
n-Octane	111-65-9	7.05E+02	Equation 4	1.35E+02	Equation 2
n-Pentane	109-66-0	1.36E+02	Equation 4	3.04E+01	Equation 2
n-Propionaldehyde	123-38-6	5.64E-01	Equation 4	2.17E-01	Equation 2
n-Propyl alcohol	71-23-8	2.76E-01	Equation 4	1.14E-01	Equation 2
n-Valeraldehyde	110-62-3	No data	No data	No data	No data
Oxirane	75-21-8	8.73E-02	Equation 4	4.06E-02	Equation 2
p-Cymene	99-87-6	8.66E+02	Equation 4	1.63E+02	Equation 2
Phosgene	75-44-5	No data	No data	No data	No data
Propargyl alcohol	107-19-7	7.38E-02	Equation 4	3.49E-02	Equation 2
Propionic acid	79-09-4	3.27E-01	Equation 4	1.33E-01	Equation 2
Propionitrile	107-12-0	2.29E-01	Equation 4	9.66E-02	Equation 2
Propylene glycol monomethyl ether	107-98-2	5.86E-02	Equation 4	2.84E-02	Equation 2
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data
Triethylamine	121-44-8	3.42E+00	Equation 4	1.10E+00	Equation 2
Trimethylamine	75-50-3	2.29E-01	Equation 4	9.66E-02	Equation 2
Vinyl acetate	108-05-4	7.08E-01	Equation 4	2.67E-01	Equation 2
Non-aromatic Halogenated Hydrocarbons					
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	2.07E+02	Equation 4	4.43E+01	Equation 2[b]
1,1,1,2-Tetrachloroethane	630-20-6	4.05E+01	Equation 4	1.02E+01	Equation 2
1,1,1-Trichloroethane	71-55-6	2.62E+01	Equation 4	6.88E+00	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	3.73	2.50	2.70E-01	Equation 1	8.11E+01	Equation 2
1,1,2,2-Tetrachloroethane	79-34-5	4.64	1.90	8.02E-02	Equation 1	4.54E+02	Equation 2[b]
1,1,2,2-Tetrachloroethene	127-18-4	2.55	2.42	1.31E+00	Equation 1	8.68E+00	Equation 2
1,1,2-Trichloroethane	79-00-5	2.10	1.88	2.38E+00	Equation 1	3.73E+00	Equation 2
1,1,2-Trichloroethylene	79-01-6	2.43	1.97	1.52E+00	Equation 1	7.02E+00	Equation 2
1,1-Dichloroethane	75-34-3	1.79	1.72	3.56E+00	Equation 1	2.10E+00	Equation 2
1,1-Dichloroethene	75-35-4	2.12	1.81	2.30E+00	Equation 1	3.90E+00	Equation 2
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.16	2.41	5.77E-01	Equation 1	2.77E+01	Equation 2[b]
1,2,3-Trichloropropane	96-18-4	2.25	1.91	1.94E+00	Equation 1	4.98E+00	Equation 2
1,2-Dibromo-3-chloropropane	96-12-8	2.34	1.98	1.72E+00	Equation 1	5.90E+00	Equation 2
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	2.82	2.35	9.08E-01	Equation 1	1.46E+01	Equation 2[b]
1,2-Dichloroethane	107-06-2	1.46	1.29	5.53E+00	Equation 1	1.13E+00	Equation 2
1,2-Dichloroethylene	540-59-0	2.09	1.64	2.40E+00	Equation 1	3.68E+00	Equation 2
1,2-Dichloropropane	78-87-5	2.25	1.67	1.94E+00	Equation 1	4.98E+00	Equation 2
1,3-Dichloropropene	542-75-6	1.75	1.43	3.78E+00	Equation 1	1.93E+00	Equation 2
1,4-Dichloro-2-butene	764-41-0	2.60	2.17	1.21E+01	Equation 1	3.70E-01	Equation 2
1-Chloroethene	75-01-4	1.15	1.05	8.43E+00	EPA (1999)	6.20E-01	EPA (1999)
2,2-Dichloropropionic acid	75-99-0	1.68	0.44	4.14E+00	Equation 1	1.70E+00	Equation 2
2-Chloropropane	75-29-6	1.90	1.63	3.09E+00	Equation 1	2.57E+00	Equation 2
3-Chloropropene (Allyl chloride)	107-05-1	1.93	1.64	2.97E+00	Equation 1	2.72E+00	Equation 2
Bromochloromethane	74-97-5	1.41	1.25	5.93E+00	Equation 1	1.02E+00	Equation 2
Bromodichloromethane	75-27-4	2.03	1.73	2.61E+00	Equation 1	3.26E+00	Equation 2
Bromoethene	593-60-2	1.57	1.38	9.37E+00	Equation 1	5.34E-01	Equation 2
Bromoform	75-25-2	2.35	2.10	1.70E+00	Equation 1	6.01E+00	Equation 2
Bromomethane	74-83-9	1.11	0.95	8.79E+00	Equation 1	5.84E-01	Equation 2
Carbon tetrachloride	56-23-5	2.72	2.18	1.04E+00	EPA (1999)	1.20E+01	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	1.35E-04	Equation 3	8.11E+01	Equation 2	2.70E-01	Equation 1
1,1,2,2-Tetrachloroethane	79-34-5	1.11E-03	Equation 3	4.54E+02	Equation 2	8.02E-02	Equation 1
1,1,2,2-Tetrachloroethene	127-18-4	8.82E-06	Equation 3	8.68E+00	Equation 2	1.31E+00	Equation 1
1,1,2-Trichloroethane	79-00-5	3.14E-06	Equation 3	3.73E+00	Equation 2	2.38E+00	Equation 1
1,1,2-Trichloroethylene	79-01-6	6.81E-06	Equation 3	7.02E+00	Equation 2	1.52E+00	Equation 1
1,1-Dichloroethane	75-34-3	1.56E-06	Equation 3	2.10E+00	Equation 2	3.56E+00	Equation 1
1,1-Dichloroethene	75-35-4	3.32E-06	Equation 3	3.90E+00	Equation 2	2.30E+00	Equation 1
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.63E-05	Equation 3	2.77E+01	Equation 2	5.77E-01	Equation 1
1,2,3-Trichloropropane	96-18-4	4.47E-06	Equation 3	4.98E+00	Equation 2	1.94E+00	Equation 1
1,2-Dibromo-3-chloropropane	96-12-8	5.50E-06	Equation 3	5.90E+00	Equation 2	1.72E+00	Equation 1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	1.66E-05	Equation 3	1.46E+01	Equation 2	9.08E-01	Equation 1
1,2-Dichloroethane	107-06-2	7.28E-07	Equation 3	1.13E+00	Equation 2	5.53E+00	Equation 1
1,2-Dichloroethylene	540-59-0	3.09E-06	Equation 3	3.68E+00	Equation 2	2.40E+00	Equation 1
1,2-Dichloropropane	78-87-5	4.47E-06	Equation 3	4.98E+00	Equation 2	1.94E+00	Equation 1
1,3-Dichloropropene	542-75-6	1.41E-06	Equation 3	1.93E+00	Equation 2	3.78E+00	Equation 1
1,4-Dichloro-2-butene	764-41-0	1.87E-07	Equation 3	3.70E-01	Equation 2	1.21E+01	Equation 1
1-Chloroethene	75-01-4	3.52E-07	Equation 3	6.20E-01	EPA (1999)	8.43E+00	EPA (1999)
2,2-Dichloropropionic acid	75-99-0	1.20E-06	Equation 3	1.70E+00	Equation 2	4.14E+00	Equation 1
2-Chloropropane	75-29-6	2.00E-06	Equation 3	2.57E+00	Equation 2	3.09E+00	Equation 1
3-Chloropropene (Allyl chloride)	107-05-1	2.14E-06	Equation 3	2.72E+00	Equation 2	2.97E+00	Equation 1
Bromochloromethane	74-97-5	6.46E-07	Equation 3	1.02E+00	Equation 2	5.93E+00	Equation 1
Bromodichloromethane	75-27-4	2.66E-06	Equation 3	3.26E+00	Equation 2	2.61E+00	Equation 1
Bromoethene	593-60-2	2.93E-07	Equation 3	5.34E-01	Equation 2	9.37E+00	Equation 1
Bromoform	75-25-2	5.63E-06	Equation 3	6.01E+00	Equation 2	1.70E+00	Equation 1
Bromomethane	74-83-9	3.27E-07	Equation 3	5.84E-01	Equation 2	8.79E+00	Equation 1
Carbon tetrachloride	56-23-5	1.31E-05	Equation 3	3.00E+02	EPA (1999)	1.04E+00	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	4.03E+02	Equation 4	8.11E+01	Equation 2
1,1,2,2-Tetrachloroethane	79-34-5	2.60E+03	Equation 4	4.54E+02	Equation 2
1,1,2,2-Tetrachloroethene	127-18-4	3.39E+01	Equation 4	8.68E+00	Equation 2
1,1,2-Trichloroethane	79-00-5	1.32E+01	Equation 4	3.73E+00	Equation 2
1,1,2-Trichloroethylene	79-01-6	2.68E+01	Equation 4	7.02E+00	Equation 2
1,1-Dichloroethane	75-34-3	7.00E+00	Equation 4	2.10E+00	Equation 2
1,1-Dichloroethene	75-35-4	1.39E+01	Equation 4	3.90E+00	Equation 2
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	1.23E+02	Equation 4	2.77E+01	Equation 2
1,2,3-Trichloropropane	96-18-4	1.83E+01	Equation 4	4.98E+00	Equation 2
1,2-Dibromo-3-chloropropane	96-12-8	2.21E+01	Equation 4	5.90E+00	Equation 2
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	6.02E+01	Equation 4	1.46E+01	Equation 2
1,2-Dichloroethane	107-06-2	3.51E+00	Equation 4	1.13E+00	Equation 2
1,2-Dichloroethylene	540-59-0	1.31E+01	Equation 4	3.68E+00	Equation 2
1,2-Dichloropropane	78-87-5	1.83E+01	Equation 4	4.98E+00	Equation 2
1,3-Dichloropropene	542-75-6	6.38E+00	Equation 4	1.93E+00	Equation 2
1,4-Dichloro-2-butene	764-41-0	1.02E+00	Equation 4	3.70E-01	Equation 2
1-Chloroethene	75-01-4	1.81E+00	EPA (1999)	6.20E-01	EPA (1999)
2,2-Dichloropropionic acid	75-99-0	5.53E+00	Equation 4	1.70E+00	Equation 2
2-Chloropropane	75-29-6	8.77E+00	Equation 4	2.57E+00	Equation 2
3-Chloropropene (Allyl chloride)	107-05-1	9.34E+00	Equation 4	2.72E+00	Equation 2
Bromochloromethane	74-97-5	3.14E+00	Equation 4	1.02E+00	Equation 2
Bromodichloromethane	75-27-4	1.14E+01	Equation 4	3.26E+00	Equation 2
Bromoethene	593-60-2	1.53E+00	Equation 4	5.34E-01	Equation 2
Bromoform	75-25-2	2.25E+01	Equation 4	6.01E+00	Equation 2
Bromomethane	74-83-9	1.69E+00	Equation 4	5.84E-01	Equation 2
Carbon tetrachloride	56-23-5	3.00E+01	EPA (1999)	1.20E+01	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Chlorodibromomethane	124-48-1	2.18	1.85	2.14E+00	Equation 1	4.33E+00	Equation 2
Chlorodifluoromethane	75-45-6	1.08	0.99	9.21E+00	Equation 1	5.47E-01	Equation 2
Chloroethane	75-00-3	3.10	2.57	6.25E-01	Equation 1	2.47E+01	Equation 2[b]
Chloroform	67-66-3	1.95	1.72	2.90E+00	EPA (1999)	2.82E+00	EPA (1999)
Chloromethane	74-87-3	0.90	0.78	1.16E+01	Equation 1	3.92E-01	Equation 2
Chloropentafluoroethane	76-15-3	2.10	2.85	2.37E+00	Equation 1	3.75E+00	Equation 2
cis-1,2-Dichloroethene	156-59-2	1.98	1.70	2.77E+00	Equation 1	3.00E+00	Equation 2
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	-0.29	-0.08	5.70E+01	Equation 1	4.14E-02	Equation 2
Cyanogen chloride	506-77-4	-0.38	0.65	6.42E+01	Equation 1	3.49E-02	Equation 2
Dichlorodifluoromethane	75-71-8	2.16	0.84	2.19E+00	Equation 1	4.19E+00	Equation 2
Dichlorofluoromethane	75-43-4	1.55	1.54	4.92E+00	Equation 1	1.33E+00	Equation 2
Dichloromethane	75-09-2	1.26	1.00	7.29E+00	Equation 1	7.62E-01	Equation 2
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.69	1.47	4.08E+00	Equation 1	1.73E+00	Equation 2
Methylene bromide	74-95-3	1.62	1.41	4.48E+00	Equation 1	1.52E+00	Equation 2
Pentachloroethane	76-01-7	3.05	2.53	6.68E-01	Equation 1	2.25E+01	Equation 2[b]
trans-1,2-Dichloroethylene	156-60-5	1.98	1.58	2.77E+00	Equation 1	3.00E+00	Equation 2
trans-1,3-Dichloropropene	10061-02-6	2.06	1.76	2.50E+00	Equation 1	3.48E+00	Equation 2
Trichloroacetic acid	76-03-9	1.33	1.19	6.60E+00	Equation 1	8.78E-01	Equation 2
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	2.53	2.13	1.33E+00	Equation 1	8.46E+00	Equation 2
Trifluorobromomethane	75-63-8	1.86	1.60	3.26E+00	Equation 1	2.38E+00	Equation 2
Dioxin and Furan Compounds (PCDDs/PCDFs)							
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	8.20	7.99	2.90E-04	EPA (1999)	8.10E-02	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Chlorodibromomethane	124-48-1	3.77E-06	Equation 3	4.33E+00	Equation 2	2.14E+00	Equation 1
Chlorodifluoromethane	75-45-6	3.01E-07	Equation 3	5.47E-01	Equation 2	9.21E+00	Equation 1
Chloroethane	75-00-3	3.16E-05	Equation 3	2.47E+01	Equation 2	6.25E-01	Equation 1
Chloroform	67-66-3	2.24E-06	Equation 3	2.82E+00	EPA (1999)	2.90E+00	EPA (1999)
Chloromethane	74-87-3	2.01E-07	Equation 3	3.92E-01	Equation 2	1.16E+01	Equation 1
Chloropentafluoroethane	76-15-3	3.16E-06	Equation 3	3.75E+00	Equation 2	2.37E+00	Equation 1
cis-1,2-Dichloroethene	156-59-2	2.41E-06	Equation 3	3.00E+00	Equation 2	2.77E+00	Equation 1
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	1.29E-08	Equation 3	4.14E-02	Equation 2	5.70E+01	Equation 1
Cyanogen chloride	506-77-4	1.05E-08	Equation 3	3.49E-02	Equation 2	6.42E+01	Equation 1
Dichlorodifluoromethane	75-71-8	3.62E-06	Equation 3	4.19E+00	Equation 2	2.19E+00	Equation 1
Dichlorofluoromethane	75-43-4	8.91E-07	Equation 3	1.33E+00	Equation 2	4.92E+00	Equation 1
Dichloromethane	75-09-2	4.52E-07	Equation 3	7.62E-01	Equation 2	7.29E+00	Equation 1
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.23E-06	Equation 3	1.73E+00	Equation 2	4.08E+00	Equation 1
Methylene bromide	74-95-3	1.05E-06	Equation 3	1.52E+00	Equation 2	4.48E+00	Equation 1
Pentachloroethane	76-01-7	2.82E-05	Equation 3	2.25E+01	Equation 2	6.68E-01	Equation 1
trans-1,2-Dichloroethylene	156-60-5	2.41E-06	Equation 3	3.00E+00	Equation 2	2.77E+00	Equation 1
trans-1,3-Dichloropropene	10061-02-6	2.88E-06	Equation 3	3.48E+00	Equation 2	2.50E+00	Equation 1
Trichloroacetic acid	76-03-9	5.37E-07	Equation 3	8.78E-01	Equation 2	6.60E+00	Equation 1
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	8.54E-06	Equation 3	8.46E+00	Equation 2	1.33E+00	Equation 1
Trifluorobromomethane	75-63-8	1.82E-06	Equation 3	2.38E+00	Equation 2	3.26E+00	Equation 1
Dioxin and Furan Compounds (PCDDs/PCDFs)							
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	2.77E-03	TCDD x BEF	1.68E+02	EPA (1999)	2.90E-04	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Chlorodibromomethane	124-48-1	1.56E+01	Equation 4	4.33E+00	Equation 2
Chlorodifluoromethane	75-45-6	1.57E+00	Equation 4	5.47E-01	Equation 2
Chloroethane	75-00-3	1.08E+02	Equation 4	2.47E+01	Equation 2
Chloroform	67-66-3	3.59E+00	EPA (1999)	2.82E+00	EPA (1999)
Chloromethane	74-87-3	1.09E+00	Equation 4	3.92E-01	Equation 2
Chloropentafluoroethane	76-15-3	1.33E+01	Equation 4	3.75E+00	Equation 2
cis-1,2-Dichloroethene	156-59-2	1.04E+01	Equation 4	3.00E+00	Equation 2
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data
Cyanogen bromide	506-68-3	8.91E-02	Equation 4	4.14E-02	Equation 2
Cyanogen chloride	506-77-4	7.38E-02	Equation 4	3.49E-02	Equation 2
Dichlorodifluoromethane	75-71-8	1.51E+01	Equation 4	4.19E+00	Equation 2
Dichlorofluoromethane	75-43-4	4.21E+00	Equation 4	1.33E+00	Equation 2
Dichloromethane	75-09-2	2.27E+00	Equation 4	7.62E-01	Equation 2
Difluorodibromomethane	75-61-6	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data
Iodomethane	74-88-4	5.65E+00	Equation 4	1.73E+00	Equation 2
Methylene bromide	74-95-3	4.88E+00	Equation 4	1.52E+00	Equation 2
Pentachloroethane	76-01-7	9.75E+01	Equation 4	2.25E+01	Equation 2
trans-1,2-Dichloroethylene	156-60-5	1.04E+01	Equation 4	3.00E+00	Equation 2
trans-1,3-Dichloropropene	10061-02-6	1.23E+01	Equation 4	3.48E+00	Equation 2
Trichloroacetic acid	76-03-9	2.66E+00	Equation 4	8.78E-01	Equation 2
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	3.29E+01	Equation 4	8.46E+00	Equation 2
Trifluorobromomethane	75-63-8	8.06E+00	Equation 4	2.38E+00	Equation 2
Dioxin and Furan Compounds (PCDDs/PCDFs)					
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	2.16E+02	EPA (1999)	9.94E+01	EPA (1999)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.92	7.71	6.20E-05	EPA (1999)	1.70E-02	EPA (1999)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	7.92	7.71	2.20E-03	EPA (1999)	6.20E-01	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	7.79	7.58	1.70E-03	EPA (1999)	4.90E-01	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	7.25	7.04	4.30E-04	EPA (1999)	1.21E-01	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	7.25	7.04	6.70E-04	EPA (1999)	1.90E-01	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	7.25	7.04	1.10E-03	EPA (1999)	3.00E-01	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.25	7.04	7.80E-04	EPA (1999)	2.20E-01	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	7.25	7.04	3.50E-03	EPA (1999)	1.00E+00	EPA (1999)
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	6.64	6.43	5.20E-03	EPA (1999)	1.46E+00	EPA (1999)
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	6.79	6.58	1.10E-03	EPA (1999)	3.20E-01	EPA (1999)
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	7.25	7.04	3.80E-03	EPA (1999)	1.07E+00	EPA (1999)
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.92	6.71	9.00E-03	EPA (1999)	2.54E+00	EPA (1999)
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	6.64	6.43	5.60E-03	EPA (1999)	1.59E+00	EPA (1999)
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	6.53	6.32	4.50E-03	EPA (1999)	1.27E+00	EPA (1999)
Dibenzofuran	132-64-9	4.33	4.12	1.22E-01	Equation 1	2.51E+02	Equation 2[b]
Octachlorodibenzo(p)dioxin	3268-87-9	7.59	7.38	6.70E-05	EPA (1999)	1.90E-02	EPA (1999)
Octachlorodibenzofuran	39001-02-0	8.78	8.57	9.00E-05	EPA (1999)	2.50E-02	EPA (1999)
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)							
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	7.08	6.85	3.13E-03	Equation 1	4.88E+03	Mass-limited
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	7.12	6.92	2.97E-03	Equation 1	4.88E+03	Mass-limited
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	5.98E-04	TCDD x BEF	3.63E+01	EPA (1999)	6.20E-05	EPA (1999)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	2.12E-02	TCDD x BEF	1.29E+03	EPA (1999)	2.20E-03	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	1.68E-02	TCDD x BEF	1.02E+03	EPA (1999)	1.70E-03	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	4.13E-03	TCDD x BEF	2.51E+02	EPA (1999)	4.30E-04	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	6.52E-03	TCDD x BEF	3.96E+02	EPA (1999)	6.70E-04	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.03E-02	TCDD x BEF	6.27E+02	EPA (1999)	1.10E-03	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.61E-03	TCDD x BEF	4.62E+02	EPA (1999)	7.80E-04	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	3.42E-02	TCDD x BEF	2.08E+03	EPA (1999)	3.50E-03	EPA (1999)
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	5.00E-02	TCDD x BEF	3.04E+03	EPA (1999)	5.20E-03	EPA (1999)
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1.20E-02	TCDD x BEF	7.26E+02	EPA (1999)	1.10E-03	EPA (1999)
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	3.64E-02	TCDD x BEF	2.21E+03	EPA (1999)	3.80E-03	EPA (1999)
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	8.70E-02	TCDD x BEF	5.28E+03	EPA (1999)	9.00E-03	EPA (1999)
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	5.43E-02	EPA (1999)	3.30E+03	EPA (1999)	5.60E-03	EPA (1999)
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	4.34E-02	TCDD x BEF	2.64E+03	EPA (1999)	4.50E-03	EPA (1999)
Dibenzofuran	132-64-9	5.37E-04	Equation 3	2.51E+02	Equation 2	1.22E-01	Equation 1
Octachlorodibenzo(p)dioxin	3268-87-9	6.52E-04	TCDD x BEF	3.96E+01	EPA (1999)	6.70E-05	EPA (1999)
Octachlorodibenzofuran	39001-02-0	8.70E-04	TCDD x BEF	5.28E+01	EPA (1999)	9.00E-05	EPA (1999)
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)							
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	3.02E-01	Equation 3	4.49E+04	Equation 2	3.13E-03	Equation 1
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	3.31E-01	Equation 3	4.84E+04	Equation 2	2.97E-03	Equation 1
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	4.66E+01	EPA (1999)	2.16E+02	EPA (1999)
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	1.65E+03	EPA (1999)	7.64E+03	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	1.31E+03	EPA (1999)	6.08E+03	EPA (1999)
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	3.22E+02	EPA (1999)	1.49E+03	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	5.08E+02	EPA (1999)	2.35E+03	EPA (1999)
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	8.05E+02	EPA (1999)	3.72E+03	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	5.93E+02	EPA (1999)	2.74E+03	EPA (1999)
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	2.67E+03	EPA (1999)	1.23E+04	EPA (1999)
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	3.90E+03	EPA (1999)	1.80E+04	EPA (1999)
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	9.32E+02	EPA (1999)	4.31E+03	EPA (1999)
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	2.84E+03	EPA (1999)	1.31E+04	EPA (1999)
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.78E+03	EPA (1999)	3.14E+04	EPA (1999)
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	4.24E+03	EPA (1999)	1.96E+04	EPA (1999)
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	3.39E+03	EPA (1999)	2.64E+03	EPA (1999)
Dibenzofuran	132-64-9	1.39E+03	Equation 4	2.51E+02	Equation 2
Octachlorodibenzo(p)dioxin	3268-87-9	5.08E+01	EPA (1999)	2.35E+01	EPA (1999)
Octachlorodibenzofuran	39001-02-0	6.78E+01	EPA (1999)	3.14E+02	EPA (1999)
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)					
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	5.70E+03	Equation 4	4.49E+04	Equation 2
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	5.26E+03	Equation 4	4.84E+04	Equation 2
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	7.12	7.00	2.97E-03	Equation 1	4.88E+03	Mass-limited
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	7.41	6.60	2.02E-03	Equation 1	4.88E+03	Mass-limited
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[c]	1336-36-3	6.29	4.65	8.96E-03	Equation 1	1.13E+00	EPA (1999)
	Phthalates						
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	5.20	5.05	3.80E-02	EPA (1999)	1.31E+03	EPA (1999)
Butylbenzyl phthalate	85-68-7	4.41	4.14	1.09E-01	Equation 1	2.94E+02	Equation 2[b]
Dibutyl phthalate	84-74-2	4.72	3.20	7.24E-02	Equation 1	5.25E+02	Equation 2[b]
Diethyl phthalate	84-66-2	4.44	1.91	1.06E-01	Equation 1	3.07E+02	Equation 2[b]
Dimethyl phthalate	131-11-3	1.63	1.49	4.40E+00	Equation 1	1.56E+00	Equation 2
n-Dioctyl phthalate	117-84-0	9.33	8.96	1.57E-04	EPA (1999)	4.88E+03	Mass-limited
	Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)						
2-Chloronaphthalene	91-58-7	4.07	3.85	1.72E-01	Equation 1	1.53E+02	Equation 2[b]
2-Methyl naphthalene	91-57-6	3.86	3.65	2.27E-01	Equation 1	1.04E+02	Equation 2[b]
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	3.96	3.69	1.98E-01	Equation 1	1.26E+02	Equation 2[b]
Acenaphthylene	208-96-8	4.07	3.83	1.72E-01	Equation 1	1.54E+02	Equation 2[b]
Anthracene	120-12-7	4.47	4.37	1.01E-01	Equation 1	3.27E+02	Equation 2[b]
Fluorene	86-73-7	4.17	3.89	1.51E-01	Equation 1	1.86E+02	Equation 2[b]
Indene	95-13-6	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	3.37	3.08	4.35E-01	Equation 1	4.13E+01	Equation 2[b]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	3.31E-01	Equation 3	4.84E+04	Equation 2	2.97E-03	Equation 1
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	6.43E-01	Equation 3	8.34E+04	Equation 2	2.02E-03	Equation 1
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[c]	1336-36-3	4.90E-02	Equation 3	1.13E+00	EPA (1999)	8.96E-03	Equation 1
Phthalates							
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	4.02E-03	Equation 3	9.93E+03	EPA (1999)	3.80E-02	EPA (1999)
Butylbenzyl phthalate	85-68-7	6.51E-04	Equation 3	2.94E+02	Equation 2	1.09E-01	Equation 1
Dibutyl phthalate	84-74-2	1.32E-03	Equation 3	5.25E+02	Equation 2	7.24E-02	Equation 1
Diethyl phthalate	84-66-2	6.86E-04	Equation 3	3.07E+02	Equation 2	1.06E-01	Equation 1
Dimethyl phthalate	131-11-3	1.08E-06	Equation 3	1.56E+00	Equation 2	4.40E+00	Equation 1
n-Dioctyl phthalate	117-84-0	5.37E+01	Equation 3	2.85E+04	EPA (1999)	1.57E-04	EPA (1999)
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)							
2-Chloronaphthalene	91-58-7	2.94E-04	Equation 3	1.53E+02	Equation 2	1.72E-01	Equation 1
2-Methyl naphthalene	91-57-6	1.82E-04	Equation 3	1.04E+02	Equation 2	2.27E-01	Equation 1
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	2.32E-04	Equation 3	1.26E+02	Equation 2	1.98E-01	Equation 1
Acenaphthylene	208-96-8	2.95E-04	Equation 3	1.54E+02	Equation 2	1.72E-01	Equation 1
Anthracene	120-12-7	7.41E-04	Equation 3	3.27E+02	Equation 2	1.01E-01	Equation 1
Fluorene	86-73-7	3.72E-04	Equation 3	1.86E+02	Equation 2	1.51E-01	Equation 1
Indene	95-13-6	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	5.93E-05	Equation 3	4.13E+01	Equation 2	4.35E-01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	5.26E+03	Equation 4	4.84E+04	Equation 2
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	2.87E+03	Equation 4	8.34E+04	Equation 2
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[c]	1336-36-3	1.64E+04	Equation 4	1.13E+00	EPA (1999)
Phthalates					
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	7.00E+01	EPA (1999)	1.31E+03	EPA (1999)
Butylbenzyl phthalate	85-68-7	1.64E+03	Equation 4	2.94E+02	Equation 2
Dibutyl phthalate	84-74-2	3.01E+03	Equation 4	5.25E+02	Equation 2
Diethyl phthalate	84-66-2	1.72E+03	Equation 4	3.07E+02	Equation 2
Dimethyl phthalate	131-11-3	5.02E+00	Equation 4	1.56E+00	Equation 2
n-Dioctyl phthalate	117-84-0	9.40E+03	EPA (1999)	3.13E+06	EPA (1999)
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)					
2-Chloronaphthalene	91-58-7	8.11E+02	Equation 4	1.53E+02	Equation 2
2-Methyl naphthalene	91-57-6	5.28E+02	Equation 4	1.04E+02	Equation 2
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data
Acenaphthene	83-32-9	6.55E+02	Equation 4	1.26E+02	Equation 2
Acenaphthylene	208-96-8	8.14E+02	Equation 4	1.54E+02	Equation 2
Anthracene	120-12-7	1.84E+03	Equation 4	3.27E+02	Equation 2
Fluorene	86-73-7	1.00E+03	Equation 4	1.86E+02	Equation 2
Indene	95-13-6	No data	No data	No data	No data
Naphthalene	91-20-3	1.91E+02	Equation 4	4.13E+01	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Phenanthrene	85-01-8	4.55	4.32	9.08E-02	Equation 1	3.81E+02	Equation 2[b]
Pyrene	129-00-0	5.00	4.83	4.99E-02	Equation 1	8.89E+02	Equation 2[b]
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)							
3-Methylcholanthrene	56-49-5	7.11	6.18	3.01E-03	Equation 1	4.88E+03	Mass-limited
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	5.68	5.41	2.02E-02	EPA (1999)	3.00E-02	EPA (1999)
Benzo[a]pyrene	50-32-8	6.13	5.99	1.11E-02	EPA (1999)	7.00E-02	EPA (1999)
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	6.20	5.92	1.01E-02	EPA (1999)	7.00E-02	EPA (1999)
Benzo[e]pyrene	192-97-2	7.40	7.20	2.05E-03	Equation 1	4.88E+03	Mass-limited
Benzo[g,h,i]perylene	191-24-2	7.10	6.26	3.05E-03	Equation 1	4.88E+03	Mass-limited
Benzo[j]fluoranthene	205-82-3	6.44	6.15	7.34E-03	Equation 1	4.88E+03	Mass-limited
Benzo[k]fluoranthene	207-08-9	6.19	5.92	1.01E-02	EPA (1999)	8.00E-02	EPA (1999)
Chrysene	218-01-9	5.74	5.47	1.87E-02	EPA (1999)	4.00E-02	EPA (1999)
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	6.55	6.25	6.40E-03	EPA (1999)	7.00E-02	EPA (1999)
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	7.29	6.98	2.37E-03	Equation 1	4.88E+03	Mass-limited
Fluoranthene	206-44-0	5.08	4.69	4.47E-02	Equation 1	1.04E+03	Equation 2[b]
Hexachloronaphthalene	1335-87-1	7.59	7.27	1.59E-03	Equation 1	4.88E+03	Mass-limited
Indeno[1,2,3-cd]pyrene	193-39-5	6.91	6.61	3.90E-03	EPA (1999)	8.00E-02	EPA (1999)
Octachloronaphthalene	2234-13-1	6.42	6.13	7.54E-03	Equation 1	4.88E+03	Mass-limited

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Phenanthrene	85-01-8	8.92E-04	Equation 3	3.81E+02	Equation 2	9.08E-02	Equation 1
Pyrene	129-00-0	2.51E-03	Equation 3	8.89E+02	Equation 2	4.99E-02	Equation 1
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)							
3-Methylcholanthrene	56-49-5	3.24E-01	Equation 3	4.75E+04	Equation 2	3.01E-03	Equation 1
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	1.20E-02	Equation 3	5.26E+03	EPA (1999)	2.02E-02	EPA (1999)
Benzo[a]pyrene	50-32-8	2.74E-02	EPA (1999)	5.26E+03	EPA (1999)	1.11E-02	EPA (1999)
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	4.00E-02	Equation 3	5.26E+03	EPA (1999)	1.01E-02	EPA (1999)
Benzo[e]pyrene	192-97-2	6.31E-01	Equation 3	8.21E+04	Equation 2	2.05E-03	Equation 1
Benzo[g,h,i]perylene	191-24-2	3.16E-01	Equation 3	4.67E+04	Equation 2	3.05E-03	Equation 1
Benzo[j]fluoranthene	205-82-3	6.92E-02	Equation 3	1.34E+04	Equation 2	7.34E-03	Equation 1
Benzo[k]fluoranthene	207-08-9	3.98E-02	Equation 3	5.26E+03	EPA (1999)	1.01E-02	EPA (1999)
Chrysene	218-01-9	1.38E-02	Equation 3	5.26E+03	EPA (1999)	1.87E-02	EPA (1999)
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	8.86E-02	Equation 3	5.26E+03	EPA (1999)	6.40E-03	EPA (1999)
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	4.90E-01	Equation 3	6.68E+04	Equation 2	2.37E-03	Equation 1
Fluoranthene	206-44-0	3.04E-03	Equation 3	1.04E+03	Equation 2	4.47E-02	Equation 1
Hexachloronaphthalene	1335-87-1	9.77E-01	Equation 3	1.18E+05	Equation 2	1.59E-03	Equation 1
Indeno[1,2,3-cd]pyrene	193-39-5	2.07E-01	Equation 3	5.26E+03	EPA (1999)	3.90E-03	EPA (1999)
Octachloronaphthalene	2234-13-1	6.61E-02	Equation 3	1.29E+04	Equation 2	7.54E-03	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Phenanthrene	85-01-8	2.16E+03	Equation 4	3.81E+02	Equation 2
Pyrene	129-00-0	5.10E+03	Equation 4	8.89E+02	Equation 2
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)					
3-Methylcholanthrene	56-49-5	5.37E+03	Equation 4	4.75E+04	Equation 2
5-Methylchrysene	3697-24-3	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	5.00E+02	EPA (1999)	1.45E+00	EPA (1999)
Benzo[a]pyrene	50-32-8	5.00E+02	EPA (1999)	1.59E+00	EPA (1999)
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	5.00E+02	EPA (1999)	1.61E+00	EPA (1999)
Benzo[e]pyrene	192-97-2	2.92E+03	Equation 4	8.21E+04	Equation 2
Benzo[g,h,i]perylene	191-24-2	5.48E+03	Equation 4	4.67E+04	Equation 2
Benzo[j]fluoranthene	205-82-3	1.48E+04	Equation 4	1.34E+04	Equation 2
Benzo[k]fluoranthene	207-08-9	5.00E+02	EPA (1999)	1.61E+00	EPA (1999)
Chrysene	218-01-9	5.00E+02	EPA (1999)	1.38E+00	EPA (1999)
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	5.00E+02	EPA (1999)	1.61E+00	EPA (1999)
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	3.70E+03	Equation 4	6.68E+04	Equation 2
Fluoranthene	206-44-0	5.91E+03	Equation 4	1.04E+03	Equation 2
Hexachloronaphthalene	1335-87-1	1.90E+03	Equation 4	1.18E+05	Equation 2
Indeno[1,2,3-cd]pyrene	193-39-5	5.00E+02	EPA (1999)	1.61E+00	EPA (1999)
Octachloronaphthalene	2234-13-1	1.50E+04	Equation 4	1.29E+04	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)							
1,2,3-Trichlorobenzene	87-61-6	4.05	3.31	1.78E-01	Equation 1	1.47E+02	Equation 2[b]
1,2,4-Trichlorobenzene	120-82-1	3.99	3.22	1.92E-01	Equation 1	1.32E+02	Equation 2[b]
1,2,4-Trimethyl benzene	95-63-6	3.65	3.00	3.01E-01	Equation 1	6.97E+01	Equation 2[b]
1,2-Dichlorobenzene	95-50-1	3.45	2.58	3.95E-01	Equation 1	4.74E+01	Equation 2[b]
1,3,5-Trimethyl benzene	108-67-8	3.42	3.22	4.09E-01	Equation 1	4.52E+01	Equation 2[b]
1,3-Dichlorobenzene	541-73-1	3.53	2.90	3.53E-01	Equation 1	5.56E+01	Equation 2[b]
1,3-Dinitrobenzene	99-65-0	1.49	1.31	5.32E+00	EPA (1999)	1.19E+00	EPA (1999)
1,4-Dichlorobenzene	106-46-7	3.41	2.79	4.13E-01	Equation 1	4.45E+01	Equation 2[b]
1,4-Dinitrobenzene	100-25-4	1.50	2.34	5.26E+00	Equation 1	1.21E+00	Equation 2
2,4,5-Trichlorophenol	95-95-4	3.87	3.05	2.25E-01	Equation 1	1.06E+02	Equation 2[b]
2,4,6-Trichlorophenol	88-06-2	3.71	2.35	2.77E-01	Equation 1	7.83E+01	Equation 2[b]
2,4-Dichlorophenol	120-83-2	3.04	2.14	6.80E-01	Equation 1	2.20E+01	Equation 2[b]
2,4-Dimethylphenol	105-67-9	2.36	2.10	1.68E+00	Equation 1	6.12E+00	Equation 2
2,4-Dinitrophenol	51-28-5	1.52	-2.00	5.13E+00	Equation 1	1.25E+00	Equation 2
2,4-Dinitrotoluene	121-14-2	2.00	1.71	2.72E+00	EPA (1999)	3.08E+00	EPA (1999)
2,6-Dinitrotoluene	606-20-2	1.89	1.62	3.15E+00	EPA (1999)	2.50E+00	EPA (1999)
2-Chlorophenol	95-57-8	2.16	2.59	2.18E+00	Equation 1	4.21E+00	Equation 2
2-Chlorotoluene	95-49-8	3.42	2.65	3.50E-01	Equation 1	5.63E+01	Equation 2[b]
2-Nitrophenol	88-75-5	1.79	1.55	3.57E+00	Equation 1	2.09E+00	Equation 2
4,6-Dinitro-o-cresol	534-52-1	2.12	2.78	2.30E+00	Equation 1	3.89E+00	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)							
1,2,3-Trichlorobenzene	87-61-6	2.79E-04	Equation 3	1.47E+02	Equation 2	1.78E-01	Equation 1
1,2,4-Trichlorobenzene	120-82-1	2.44E-04	Equation 3	1.32E+02	Equation 2	1.92E-01	Equation 1
1,2,4-Trimethyl benzene	95-63-6	1.12E-04	Equation 3	6.97E+01	Equation 2	3.01E-01	Equation 1
1,2-Dichlorobenzene	95-50-1	7.01E-05	Equation 3	4.74E+01	Equation 2	3.95E-01	Equation 1
1,3,5-Trimethyl benzene	108-67-8	6.61E-05	Equation 3	4.52E+01	Equation 2	4.09E-01	Equation 1
1,3-Dichlorobenzene	541-73-1	8.52E-05	Equation 3	5.56E+01	Equation 2	3.53E-01	Equation 1
1,3-Dinitrobenzene	99-65-0	7.79E-07	Equation 3	2.51E+03	EPA (1999)	5.32E+00	EPA (1999)
1,4-Dichlorobenzene	106-46-7	6.48E-05	Equation 3	4.45E+01	Equation 2	4.13E-01	Equation 1
1,4-Dinitrobenzene	100-25-4	7.94E-07	Equation 3	1.21E+00	Equation 2	5.26E+00	Equation 1
2,4,5-Trichlorophenol	95-95-4	1.86E-04	Equation 3	1.06E+02	Equation 2	2.25E-01	Equation 1
2,4,6-Trichlorophenol	88-06-2	1.29E-04	Equation 3	7.83E+01	Equation 2	2.77E-01	Equation 1
2,4-Dichlorophenol	120-83-2	2.74E-05	Equation 3	2.20E+01	Equation 2	6.80E-01	Equation 1
2,4-Dimethylphenol	105-67-9	5.75E-06	Equation 3	6.12E+00	Equation 2	1.68E+00	Equation 1
2,4-Dinitrophenol	51-28-5	8.29E-07	Equation 3	1.25E+00	Equation 2	5.13E+00	Equation 1
2,4-Dinitrotoluene	121-14-2	2.49E-06	Equation 3	2.51E+03	EPA (1999)	2.72E+00	EPA (1999)
2,6-Dinitrotoluene	606-20-2	1.93E-06	Equation 3	2.51E+03	EPA (1999)	3.15E+00	EPA (1999)
2-Chlorophenol	95-57-8	3.64E-06	Equation 3	4.21E+00	Equation 2	2.18E+00	Equation 1
2-Chlorotoluene	95-49-8	8.64E-05	Equation 3	5.63E+01	Equation 2	3.50E-01	Equation 1
2-Nitrophenol	88-75-5	1.55E-06	Equation 3	2.09E+00	Equation 2	3.57E+00	Equation 1
4,6-Dinitro-o-cresol	534-52-1	3.31E-06	Equation 3	3.89E+00	Equation 2	2.30E+00	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)					
1,2,3-Trichlorobenzene	87-61-6	7.74E+02	Equation 4	1.47E+02	Equation 2
1,2,4-Trichlorobenzene	120-82-1	6.88E+02	Equation 4	1.32E+02	Equation 2
1,2,4-Trimethyl benzene	95-63-6	3.41E+02	Equation 4	6.97E+01	Equation 2
1,2-Dichlorobenzene	95-50-1	2.23E+02	Equation 4	4.74E+01	Equation 2
1,3,5-Trimethyl benzene	108-67-8	2.11E+02	Equation 4	4.52E+01	Equation 2
1,3-Dichlorobenzene	541-73-1	2.66E+02	Equation 4	5.56E+01	Equation 2
1,3-Dinitrobenzene	99-65-0	7.40E+01	EPA (1999)	1.19E+00	EPA (1999)
1,4-Dichlorobenzene	106-46-7	2.08E+02	Equation 4	4.45E+01	Equation 2
1,4-Dinitrobenzene	100-25-4	3.79E+00	Equation 4	1.21E+00	Equation 2
2,4,5-Trichlorophenol	95-95-4	5.39E+02	Equation 4	1.06E+02	Equation 2
2,4,6-Trichlorophenol	88-06-2	3.88E+02	Equation 4	7.83E+01	Equation 2
2,4-Dichlorophenol	120-83-2	9.49E+01	Equation 4	2.20E+01	Equation 2
2,4-Dimethylphenol	105-67-9	2.30E+01	Equation 4	6.12E+00	Equation 2
2,4-Dinitrophenol	51-28-5	3.94E+00	Equation 4	1.25E+00	Equation 2
2,4-Dinitrotoluene	121-14-2	2.10E+01	EPA (1999)	5.80E+01	EPA (1999)
2,6-Dinitrotoluene	606-20-2	2.10E+01	EPA (1999)	2.50E+00	EPA (1999)
2-Chlorophenol	95-57-8	1.52E+01	Equation 4	4.21E+00	Equation 2
2-Chlorotoluene	95-49-8	2.69E+02	Equation 4	5.63E+01	Equation 2
2-Nitrophenol	88-75-5	6.97E+00	Equation 4	2.09E+00	Equation 2
4,6-Dinitro-o-cresol	534-52-1	1.39E+01	Equation 4	3.89E+00	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
4-Chlorotoluene	106-43-4	3.33	2.75	4.61E-01	Equation 1	3.81E+01	Equation 2[b]
4-Nitrophenol	100-02-7	1.91	1.64	3.05E+00	Equation 1	2.62E+00	Equation 2
alpha-Methylstyrene	98-83-9	3.48	2.91	3.86E-01	Equation 1	4.90E+01	Equation 2[b]
Aniline	62-53-3	0.98	0.92	1.05E+01	Equation 1	4.54E-01	Equation 2
Benzotrichloride	98-07-7	2.92	3.07	7.95E-01	Equation 1	1.76E+01	Equation 2[b]
Benzyl chloride	100-44-7	2.30	1.95	1.81E+00	Equation 1	5.47E+00	Equation 2
Bromobenzene	108-86-1	2.99	2.65	7.24E-01	Equation 1	2.01E+01	Equation 2[b]
Chlorobenzene	108-90-7	2.79	2.35	9.45E-01	Equation 1	1.38E+01	Equation 2[b]
Cumene	98-82-8	3.61	2.97	3.16E-01	Equation 1	6.50E+01	Equation 2[b]
m-Cresol	108-39-4	1.96	1.68	2.86E+00	Equation 1	2.87E+00	Equation 2
n-Butyl benzene	104-51-8	4.28	3.40	1.30E-01	Equation 1	2.29E+02	Equation 2[b]
Nitrobenzene	98-95-3	1.83	2.08	3.38E+00	EPA (1999)	2.26E+00	EPA (1999)
n-Propyl benzene	103-65-1	3.69	2.86	2.85E-01	Equation 1	7.52E+01	Equation 2[b]
o-Cresol	95-48-7	2.02	1.73	2.63E+00	Equation 1	3.23E+00	Equation 2
o-Dinitrobenzene	528-29-0	1.69	2.35	4.08E+00	Equation 1	1.73E+00	Equation 2
o-Nitroaniline	88-74-4	1.85	1.59	3.30E+00	Equation 1	2.34E+00	Equation 2
o-Toluidine	95-53-4	1.34	1.20	6.50E+00	Equation 1	8.95E-01	Equation 2
p-Chloroaniline	106-47-8	1.87	1.61	3.22E+00	Equation 1	2.43E+00	Equation 2
p-Cresol	106-44-5	1.94	1.66	2.93E+00	Equation 1	2.77E+00	Equation 2
Phenol	108-95-2	1.48	1.34	5.42E+00	Equation 1	1.16E+00	Equation 2
p-Nitrochlorobenzene	100-00-5	2.39	2.02	1.61E+00	Equation 1	6.48E+00	Equation 2
p-Toluidine	106-49-0	1.40	1.24	6.01E+00	Equation 1	1.00E+00	Equation 2
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	4.11	3.36	1.63E-01	Equation 1	1.66E+02	Equation 2[b]
Toluene-2,6-diamine	823-40-5	0.16	2.09	3.13E+01	Equation 1	9.66E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
4-Chlorotoluene	106-43-4	5.37E-05	Equation 3	3.81E+01	Equation 2	4.61E-01	Equation 1
4-Nitrophenol	100-02-7	2.04E-06	Equation 3	2.62E+00	Equation 2	3.05E+00	Equation 1
alpha-Methylstyrene	98-83-9	7.30E-05	Equation 3	4.90E+01	Equation 2	3.86E-01	Equation 1
Aniline	62-53-3	2.40E-07	Equation 3	4.54E-01	Equation 2	1.05E+01	Equation 1
Benzotrichloride	98-07-7	2.09E-05	Equation 3	1.76E+01	Equation 2	7.95E-01	Equation 1
Benzyl chloride	100-44-7	5.01E-06	Equation 3	5.47E+00	Equation 2	1.81E+00	Equation 1
Bromobenzene	108-86-1	2.45E-05	Equation 3	2.01E+01	Equation 2	7.24E-01	Equation 1
Chlorobenzene	108-90-7	1.55E-05	Equation 3	1.38E+01	Equation 2	9.45E-01	Equation 1
Cumene	98-82-8	1.03E-04	Equation 3	6.50E+01	Equation 2	3.16E-01	Equation 1
m-Cresol	108-39-4	2.29E-06	Equation 3	2.87E+00	Equation 2	2.86E+00	Equation 1
n-Butyl benzene	104-51-8	4.79E-04	Equation 3	2.29E+02	Equation 2	1.30E-01	Equation 1
Nitrobenzene	98-95-3	1.71E-06	Equation 3	2.40E+01	EPA (1999)	3.38E+00	EPA (1999)
n-Propyl benzene	103-65-1	1.23E-04	Equation 3	7.52E+01	Equation 2	2.85E-01	Equation 1
o-Cresol	95-48-7	2.64E-06	Equation 3	3.23E+00	Equation 2	2.63E+00	Equation 1
o-Dinitrobenzene	528-29-0	1.23E-06	Equation 3	1.73E+00	Equation 2	4.08E+00	Equation 1
o-Nitroaniline	88-74-4	1.78E-06	Equation 3	2.34E+00	Equation 2	3.30E+00	Equation 1
o-Toluidine	95-53-4	5.50E-07	Equation 3	8.95E-01	Equation 2	6.50E+00	Equation 1
p-Chloroaniline	106-47-8	1.86E-06	Equation 3	2.43E+00	Equation 2	3.22E+00	Equation 1
p-Cresol	106-44-5	2.19E-06	Equation 3	2.77E+00	Equation 2	2.93E+00	Equation 1
Phenol	108-95-2	7.54E-07	Equation 3	1.16E+00	Equation 2	5.42E+00	Equation 1
p-Nitrochlorobenzene	100-00-5	6.17E-06	Equation 3	6.48E+00	Equation 2	1.61E+00	Equation 1
p-Toluidine	106-49-0	6.31E-07	Equation 3	1.00E+00	Equation 2	6.01E+00	Equation 1
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	3.24E-04	Equation 3	1.66E+02	Equation 2	1.63E-01	Equation 1
Toluene-2,6-diamine	823-40-5	3.63E-08	Equation 3	9.66E-02	Equation 2	3.13E+01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
4-Chlorotoluene	106-43-4	1.75E+02	Equation 4	3.81E+01	Equation 2
4-Nitrophenol	100-02-7	8.96E+00	Equation 4	2.62E+00	Equation 2
alpha-Methylstyrene	98-83-9	2.31E+02	Equation 4	4.90E+01	Equation 2
Aniline	62-53-3	1.28E+00	Equation 4	4.54E-01	Equation 2
Benzotrichloride	98-07-7	7.43E+01	Equation 4	1.76E+01	Equation 2
Benzyl chloride	100-44-7	2.03E+01	Equation 4	5.47E+00	Equation 2
Bromobenzene	108-86-1	8.60E+01	Equation 4	2.01E+01	Equation 2
Chlorobenzene	108-90-7	5.65E+01	Equation 4	1.38E+01	Equation 2
Cumene	98-82-8	3.16E+02	Equation 4	6.50E+01	Equation 2
m-Cresol	108-39-4	9.92E+00	Equation 4	2.87E+00	Equation 2
n-Butyl benzene	104-51-8	1.25E+03	Equation 4	2.29E+02	Equation 2
Nitrobenzene	98-95-3	2.10E+01	EPA (1999)	2.27E+00	EPA (1999)
n-Propyl benzene	103-65-1	3.71E+02	Equation 4	7.52E+01	Equation 2
o-Cresol	95-48-7	1.13E+01	Equation 4	3.23E+00	Equation 2
o-Dinitrobenzene	528-29-0	5.65E+00	Equation 4	1.73E+00	Equation 2
o-Nitroaniline	88-74-4	7.90E+00	Equation 4	2.34E+00	Equation 2
o-Toluidine	95-53-4	2.72E+00	Equation 4	8.95E-01	Equation 2
p-Chloroaniline	106-47-8	8.22E+00	Equation 4	2.43E+00	Equation 2
p-Cresol	106-44-5	9.53E+00	Equation 4	2.77E+00	Equation 2
Phenol	108-95-2	3.62E+00	Equation 4	1.16E+00	Equation 2
p-Nitrochlorobenzene	100-00-5	2.45E+01	Equation 4	6.48E+00	Equation 2
p-Toluidine	106-49-0	3.08E+00	Equation 4	1.00E+00	Equation 2
sec-Butyl benzene	135-98-8	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	8.84E+02	Equation 4	1.66E+02	Equation 2
Toluene-2,6-diamine	823-40-5	2.29E-01	Equation 4	9.66E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Trimethyl benzene	25551-13-7	3.42	2.85	4.09E-01	Equation 1	4.52E+01	Equation 2[b]
Other Light Semivolatile Compounds (molecular weight <200 g/mole)							
1,1'-Biphenyl	92-52-4	3.90	3.40	2.16E-01	Equation 1	1.12E+02	Equation 2[b]
1,1-Dimethylhydrazine	57-14-7	-1.19	1.30	1.89E+02	Equation 1	7.58E-03	Equation 2
1,2-Dimethylhydrazine	540-73-8	-1.37	-0.92	2.39E+02	Equation 1	5.42E-03	Equation 2
1,2-Diphenylhydrazine	122-66-7	2.94	2.44	7.74E-01	Equation 1	1.83E+01	Equation 2[b]
1,3-Propane sultone	1120-71-4	-0.52	-0.26	7.77E+01	Equation 1	2.66E-02	Equation 2
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	1.93	1.95	2.97E+00	Equation 1	2.72E+00	Equation 2
2-Propenoic acid	79-10-7	0.43	0.49	2.19E+01	Equation 1	1.61E-01	Equation 2
4,4'-Methylenedianiline	101-77-9	1.59	3.69	4.67E+00	Equation 1	1.43E+00	Equation 2
Acetophenone	98-86-2	1.64	1.43	4.36E+00	Equation 1	1.58E+00	Equation 2
Benzoic acid	65-85-0	1.87	-0.26	3.21E+00	Equation 1	2.43E+00	Equation 2
bis(2-Chloroethoxy)methane	111-91-1	1.30	0.44	6.86E+00	Equation 1	8.29E-01	Equation 2
bis(2-Chloroethyl) ether	111-44-4	1.30	1.88	6.85E+00	Equation 1	8.31E-01	Equation 2
Chlorocyclopentadiene	41851-50-7	2.43	2.16	1.53E+00	Equation 1	6.99E+00	Equation 2
Cyclohexanol	108-93-0	1.23	1.11	7.53E+00	Equation 1	7.27E-01	Equation 2
Dichloroisopropyl ether	108-60-1	2.58	1.78	1.25E+00	Equation 1	9.27E+00	Equation 2
Dichloromethyl ether	542-88-1	0.58	0.64	1.79E+01	Equation 1	2.13E-01	Equation 2
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	0.16	1.38	3.13E+01	Equation 1	9.66E-02	Equation 2
Dimethylaniline	121-69-7	2.31	1.89	1.79E+00	Equation 1	5.57E+00	Equation 2
Di-n-propylnitrosamine	621-64-7	1.38	1.23	6.17E+00	Equation 1	9.65E-01	Equation 2
Diphenyl ether	101-84-8	4.21	3.43	1.43E-01	Equation 1	2.00E+02	Equation 2[b]
Epichlorohydrin	106-89-8	0.25	0.35	2.77E+01	Equation 1	1.15E-01	Equation 2
Ethyl carbamate (Urethane)	51-79-6	-0.15	0.03	4.73E+01	Equation 1	5.38E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Trimethyl benzene	25551-13-7	6.61E-05	Equation 3	4.52E+01	Equation 2[b]	4.09E-01	Equation 1
Other Light Semivolatile Compounds (molecular weight <200 g/mole)							
1,1'-Biphenyl	92-52-4	2.00E-04	Equation 3	1.12E+02	Equation 2	2.16E-01	Equation 1
1,1-Dimethylhydrazine	57-14-7	1.62E-09	Equation 3	7.58E-03	Equation 2	1.89E+02	Equation 1
1,2-Dimethylhydrazine	540-73-8	1.08E-09	Equation 3	5.42E-03	Equation 2	2.39E+02	Equation 1
1,2-Diphenylhydrazine	122-66-7	2.19E-05	Equation 3	1.83E+01	Equation 2	7.74E-01	Equation 1
1,3-Propane sultone	1120-71-4	7.53E-09	Equation 3	2.66E-02	Equation 2	7.77E+01	Equation 1
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	2.14E-06	Equation 3	2.72E+00	Equation 2	2.97E+00	Equation 1
2-Propenoic acid	79-10-7	6.76E-08	Equation 3	1.61E-01	Equation 2	2.19E+01	Equation 1
4,4'-Methylenedianiline	101-77-9	9.77E-07	Equation 3	1.43E+00	Equation 2	4.67E+00	Equation 1
Acetophenone	98-86-2	1.10E-06	Equation 3	1.58E+00	Equation 2	4.36E+00	Equation 1
Benzoic acid	65-85-0	1.86E-06	Equation 3	2.43E+00	Equation 2	3.21E+00	Equation 1
bis(2-Chloroethoxy)methane	111-91-1	5.01E-07	Equation 3	8.29E-01	Equation 2	6.86E+00	Equation 1
bis(2-Chloroethyl) ether	111-44-4	5.02E-07	Equation 3	8.31E-01	Equation 2	6.85E+00	Equation 1
Chlorocyclopentadiene	41851-50-7	6.76E-06	Equation 3	6.99E+00	Equation 2	1.53E+00	Equation 1
Cyclohexanol	108-93-0	4.27E-07	Equation 3	7.27E-01	Equation 2	7.53E+00	Equation 1
Dichloroisopropyl ether	108-60-1	9.55E-06	Equation 3	9.27E+00	Equation 2	1.25E+00	Equation 1
Dichloromethyl ether	542-88-1	9.55E-08	Equation 3	2.13E-01	Equation 2	1.79E+01	Equation 1
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	3.63E-08	Equation 3	9.66E-02	Equation 2	3.13E+01	Equation 1
Dimethylaniline	121-69-7	5.13E-06	Equation 3	5.57E+00	Equation 2	1.79E+00	Equation 1
Di-n-propylnitrosamine	621-64-7	6.03E-07	Equation 3	9.65E-01	Equation 2	6.17E+00	Equation 1
Diphenyl ether	101-84-8	4.07E-04	Equation 3	2.00E+02	Equation 2	1.43E-01	Equation 1
Epichlorohydrin	106-89-8	4.47E-08	Equation 3	1.15E-01	Equation 2	2.77E+01	Equation 1
Ethyl carbamate (Urethane)	51-79-6	1.78E-08	Equation 3	5.38E-02	Equation 2	4.73E+01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Trimethyl benzene	25551-13-7	2.11E+02	Equation 4	4.52E+01	Equation 2[b]
Other Light Semivolatile Compounds (molecular weight <200 g/mole)					
1,1'-Biphenyl	92-52-4	5.73E+02	Equation 4	1.12E+02	Equation 2
1,1-Dimethylhydrazine	57-14-7	1.35E-02	Equation 4	7.58E-03	Equation 2
1,2-Dimethylhydrazine	540-73-8	9.31E-03	Equation 4	5.42E-03	Equation 2
1,2-Diphenylhydrazine	122-66-7	7.74E+01	Equation 4	1.83E+01	Equation 2
1,3-Propane sultone	1120-71-4	5.47E-02	Equation 4	2.66E-02	Equation 2
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	9.34E+00	Equation 4	2.72E+00	Equation 2
2-Propenoic acid	79-10-7	4.03E-01	Equation 4	1.61E-01	Equation 2
4,4'-Methylenedianiline	101-77-9	4.58E+00	Equation 4	1.43E+00	Equation 2
Acetophenone	98-86-2	5.09E+00	Equation 4	1.58E+00	Equation 2
Benzoic acid	65-85-0	8.23E+00	Equation 4	2.43E+00	Equation 2
bis(2-Chloroethoxy)methane	111-91-1	2.49E+00	Equation 4	8.29E-01	Equation 2
bis(2-Chloroethyl) ether	111-44-4	2.50E+00	Equation 4	8.31E-01	Equation 2
Chlorocyclopentadiene	41851-50-7	2.66E+01	Equation 4	6.99E+00	Equation 2
Cyclohexanol	108-93-0	2.15E+00	Equation 4	7.27E-01	Equation 2
Dichloroisopropyl ether	108-60-1	3.64E+01	Equation 4	9.27E+00	Equation 2
Dichloromethyl ether	542-88-1	5.52E-01	Equation 4	2.13E-01	Equation 2
Dichloropentadiene	61626-71-9	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	2.29E-01	Equation 4	9.66E-02	Equation 2
Dimethylaniline	121-69-7	2.07E+01	Equation 4	5.57E+00	Equation 2
Di-n-propylnitrosamine	621-64-7	2.95E+00	Equation 4	9.65E-01	Equation 2
Diphenyl ether	101-84-8	1.09E+03	Equation 4	2.00E+02	Equation 2
Epichlorohydrin	106-89-8	2.77E-01	Equation 4	1.15E-01	Equation 2
Ethyl carbamate (Urethane)	51-79-6	1.20E-01	Equation 4	5.38E-02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Ethyl methanesulfonate	62-50-0	0.05	0.19	3.63E+01	Equation 1	7.84E-02	Equation 2
Ethylene dibromide	106-93-4	1.75	1.52	3.77E+00	Equation 1	1.94E+00	Equation 2
Ethylene glycol	107-21-1	-1.36	0.00	2.37E+02	Equation 1	5.50E-03	Equation 2
Ethylene glycol monobutyl ether	111-76-2	0.83	0.00	1.28E+01	Equation 1	3.42E-01	Equation 2
Ethylene glycol monoethyl ether acetate	111-15-9	0.59	0.32	1.77E+01	Equation 1	2.17E-01	Equation 2
Ethylene thiourea	96-45-7	-0.66	0.81	9.32E+01	Equation 1	2.06E-02	Equation 2
Furfural	98-01-1	0.96	0.90	1.08E+01	Equation 1	4.37E-01	Equation 2
Maleic hydrazide	123-33-1	-0.84	1.01	1.18E+02	Equation 1	1.47E-02	Equation 2
Malononitrile	109-77-3	-0.60	1.18	8.61E+01	Equation 1	2.30E-02	Equation 2
Methyl styrene (mixed isomers)	25013-15-4	3.48	2.91	3.77E-01	Equation 1	5.06E+01	Equation 2[b]
Methylhydrazine	60-34-4	-1.05	-0.67	1.57E+02	Equation 1	9.86E-03	Equation 2
N,N-Diphenylamine	122-39-4	3.50	2.54	3.67E-01	Equation 1	5.25E+01	Equation 2[b]
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	2.41	2.03	1.57E+00	Equation 1	6.73E+00	Equation 2
N-Nitrosomorpholine	59-89-2	0.98	0.92	1.05E+01	Equation 1	4.54E-01	Equation 2
N-Nitroso-N,N-dimethylamine	62-75-9	-0.57	1.58	8.27E+01	Equation 1	2.44E-02	Equation 2
o-Anisidine	90-04-0	1.18	1.07	8.05E+00	Equation 1	6.61E-01	Equation 2
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	-0.60	-0.68	8.63E+01	Equation 1	2.30E-02	Equation 2
p-Phthalic acid	100-21-0	2.00	1.85	2.70E+00	Equation 1	3.10E+00	Equation 2
Pyridine	110-86-1	0.67	0.67	1.59E+01	Equation 1	2.53E-01	Equation 2
Quinoline	91-22-5	2.03	3.26	2.60E+00	Equation 1	3.29E+00	Equation 2
Quinone	106-51-4	0.20	0.31	2.97E+01	Equation 1	1.04E-01	Equation 2
Safrole	94-59-7	2.66	2.23	1.12E+00	Equation 1	1.08E+01	Equation 2[b]
Tetrahydrofuran	109-99-9	0.45	0.50	2.14E+01	Equation 1	1.66E-01	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Ethyl methanesulfonate	62-50-0	2.81E-08	Equation 3	7.84E-02	Equation 2	3.63E+01	Equation 1
Ethylene dibromide	106-93-4	1.41E-06	Equation 3	1.94E+00	Equation 2	3.77E+00	Equation 1
Ethylene glycol	107-21-1	1.10E-09	Equation 3	5.50E-03	Equation 2	2.37E+02	Equation 1
Ethylene glycol monobutyl ether	111-76-2	1.70E-07	Equation 3	3.42E-01	Equation 2	1.28E+01	Equation 1
Ethylene glycol monoethyl ether acetate	111-15-9	9.77E-08	Equation 3	2.17E-01	Equation 2	1.77E+01	Equation 1
Ethylene thiourea	96-45-7	5.50E-09	Equation 3	2.06E-02	Equation 2	9.32E+01	Equation 1
Furfural	98-01-1	2.29E-07	Equation 3	4.37E-01	Equation 2	1.08E+01	Equation 1
Maleic hydrazide	123-33-1	3.63E-09	Equation 3	1.47E-02	Equation 2	1.18E+02	Equation 1
Malononitrile	109-77-3	6.31E-09	Equation 3	2.30E-02	Equation 2	8.61E+01	Equation 1
Methyl styrene (mixed isomers)	25013-15-4	7.59E-05	Equation 3	5.06E+01	Equation 2[b]	3.77E-01	Equation 1
Methylhydrazine	60-34-4	2.24E-09	Equation 3	9.86E-03	Equation 2	1.57E+02	Equation 1
N,N-Diphenylamine	122-39-4	7.94E-05	Equation 3	5.25E+01	Equation 2	3.67E-01	Equation 1
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	6.46E-06	Equation 3	6.73E+00	Equation 2	1.57E+00	Equation 1
N-Nitrosomorpholine	59-89-2	2.40E-07	Equation 3	4.54E-01	Equation 2	1.05E+01	Equation 1
N-Nitroso-N,N-dimethylamine	62-75-9	6.76E-09	Equation 3	2.44E-02	Equation 2	8.27E+01	Equation 1
o-Anisidine	90-04-0	3.80E-07	Equation 3	6.61E-01	Equation 2	8.05E+00	Equation 1
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	6.28E-09	Equation 3	2.30E-02	Equation 2	8.63E+01	Equation 1
p-Phthalic acid	100-21-0	2.51E-06	Equation 3	3.10E+00	Equation 2	2.70E+00	Equation 1
Pyridine	110-86-1	1.18E-07	Equation 3	2.53E-01	Equation 2	1.59E+01	Equation 1
Quinoline	91-22-5	2.69E-06	Equation 3	3.29E+00	Equation 2	2.60E+00	Equation 1
Quinone	106-51-4	3.98E-08	Equation 3	1.04E-01	Equation 2	2.97E+01	Equation 1
Safrole	94-59-7	1.15E-05	Equation 3	1.08E+01	Equation 2	1.12E+00	Equation 1
Tetrahydrofuran	109-99-9	7.03E-08	Equation 3	1.66E-01	Equation 2	2.14E+01	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Ethyl methanesulfonate	62-50-0	1.81E-01	Equation 4	7.84E-02	Equation 2
Ethylene dibromide	106-93-4	6.40E+00	Equation 4	1.94E+00	Equation 2
Ethylene glycol	107-21-1	9.47E-03	Equation 4	5.50E-03	Equation 2
Ethylene glycol monobutyl ether	111-76-2	9.32E-01	Equation 4	3.42E-01	Equation 2
Ethylene glycol monoethyl ether acetate	111-15-9	5.64E-01	Equation 4	2.17E-01	Equation 2
Ethylene thiourea	96-45-7	4.11E-02	Equation 4	2.06E-02	Equation 2
Furfural	98-01-1	1.22E+00	Equation 4	4.37E-01	Equation 2
Maleic hydrazide	123-33-1	2.82E-02	Equation 4	1.47E-02	Equation 2
Malononitrile	109-77-3	4.66E-02	Equation 4	2.30E-02	Equation 2
Methyl styrene (mixed isomers)	25013-15-4	2.39E+02	Equation 4	5.06E+01	Equation 2[b]
Methylhydrazine	60-34-4	1.81E-02	Equation 4	9.86E-03	Equation 2
N,N-Diphenylamine	122-39-4	2.50E+02	Equation 4	5.25E+01	Equation 2
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	2.55E+01	Equation 4	6.73E+00	Equation 2
N-Nitrosomorpholine	59-89-2	1.28E+00	Equation 4	4.54E-01	Equation 2
N-Nitroso-N,N-dimethylamine	62-75-9	4.96E-02	Equation 4	2.44E-02	Equation 2
o-Anisidine	90-04-0	1.94E+00	Equation 4	6.61E-01	Equation 2
Oxalic acid	144-62-7	No data	No data	No data	No data
Phthalic anhydride	85-44-9	4.64E-02	Equation 4	2.30E-02	Equation 2
p-Phthalic acid	100-21-0	1.08E+01	Equation 4	3.10E+00	Equation 2
Pyridine	110-86-1	6.67E-01	Equation 4	2.53E-01	Equation 2
Quinoline	91-22-5	1.15E+01	Equation 4	3.29E+00	Equation 2
Quinone	106-51-4	2.49E-01	Equation 4	1.04E-01	Equation 2
Safrole	94-59-7	4.31E+01	Equation 4	1.08E+01	Equation 2
Tetrahydrofuran	109-99-9	4.18E-01	Equation 4	1.66E-01	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)							
1,2,4,5-Tetrachlorobenzene	95-94-3	4.64	3.77	8.06E-02	Equation 1	4.51E+02	Equation 2[b]
1,3,5-Trinitrobenzene	99-35-4	1.18	1.07	8.06E+00	Equation 1	6.60E-01	Equation 2
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	4.17	3.40	1.51E-01	Equation 1	1.86E+02	Equation 2[b]
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	4.54	3.69	9.20E-02	Equation 1	3.73E+02	Equation 2[b]
2-sec-Butyl-4,6-dinitrophenol	88-85-7	3.56	3.55	3.39E-01	Equation 1	5.88E+01	Equation 2[b]
3,3'-Dichlorobenzidine	91-94-1	3.58	2.94	3.30E-01	Equation 1	6.11E+01	Equation 2[b]
3,3'-Dimethoxybenzidine	119-90-4	1.81	1.56	3.48E+00	Equation 1	2.17E+00	Equation 2
4-Bromophenylphenyl ether	101-55-3	5.04	4.08	4.72E-02	Equation 1	9.59E+02	Equation 2[b]
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	3.82	3.29	2.40E-01	Equation 1	9.61E+01	Equation 2[b]
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	NA	NA	No data	No data	No data	No data
Captan	133-06-2	2.35	2.30	1.70E+00	Equation 1	6.01E+00	Equation 2
Chlorobenzilate	510-15-6	4.38	3.57	1.14E-01	Equation 1	2.76E+02	Equation 2[b]
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	4.58	3.72	8.72E-02	Equation 1	4.03E+02	Equation 2[b]
Hexachlorobenzene	118-74-1	5.50	4.90	2.55E-02	EPA (1999)	2.30E+03	EPA (1999)
Hexachlorobutadiene	87-68-3	4.73	3.84	7.14E-02	EPA (1999)	5.35E+02	EPA (1999)
Hexachlorocyclopentadiene	77-47-4	4.91	3.98	5.65E-02	EPA (1999)	7.45E+02	EPA (1999)
Hexachloroethane	67-72-1	3.98	3.26	1.93E-01	Equation 1	1.31E+02	Equation 2[b]
Hexachlorophene	70-30-4	7.54	6.03	1.70E-03	EPA (1999)	4.88E+03	Mass-limited
Hexamethylene-1,5-diisocyanate	822-06-0	3.20	3.77	5.48E-01	Equation 1	2.98E+01	Equation 2[b]
Mirex	2385-85-5	6.89	6.00	4.03E-03	Equation 1	4.88E+03	Mass-limited
Nitrofen	1836-75-5	5.53	4.46	2.46E-02	Equation 1	2.42E+03	Equation 2[b]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)							
1,2,4,5-Tetrachlorobenzene	95-94-3	1.10E-03	Equation 3	4.51E+02	Equation 2	8.06E-02	Equation 1
1,3,5-Trinitrobenzene	99-35-4	3.79E-07	Equation 3	6.60E-01	Equation 2	8.06E+00	Equation 1
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	3.72E-04	Equation 3	1.86E+02	Equation 2	1.51E-01	Equation 1
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	8.71E-04	Equation 3	3.73E+02	Equation 2	9.20E-02	Equation 1
2-sec-Butyl-4,6-dinitrophenol	88-85-7	9.12E-05	Equation 3	5.88E+01	Equation 2[b]	3.39E-01	Equation 1
3,3'-Dichlorobenzidine	91-94-1	9.44E-05	Equation 3	6.11E+01	Equation 2	3.30E-01	Equation 1
3,3'-Dimethoxybenzidine	119-90-4	1.62E-06	Equation 3	2.17E+00	Equation 2	3.48E+00	Equation 1
4-Bromophenylphenyl ether	101-55-3	2.76E-03	Equation 3	9.59E+02	Equation 2	4.72E-02	Equation 1
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	1.66E-04	Equation 3	9.61E+01	Equation 2	2.40E-01	Equation 1
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data
Captan	133-06-2	5.62E-06	Equation 3	6.01E+00	Equation 2	1.70E+00	Equation 1
Chlorobenzilate	510-15-6	6.03E-04	Equation 3	2.76E+02	Equation 2	1.14E-01	Equation 1
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	9.55E-04	Equation 3	4.03E+02	Equation 2	8.72E-02	Equation 1
Hexachlorobenzene	118-74-1	7.99E-03	Equation 3	1.11E+04	EPA (1999)	2.55E-02	EPA (1999)
Hexachlorobutadiene	87-68-3	1.35E-03	Equation 3	1.60E+02	EPA (1999)	7.14E-02	EPA (1999)
Hexachlorocyclopentadiene	77-47-4	2.03E-03	EPA (1999)	6.10E+02	EPA (1999)	5.65E-02	EPA (1999)
Hexachloroethane	67-72-1	2.43E-04	Equation 3	1.31E+02	Equation 2	1.93E-01	Equation 1
Hexachlorophene	70-30-4	8.72E-01	Equation 3	1.50E+03	EPA (1999)	1.70E-03	EPA (1999)
Hexamethylene-1,5-diisocyanate	822-06-0	3.98E-05	Equation 3	2.98E+01	Equation 2[b]	5.48E-01	Equation 1
Mirex	2385-85-5	1.95E-01	Equation 3	3.14E+04	Equation 2	4.03E-03	Equation 1
Nitrofen	1836-75-5	8.51E-03	Equation 3	2.42E+03	Equation 2	2.46E-02	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)					
1,2,4,5-Tetrachlorobenzene	95-94-3	2.58E+03	Equation 4	4.51E+02	Equation 2
1,3,5-Trinitrobenzene	99-35-4	1.94E+00	Equation 4	6.60E-01	Equation 2
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	1.00E+03	Equation 4	1.86E+02	Equation 2
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	2.12E+03	Equation 4	3.73E+02	Equation 2
2-sec-Butyl-4,6-dinitrophenol	88-85-7	2.83E+02	Equation 4	5.88E+01	Equation 2b
3,3'-Dichlorobenzidine	91-94-1	2.92E+02	Equation 4	6.11E+01	Equation 2
3,3'-Dimethoxybenzidine	119-90-4	7.26E+00	Equation 4	2.17E+00	Equation 2
4-Bromophenylphenyl ether	101-55-3	5.48E+03	Equation 4	9.61E+02	Equation 2
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data
Azobenzene	103-33-3	4.86E+02	Equation 4	9.61E+01	Equation 2
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data
Captan	133-06-2	2.25E+01	Equation 4	6.01E+00	Equation 2
Chlorobenzilate	510-15-6	1.53E+03	Equation 4	2.76E+02	Equation 2
Dibutylphosphate	107-66-4	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	2.29E+03	Equation 4	4.03E+02	Equation 2
Hexachlorobenzene	118-74-1	2.53E+02	EPA (1999)	2.30E+03	EPA (1999)
Hexachlorobutadiene	87-68-3	7.83E+02	EPA (1999)	4.40E-01	EPA (1999)
Hexachlorocyclopentadiene	77-47-4	1.65E+02	EPA (1999)	7.46E+02	EPA (1999)
Hexachloroethane	67-72-1	6.83E+02	Equation 4	1.31E+02	Equation 2
Hexachlorophene	70-30-4	2.78E+02	EPA (1999)	1.07E+05	EPA (1999)
Hexamethylene-1,5-diisocyanate	822-06-0	1.33E+02	Equation 4	2.98E+01	Equation 2[b]
Mirex	2385-85-5	8.09E+03	Equation 4	3.14E+04	Equation 2
Nitrofen	1836-75-5	1.17E+04	Equation 4	2.42E+03	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Pentachlorobenzene	608-93-5	5.09	4.51	4.40E-02	EPA (1999)	1.05E+03	EPA (1999)
Pentachloronitrobenzene	82-68-8	4.64	3.77	8.00E-02	EPA (1999)	4.51E+02	EPA (1999)
Pentachlorophenol	87-86-5	5.08	2.70	4.49E-02	EPA (1999)	1.03E+03	EPA (1999)
Picric acid	88-89-1	2.03	1.73	2.60E+00	Equation 1	3.29E+00	Equation 2
Pronamide	23950-58-5	3.51	2.89	3.62E-01	Equation 1	5.36E+01	Equation 2[b]
Strychnine	57-24-9	1.93	1.66	2.97E+00	Equation 1	2.72E+00	Equation 2
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	4.00	3.27	1.89E-01	Equation 1	1.35E+02	Equation 2[b]
Trifluralin	1582-09-8	5.34	3.78	3.17E-02	Equation 1	1.69E+03	Equation 2[b]
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides							
2,4,5-T	93-76-5	3.36	1.72	4.43E-01	Equation 1	4.03E+01	Equation 2[b]
2,4-D and esters	94-75-7	2.81	1.30	9.20E-01	Equation 1	1.43E+01	Equation 2[b]
4,4'-DDD	72-54-8	6.12	4.66	1.12E-02	Equation 1	4.88E+03	Mass-limited
4,4'-DDE	72-55-9	6.26	4.94	9.37E-03	EPA (1999)	1.26E+00	EPA (1999)
4,4'-DDT	50-29-3	6.07	5.83	1.20E-02	Equation 1	4.88E+03	Mass-limited
Aldrin	309-00-2	6.18	4.69	1.04E-02	Equation 1	4.88E+03	Mass-limited
alpha-BHC	319-84-6	3.80	3.25	2.47E-01	Equation 1	9.24E+01	Equation 2[b]
beta-BHC	319-85-7	3.83	3.33	2.36E-01	Equation 1	9.85E+01	Equation 2[b]
Chlordane	57-74-9	5.94	4.71	1.43E-02	Equation 1	5.21E+03	Equation 2[b]
Delta-BHC	319-86-8	4.14	2.82	1.57E-01	Equation 1	1.76E+02	Equation 2[b]
Dieldrin	60-57-1	5.27	4.41	3.49E-02	Equation 1	1.48E+03	Equation 2[b]
Endothall	145-73-3	-0.87	-0.53	1.23E+02	Equation 1	1.39E-02	Equation 2
Endrin	72-20-8	4.89	4.03	5.76E-02	Equation 1	7.25E+02	Equation 2[b]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Pentachlorobenzene	608-93-5	3.08E-03	Equation 3	4.00E+03	EPA (1999)	4.40E-02	EPA (1999)
Pentachloronitrobenzene	82-68-8	1.10E-03	Equation 3	4.74E+03	EPA (1999)	8.00E-02	EPA (1999)
Pentachlorophenol	87-86-5	3.01E-03	EPA (1999)	1.71E+03	EPA (1999)	4.49E-02	EPA (1999)
Picric acid	88-89-1	2.69E-06	Equation 3	3.29E+00	Equation 2	2.60E+00	Equation 1
Pronamide	23950-58-5	8.14E-05	Equation 3	5.36E+01	Equation 2	3.62E-01	Equation 1
Strychnine	57-24-9	2.14E-06	Equation 3	2.72E+00	Equation 2	2.97E+00	Equation 1
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	2.51E-04	Equation 3	1.35E+02	Equation 2	1.89E-01	Equation 1
Trifluralin	1582-09-8	5.50E-03	Equation 3	1.69E+03	Equation 2	3.17E-02	Equation 1
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides							
2,4,5-T	93-76-5	5.75E-05	Equation 3	4.03E+01	Equation 2	4.43E-01	Equation 1
2,4-D and esters	94-75-7	1.62E-05	Equation 3	1.43E+01	Equation 2	9.20E-01	Equation 1
4,4'-DDD	72-54-8	3.32E-02	Equation 3	7.35E+03	Equation 2	1.12E-02	Equation 1
4,4'-DDE	72-55-9	4.54E-02	Equation 3	1.13E+04	EPA (1999)	9.37E-03	EPA (1999)
4,4'-DDT	50-29-3	2.95E-02	Equation 3	6.69E+03	Equation 2	1.20E-02	Equation 1
Aldrin	309-00-2	3.79E-02	Equation 3	8.21E+03	Equation 2	1.04E-02	Equation 1
alpha-BHC	319-84-6	1.58E-04	Equation 3	9.24E+01	Equation 2	2.47E-01	Equation 1
beta-BHC	319-85-7	1.71E-04	Equation 3	9.85E+01	Equation 2	2.36E-01	Equation 1
Chlordane	57-74-9	2.18E-02	Equation 3	5.21E+03	Equation 2	1.43E-02	Equation 1
Delta-BHC	319-86-8	3.47E-04	Equation 3	1.76E+02	Equation 2	1.57E-01	Equation 1
Dieldrin	60-57-1	4.67E-03	Equation 3	1.48E+03	Equation 2	3.49E-02	Equation 1
Endothall	145-73-3	3.39E-09	Equation 3	1.39E-02	Equation 2	1.23E+02	Equation 1
Endrin	72-20-8	1.96E-03	Equation 3	7.25E+02	Equation 2	5.76E-02	Equation 1

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Pentachlorobenzene	608-93-5	1.27E+04	EPA (1999)	3.20E-01	EPA (1999)
Pentachloronitrobenzene	82-68-8	2.14E+02	EPA (1999)	4.51E+02	EPA (1999)
Pentachlorophenol	87-86-5	1.09E+02	EPA (1999)	1.03E+03	EPA (1999)
Picric acid	88-89-1	1.15E+01	Equation 4	3.29E+00	Equation 2
Pronamide	23950-58-5	2.55E+02	Equation 4	5.36E+01	Equation 2
Strychnine	57-24-9	9.34E+00	Equation 4	2.72E+00	Equation 2
Terphenyls	26140-60-3	No data	No data	No data	No data
Tributyl phosphate	126-73-8	7.05E+02	Equation 4	1.35E+02	Equation 2
Trifluralin	1582-09-8	9.00E+03	Equation 4	1.69E+03	Equation 2
Triphenylamine	603-34-9	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides					
2,4,5-T	93-76-5	1.86E+02	Equation 4	4.03E+01	Equation 2
2,4-D and esters	94-75-7	5.90E+01	Equation 4	1.43E+01	Equation 2
4,4'-DDD	72-54-8	1.72E+04	Equation 4	7.35E+03	Equation 2
4,4'-DDE	72-55-9	2.55E+04	EPA (1999)	9.50E-01	EPA (1999)
4,4'-DDT	50-29-3	1.71E+04	Equation 4	6.69E+03	Equation 2
Aldrin	309-00-2	1.70E+04	Equation 4	8.21E+03	Equation 2
alpha-BHC	319-84-6	4.65E+02	Equation 4	9.24E+01	Equation 2
beta-BHC	319-85-7	4.99E+02	Equation 4	9.85E+01	Equation 2
Chlordane	57-74-9	1.66E+04	Equation 4	5.21E+03	Equation 2
Delta-BHC	319-86-8	9.41E+02	Equation 4	1.76E+02	Equation 2
Dieldrin	60-57-1	8.07E+03	Equation 4	1.48E+03	Equation 2
Endothall	145-73-3	2.64E-02	Equation 4	1.39E-02	Equation 2
Endrin	72-20-8	4.18E+03	Equation 4	7.25E+02	Equation 2

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
gamma-BHC (Lindane)	58-89-9	3.72	3.03	2.74E-01	Equation 1	7.96E+01	Equation 2[b]
Heptachlor	76-44-8	5.02	3.98	4.89E-02	EPA (1999)	1.40E+00	EPA (1999)
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	4.53	4.90	9.37E-02	Equation 1	3.64E+02	Equation 2[b]
Silvex (2,4,5-TP)	93-72-1	3.80	1.91	2.46E-01	Equation 1	9.25E+01	Equation 2[b]
Toxaphene	8001-35-2	5.50	5.00	2.56E-02	Equation 1	2.28E+03	Equation 2[b]
Inorganic Chemicals and Compounds							
	Metals						
Aluminum	7429-90-5	NA	NA	4.00E-03	EPA (1999)	2.20E-01	EPA (1999)
Antimony	7440-36-0	NA	NA	2.00E-01	EPA (1999)	2.20E-01	EPA (1999)
Arsenic	7440-38-2	NA	NA	3.60E-02	EPA (1999)	1.10E-01	EPA (1999)
Barium	7440-39-3	NA	NA	1.50E-01	EPA (1999)	2.20E-01	EPA (1999)
Beryllium	7440-41-7	NA	NA	1.00E-02	EPA (1999)	2.20E-01	EPA (1999)
Bismuth	7440-69-9	NA	NA	3.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Boron	7440-42-8	NA	NA	4.00E+00	Baes and others (1984)	3.21E-01	Average[d]
Cadmium	7440-43-9	NA	NA	3.64E-01	EPA (1999)	9.60E-01	EPA (1999)
Calcium	7440-70-2	NA	NA	3.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Chromium[e]	18540-29-9	NA	NA	7.50E-03	EPA (1999)	1.00E-02	EPA (1999)
Cobalt	7440-48-4	NA	NA	2.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Copper	7440-50-8	NA	NA	4.00E-01	EPA (1999)	4.00E-02	EPA (1999)
Iron	7439-89-6	NA	NA	4.00E-03	Baes and others (1984)	3.21E-01	Average[d]
Lead	7439-92-1	NA	NA	4.50E-02	EPA (1999)	3.00E-02	EPA (1999)
Lithium	7439-93-2	NA	NA	2.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Magnesium	7439-95-4	NA	NA	1.00E+00	Baes and others (1984)	3.21E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
gamma-BHC (Lindane)	58-89-9	1.32E-04	Equation 3	7.96E+01	Equation 2	2.74E-01	Equation 1
Heptachlor	76-44-8	2.60E-03	Equation 3	2.10E+04	EPA (1999)	4.89E-02	EPA (1999)
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	8.44E-04	Equation 3	3.64E+02	Equation 2	9.37E-02	Equation 1
Silvex (2,4,5-TP)	93-72-1	1.58E-04	Equation 3	9.25E+01	Equation 2[b]	2.46E-01	Equation 1
Toxaphene	8001-35-2	7.94E-03	Equation 3	2.28E+03	Equation 2	2.56E-02	Equation 1
Inorganic Chemicals and Compounds							
	Metals						
Aluminum	7429-90-5	1.50E-03	Baes and others (1984)	8.33E+02	EPA (1999)	4.00E-03	EPA (1999)
Antimony	7440-36-0	1.00E-03	Baes and others (1984)	1.48E+03	EPA (1999)	2.00E-01	EPA (1999)
Arsenic	7440-38-2	2.00E-03	Baes and others (1984)	2.93E+02	EPA (1999)	3.60E-02	EPA (1999)
Barium	7440-39-3	1.50E-04	Baes and others (1984)	2.60E+02	EPA (1999)	1.50E-01	EPA (1999)
Beryllium	7440-41-7	1.00E-03	Baes and others (1984)	1.41E+02	EPA (1999)	1.00E-02	EPA (1999)
Bismuth	7440-69-9	4.00E-04	Baes and others (1984)	4.06E+03	Average[d]	3.50E-02	Baes and others (1984)
Boron	7440-42-8	8.00E-04	Baes and others (1984)	4.06E+03	Average[d]	4.00E+00	Baes and others (1984)
Cadmium	7440-43-9	3.40E-03	Baes and others (1984)	7.82E+02	EPA (1999)	3.64E-01	EPA (1999)
Calcium	7440-70-2	7.00E-04	Baes and others (1984)	4.06E+03	Average[d]	3.50E+00	Baes and others (1984)
Chromium[e]	18540-29-9	5.51E-03	Baes and others (1984)	4.41E+03	EPA (1999)	7.50E-03	EPA (1999)
Cobalt	7440-48-4	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	2.00E-02	Baes and others (1984)
Copper	7440-50-8	1.00E-02	Baes and others (1984)	5.41E+02	EPA (1999)	4.00E-01	EPA (1999)
Iron	7439-89-6	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	4.00E-03	Baes and others (1984)
Lead	7439-92-1	3.00E-04	Baes and others (1984)	1.71E+03	EPA (1999)	4.50E-02	EPA (1999)
Lithium	7439-93-2	1.00E-02	Baes and others (1984)	4.06E+03	Average[d]	2.50E-02	Baes and others (1984)
Magnesium	7439-95-4	5.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E+00	Baes and others (1984)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
gamma-BHC (Lindane)	58-89-9	3.95E+02	Equation 4	7.96E+01	Equation 2
Heptachlor	76-44-8	5.52E+03	EPA (1999)	1.67E+00	EPA (1999)
Isodrin	465-73-6	No data	No data	No data	No data
Methoxychlor	72-43-5	2.06E+03	Equation 4	3.64E+02	Equation 2
Silvex (2,4,5-TP)	93-72-1	4.66E+02	Equation 4	9.25E+01	Equation 2[b]
Toxaphene	8001-35-2	1.13E+04	Equation 4	2.28E+03	Equation 2[b]
Inorganic Chemicals and Compounds					
	Metals				
Aluminum	7429-90-5	2.70E+00	EPA (1999)	9.00E-01	EPA (1999)
Antimony	7440-36-0	4.00E+01	EPA (1999)	9.00E-01	EPA (1999)
Arsenic	7440-38-2	1.14E+02	EPA (1999)	9.00E-01	EPA (1999)
Barium	7440-39-3	6.33E+02	EPA (1999)	9.00E-01	EPA (1999)
Beryllium	7440-41-7	6.20E+01	EPA (1999)	9.00E-01	EPA (1999)
Bismuth	7440-69-9	1.23E+03	Average[d]	8.93E-01	Average[d]
Boron	7440-42-8	1.23E+03	Average[d]	8.93E-01	Average[d]
Cadmium	7440-43-9	9.07E+02	EPA (1999)	3.40E+00	EPA (1999)
Calcium	7440-70-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Chromium[e]	18540-29-9	1.90E+01	EPA (1999)	3.90E-01	EPA (1999)
Cobalt	7440-48-4	1.23E+03	Average[d]	8.93E-01	Average[d]
Copper	7440-50-8	7.10E+02	EPA (1999)	3.00E-01	EPA (1999)
Iron	7439-89-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Lead	7439-92-1	9.00E-02	EPA (1999)	6.30E-01	EPA (1999)
Lithium	7439-93-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Magnesium	7439-95-4	1.23E+03	Average[d]	8.93E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Manganese	7439-96-5	NA	NA	2.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Mercury	7439-97-6	NA	NA	NA	NA	NA	NA
Mercury - Hg+2	7487-94-7	NA	NA	3.75E-02	EPA (1999)	4.00E-02	EPA (1999)
Methylmercury	22967-92-6	NA	NA	1.37E-01	EPA (1999)	8.50E+00	EPA (1999)
Molybdenum	7439-98-7	NA	NA	2.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Nickel	7440-02-0	NA	NA	3.20E-02	EPA (1999)	2.00E-02	EPA (1999)
Potassium	7440-09-7	NA	NA	1.00E+00	Baes and others (1984)	3.21E-01	Average[d]
Rhodium	7440-16-6	NA	NA	1.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Selenium	7782-49-2	NA	NA	1.60E-02	EPA (1999)	2.20E-01	EPA (1999)
Silicon	7440-21-3	NA	NA	3.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Silver	7440-22-4	NA	NA	4.00E-01	EPA (1999)	2.20E-01	EPA (1999)
Sodium	7440-23-5	NA	NA	7.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Strontium	7440-24-6	NA	NA	2.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Tantalum	7440-25-7	NA	NA	1.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Thallium	7440-28-0	NA	NA	4.00E-03	EPA (1999)	2.20E-01	EPA (1999)
Tin	7440-31-5	NA	NA	3.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Tungsten	7440-33-7	NA	NA	4.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Uranium	7440-61-1	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Vanadium	7440-62-2	NA	NA	5.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Yttrium	7440-65-5	NA	NA	1.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Zinc	7440-66-6	NA	NA	1.20E-12	EPA (1999)	5.60E-01	EPA (1999)
Zirconium	7440-67-7	NA	NA	2.00E-03	Baes and others (1984)	3.21E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Manganese	7439-96-5	4.00E-04	Baes and others (1984)	4.06E+03	Average[d]	2.50E-01	Baes and others (1984)
Mercury	7439-97-6	NA	NA	NA	NA	NA	NA
Mercury - Hg+2	7487-94-7	5.21E-03	EPA (1999)	2.48E+04	EPA (1999)	3.75E-02	EPA (1999)
Methylmercury	22967-92-6	7.81E-04	EPA (1999)	8.00E+04	EPA (1999)	1.37E-01	EPA (1999)
Molybdenum	7439-98-7	6.00E-03	Baes and others (1984)	4.06E+03	Average[c]	2.50E-01	Baes and others (1984)
Nickel	7440-02-0	6.00E-03	Baes and others (1984)	6.10E+01	EPA (1999)	3.20E-02	EPA (1999)
Potassium	7440-09-7	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	1.00E+00	Baes and others (1984)
Rhodium	7440-16-6	2.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.50E-01	Baes and others (1984)
Selenium	7782-49-2	1.90E-03	Baes and others (1984)	1.85E+03	EPA (1999)	1.60E-02	EPA (1999)
Silicon	7440-21-3	4.00E-05	Baes and others (1984)	4.06E+03	Average[d]	3.50E-01	Baes and others (1984)
Silver	7440-22-4	3.00E-03	Baes and others (1984)	1.07E+04	EPA (1999)	4.00E-01	EPA (1999)
Sodium	7440-23-5	5.50E-02	Baes and others (1984)	4.06E+03	Average[d]	7.50E-02	Baes and others (1984)
Strontium	7440-24-6	3.00E-04	Baes and others (1984)	4.06E+03	Average[d]	2.50E+00	Baes and others (1984)
Tantalum	7440-25-7	6.00E-04	Baes and others (1984)	4.06E+03	Average[d]	1.00E-02	Baes and others (1984)
Thallium	7440-28-0	4.00E-02	Baes and others (1984)	1.50E+04	EPA (1999)	4.00E-03	EPA (1999)
Tin	7440-31-5	8.00E-02	Baes and others (1984)	4.06E+03	Average[d]	3.00E-02	Baes and others (1984)
Tungsten	7440-33-7	4.50E-02	Baes and others (1984)	4.06E+03	Average[d]	4.50E-02	Baes and others (1984)
Uranium	7440-61-1	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Vanadium	7440-62-2	2.50E-03	Baes and others (1984)	4.06E+03	Average[d]	5.50E-03	Baes and others (1984)
Yttrium	7440-65-5	3.00E-04	Baes and others (1984)	4.06E+03	Average[d]	1.50E-02	Baes and others (1984)
Zinc	7440-66-6	1.00E-01	Baes and others (1984)	2.18E+03	EPA (1999)	1.20E-12	EPA (1999)
Zirconium	7440-67-7	5.50E-03	Baes and others (1984)	4.06E+03	Average[d]	2.00E-03	Baes and others (1984)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Manganese	7439-96-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Mercury	7439-97-6	NA	NA	NA	NA
Mercury - Hg+2	7487-94-7	3.53E+03	EPA (1999)	6.80E-02	EPA (1999)
Methylmercury	22967-92-6	1.12E+04	EPA (1999)	4.80E-01	EPA (1999)
Molybdenum	7439-98-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Nickel	7440-02-0	7.80E+01	EPA (1999)	9.00E-01	EPA (1999)
Potassium	7440-09-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Rhodium	7440-16-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Selenium	7782-49-2	1.29E+02	EPA (1999)	9.00E-01	EPA (1999)
Silicon	7440-21-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Silver	7440-22-4	8.77E+01	EPA (1999)	9.00E-01	EPA (1999)
Sodium	7440-23-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Strontium	7440-24-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Tantalum	7440-25-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Thallium	7440-28-0	1.00E+04	EPA (1999)	9.00E-01	EPA (1999)
Tin	7440-31-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Tungsten	7440-33-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium	7440-61-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Vanadium	7440-62-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Yttrium	7440-65-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Zinc	7440-66-6	2.06E+03	EPA (1999)	5.70E-01	EPA (1999)
Zirconium	7440-67-7	1.23E+03	Average[d]	8.93E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Non-metals and Anions							
Ammonia/Ammonium	7664-41-7	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Bromide	24959-67-9	NA	NA	1.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Chloride	16887-00-6	NA	NA	7.00E+01	Baes and others (1984)	3.21E-01	Average[d]
Cyanide	57-12-5	NA	NA	1.72E+00	Average[d]	1.12E+00	EPA (1999)
Fluoride	16984-48-8	NA	NA	6.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	NA	NA	1.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Nitrate	14797-55-8	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Nitrite	14797-65-0	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Phosphate	14265-44-2	NA	NA	3.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Phosphorus	7723-14-0	NA	NA	3.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Sulfate	14808-79-8	NA	NA	1.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Total Sulfur	63705-05-5	NA	NA	1.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Criteria Pollutants							
Carbon monoxide	630-08-0	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Nitrogen dioxide	10102-44-0	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Ozone	10028-15-6	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	NA	NA	1.72E+00	Average[d]	3.21E-01	Average[d]
Radionuclides							
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	NA	NA	3.50E-03	Baes and others (1984)	3.21E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Non-metals and Anions							
Ammonia/Ammonium	7664-41-7	1.95E-02	Average[d]	4.06E+03	Average[d]	1.72E+00	Average[d]
Bromide	24959-67-9	2.50E-02	Baes and others (1984)	4.06E+03	Average[d]	1.50E+00	Baes and others (1984)
Chloride	16887-00-6	8.00E-02	Baes and others (1984)	4.06E+03	Average[d]	7.00E+01	Baes and others (1984)
Cyanide	57-12-5	1.95E-02	Average[d]	2.20E+01	EPA (1999)	1.72E+00	Average[d]
Fluoride	16984-48-8	1.50E-01	Baes and others (1984)	4.06E+03	Average[d]	6.00E-02	Baes and others (1984)
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	7.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.50E-01	Baes and others (1984)
Nitrate	14797-55-8	7.50E-02	Baes and others (1984)	4.06E+03	Average[d]	1.72E+00	Average[d]
Nitrite	14797-65-0	7.50E-02	Baes and others (1984)	4.06E+03	Average[d]	1.72E+00	Average[d]
Phosphate	14265-44-2	5.50E-02	Baes and others (1984)	4.06E+03	Average[d]	3.50E+00	Baes and others (1984)
Phosphorus	7723-14-0	5.50E-02	Baes and others (1984)	4.06E+03	Average[d]	3.50E+00	Baes and others (1984)
Sulfate	14808-79-8	1.00E-01	Baes and others (1984)	4.06E+03	Average[d]	1.50E+00	Baes and others (1984)
Total Sulfur	63705-05-5	1.00E-01	Baes and others (1984)	4.06E+03	Average[d]	1.50E+00	Baes and others (1984)
Criteria Pollutants							
Carbon monoxide	630-08-0	1.95E-02	Average[d]	4.06E+03	Average[d]	1.72E+00	Average[d]
Nitrogen dioxide	10102-44-0	1.95E-02	Average[d]	4.06E+03	Average[d]	1.72E+00	Average[d]
Ozone	10028-15-6	1.95E-02	Average[d]	4.06E+03	Average[d]	1.72E+00	Average[d]
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	1.95E-02	Average[d]	4.06E+03	Average[d]	1.72E+00	Average[d]
Radionuclides							
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	2.50E-03	Baes and others (1984)	4.06E+03	Average[d]	3.50E-03	Baes and others (1984)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Non-metals and Anions					
Ammonia/Ammonium	7664-41-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Bromide	24959-67-9	1.23E+03	Average[d]	8.93E-01	Average[d]
Chloride	16887-00-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Cyanide	57-12-5	6.33E+02	EPA (1999)	9.00E-01	EPA (1999)
Fluoride	16984-48-8	1.23E+03	Average[d]	8.93E-01	Average[d]
Hydroxide	14280-30-9	NA	NA	NA	NA
Iodine	7553-56-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Nitrate	14797-55-8	1.23E+03	Average[d]	8.93E-01	Average[d]
Nitrite	14797-65-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Phosphate	14265-44-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Phosphorus	7723-14-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Sulfate	14808-79-8	1.23E+03	Average[d]	8.93E-01	Average[d]
Total Sulfur	63705-05-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Criteria Pollutants					
Carbon monoxide	630-08-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Nitrogen dioxide	10102-44-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Ozone	10028-15-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Particulate matter	No CAS #	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Radionuclides					
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA
Actinium-227	14952-40-0	1.23E+03	Average[d]	8.93E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Americium-241	14596-10-2	NA	NA	5.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Americium-243	14993-75-0	NA	NA	5.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Antimony-125	14234-35-6	NA	NA	2.00E-01	EPA (1999)	3.21E-01	Average[d]
Barium-137m	13981-97-0	NA	NA	1.50E-01	EPA (1999)	3.21E-01	Average[d]
Cadmium-113m	14336-66-4	NA	NA	3.64E-01	EPA (1999)	9.60E-01	EPA (1999)
Carbon-14	14762-75-5	NA	NA	NA	Baes and others (1984)	NA	NA
Cesium-134	13967-70-9	NA	NA	8.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Cesium-137	10045-97-3	NA	NA	8.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Cobalt-60	10198-40-0	NA	NA	2.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Curium-242	15510-73-3	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Curium-243	15757-87-6	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Curium-244	13981-15-2	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Europium-152	14683-23-9	NA	NA	1.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Europium-154	15585-10-1	NA	NA	1.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Europium-155	14391-16-3	NA	NA	1.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Iodine-129	15046-84-1	NA	NA	1.50E-01	Baes and others (1984)	3.21E-01	Average[d]
Neptunium-237	13994-20-2	NA	NA	1.00E-01	Baes and others (1984)	3.21E-01	Average[d]
Nickel-59	14336-70-0	NA	NA	3.20E-02	EPA (1999)	2.00E-02	EPA (1999)
Nickel-63	13981-37-8	NA	NA	3.20E-02	EPA (1999)	2.00E-02	EPA (1999)
Niobium-93m	7440-03-1[f]	NA	NA	2.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Plutonium-238	13981-16-3	NA	NA	4.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Plutonium-239	15117-48-3	NA	NA	4.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Plutonium-240	14119-33-6	NA	NA	4.50E-04	Baes and others (1984)	3.21E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Americium-241	14596-10-2	3.50E-06	Baes and others (1984)	4.06E+03	Average[d]	5.50E-03	Baes and others (1984)
Americium-243	14993-75-0	3.50E-06	Baes and others (1984)	4.06E+03	Average[d]	5.50E-03	Baes and others (1984)
Antimony-125	14234-35-6	1.00E-03	Baes and others (1984)	1.48E+03	EPA (1999)	2.00E-01	EPA (1999)
Barium-137m	13981-97-0	1.50E-04	Baes and others (1984)	2.60E+02	EPA (1999)	1.50E-01	EPA (1999)
Cadmium-113m	14336-66-4	1.20E-04	Baes and others (1984)	7.82E+02	EPA (1999)	3.64E-01	EPA (1999)
Carbon-14	14762-75-5	NA	NA	NA	NA	NA	Baes and others (1984)
Cesium-134	13967-70-9	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	8.00E-02	Baes and others (1984)
Cesium-137	10045-97-3	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	8.00E-02	Baes and others (1984)
Cobalt-60	10198-40-0	2.00E-02	Baes and others (1984)	4.06E+03	Average[d]	2.00E-02	Baes and others (1984)
Curium-242	15510-73-3	3.50E-06	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Curium-243	15757-87-6	3.50E-06	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Curium-244	13981-15-2	3.50E-06	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Europium-152	14683-23-9	5.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E-02	Baes and others (1984)
Europium-154	15585-10-1	5.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E-02	Baes and others (1984)
Europium-155	14391-16-3	5.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E-02	Baes and others (1984)
Iodine-129	15046-84-1	7.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.50E-01	Baes and others (1984)
Neptunium-237	13994-20-2	5.50E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E-01	Baes and others (1984)
Nickel-59	14336-70-0	6.00E-03	Baes and others (1984)	6.10E+01	EPA (1999)	3.20E-02	EPA (1999)
Nickel-63	13981-37-8	6.00E-03	Baes and others (1984)	6.10E+01	EPA (1999)	3.20E-02	EPA (1999)
Niobium-93m	7440-03-1[f]	2.50E-01	Baes and others (1984)	4.06E+03	Average[d]	2.00E-02	Baes and others (1984)
Plutonium-238	13981-16-3	5.00E-07	Baes and others (1984)	4.06E+03	Average[d]	4.50E-04	Baes and others (1984)
Plutonium-239	15117-48-3	5.00E-07	Baes and others (1984)	4.06E+03	Average[d]	4.50E-04	Baes and others (1984)
Plutonium-240	14119-33-6	5.00E-07	Baes and others (1984)	4.06E+03	Average[d]	4.50E-04	Baes and others (1984)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Americium-241	14596-10-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Americium-243	14993-75-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Antimony-125	14234-35-6	4.00E+01	EPA (1999)	9.00E-01	EPA (1999)
Barium-137m	13981-97-0	1.23E+03	EPA (1999)	9.00E-01	EPA (1999)
Cadmium-113m	14336-66-4	9.07E+02	EPA (1999)	3.40E+00	EPA (1999)
Carbon-14	14762-75-5	NA	NA	NA	NA
Cesium-134	13967-70-9	1.23E+03	Average[d]	8.93E-01	Average[d]
Cesium-137	10045-97-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Cobalt-60	10198-40-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Curium-242	15510-73-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Curium-243	15757-87-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Curium-244	13981-15-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Europium-152	14683-23-9	1.23E+03	Average[d]	8.93E-01	Average[d]
Europium-154	15585-10-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Europium-155	14391-16-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Iodine-129	15046-84-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Neptunium-237	13994-20-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Nickel-59	14336-70-0	7.80E+01	EPA (1999)	8.93E-01	EPA (1999)
Nickel-63	13981-37-8	7.80E+01	EPA (1999)	8.93E-01	EPA (1999)
Niobium-93m	7440-03-1[m]	1.23E+03	Average[d]	8.93E-01	Average[d]
Plutonium-238	13981-16-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Plutonium-239	15117-48-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Plutonium-240	14119-33-6	1.23E+03	Average[d]	8.93E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Log K_{oc}[a]	SPv (kg dry soil/kg dry tissue)	Source	BAF-S (kg dry soil/ kg tissue)	Source
Plutonium-241	14119-32-5	NA	NA	4.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Plutonium-242	13982-10-0	NA	NA	4.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Protactinium-231	14331-85-2	NA	NA	2.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Radium-226	13982-63-3	NA	NA	1.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Radium-228	15262-20-1	NA	NA	1.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Ruthenium-106	13967-48-1	NA	NA	7.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Samarium-151	15715-94-3	NA	NA	1.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Selenium-79	15758-45-9	NA	NA	2.50E-02	EPA (1999)	3.21E-01	Average[d]
Strontium-90	10098-97-2	NA	NA	2.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Technetium-99	14133-76-7	NA	NA	9.50E+00	Baes and others (1984)	3.21E-01	Average[d]
Thorium-229	15594-54-4	NA	NA	8.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Thorium-232	7440-29-1	NA	NA	8.50E-04	Baes and others (1984)	3.21E-01	Average[d]
Tin-126	15832-50-5	NA	NA	3.00E-02	Baes and others (1984)	3.21E-01	Average[d]
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Uranium-233	13968-55-3	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Uranium-234	13966-29-5	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Uranium-235	15117-96-1	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Uranium-236	13982-70-2	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Uranium-238	7440-61-1	NA	NA	8.50E-03	Baes and others (1984)	3.21E-01	Average[d]
Yttrium-90	10098-91-6	NA	NA	1.50E-02	Baes and others (1984)	3.21E-01	Average[d]
Zirconium-93	15751-77-6	NA	NA	2.00E-03	Baes and others (1984)	3.21E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	Mammal Ba ([mg/kg tissue] / [mg ingested /day])	Source	WP (L/kg tissue)	Source	SP (kg dry sediment/ kg dry tissue)	Source
Plutonium-241	14119-32-5	5.00E-07	Baes and others (1984)	4.06E+03	Average[d]	4.50E-04	Baes and others (1984)
Plutonium-242	13982-10-0	5.00E-07	Baes and others (1984)	4.06E+03	Average[d]	4.50E-04	Baes and others (1984)
Protactinium-231	14331-85-2	1.00E-05	Baes and others (1984)	4.06E+03	Average[d]	2.50E-03	Baes and others (1984)
Radium-226	13982-63-3	2.50E-04	Baes and others (1984)	4.06E+03	Average[d]	1.50E-02	Baes and others (1984)
Radium-228	15262-20-1	2.50E-04	Baes and others (1984)	4.06E+03	Average[d]	1.50E-02	Baes and others (1984)
Ruthenium-106	13967-48-1	2.00E-03	Baes and others (1984)	4.06E+03	Average[d]	7.50E-02	Baes and others (1984)
Samarium-151	15715-94-3	5.00E-03	Baes and others (1984)	4.06E+03	Average[d]	1.00E-02	Baes and others (1984)
Selenium-79	15758-45-9	1.50E-02	Baes and others (1984)	1.85E+03	EPA (1999)	2.50E-02	EPA (1999)
Strontium-90	10098-97-2	3.00E-04	Baes and others (1984)	4.06E+03	Average[d]	2.50E+00	Baes and others (1984)
Technetium-99	14133-76-7	8.50E-03	Baes and others (1984)	4.06E+03	Average[d]	9.50E+00	Baes and others (1984)
Thorium-229	15594-54-4	6.00E-06	Baes and others (1984)	4.06E+03	Average[d]	8.50E-04	Baes and others (1984)
Thorium-232	7440-29-1	6.00E-06	Baes and others (1984)	4.06E+03	Average[d]	8.50E-04	Baes and others (1984)
Tin-126	15832-50-5	8.00E-02	Baes and others (1984)	4.06E+03	Average[d]	3.00E-02	Baes and others (1984)
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Uranium-233	13968-55-3	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Uranium-234	13966-29-5	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Uranium-235	15117-96-1	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Uranium-236	13982-70-2	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Uranium-238	7440-61-1	2.00E-04	Baes and others (1984)	4.06E+03	Average[d]	8.50E-03	Baes and others (1984)
Yttrium-90	10098-91-6	3.00E-04	Baes and others (1984)	4.06E+03	Average[d]	1.50E-02	Baes and others (1984)
Zirconium-93	15751-77-6	5.50E-03	Baes and others (1984)	4.06E+03	Average[d]	2.00E-03	Baes and others (1984)

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Constituent of Potential Concern	CAS Registry Number	BCF_{fish} (L/kg tissue)	Source	BASF (kg dry sediment/ kg tissue)	Source
Plutonium-241	14119-32-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Plutonium-242	13982-10-0	1.23E+03	Average[d]	8.93E-01	Average[d]
Protactinium-231	14331-85-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Radium-226	13982-63-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Radium-228	15262-20-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Ruthenium-106	13967-48-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Samarium-151	15715-94-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Selenium-79	15758-45-9	1.29E+02	EPA (1999)	9.00E-01	EPA (1999)
Strontium-90	10098-97-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Technetium-99	14133-76-7	1.23E+03	Average[d]	8.93E-01	Average[d]
Thorium-229	15594-54-4	1.23E+03	Average[d]	8.93E-01	Average[d]
Thorium-232	7440-29-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Tin-126	15832-50-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Tritium	10028-17-8	NA	NA	NA	NA
Uranium-232	14158-29-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium-233	13968-55-3	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium-234	13966-29-5	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium-235	15117-96-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium-236	13982-70-2	1.23E+03	Average[d]	8.93E-01	Average[d]
Uranium-238	7440-61-1	1.23E+03	Average[d]	8.93E-01	Average[d]
Yttrium-90	10098-91-6	1.23E+03	Average[d]	8.93E-01	Average[d]
Zirconium-93	15751-77-6	1.23E+03	Average[d]	8.93E-01	Average[d]

Table C2-1 Ecological Transfer Factors for COPCs and ROPCs

Notes/Sources

NA = Not applicable.

[a] From Appendix B, Table B-1.

[b] BAF-S values for which equilibrium partitioning approach will be used.

[c] Values for Aroclor-1254 were used for polychlorinated biphenyl mixtures.

[d] Arithmetic average of reported values for inorganics (EPA 1999).

[e] Values for Cr(VI) were used for calculations.

[f] Chemical Abstracts Service Registry number for niobium metal.

Equation 1: $\log BCF = 1.588 - (0.578 \times \log K_{ow})$ (Travis and Arms 1988) as referenced in EPA (1999).

Equation 2: $\log BCF = 0.819 \times \log K_{ow} - 1.146$ (Southworth, Beauchamp, and Schmieder 1978) as referenced in EPA (1999).

Equation 3: $\log Ba = \log K_{ow} - 7.6$ (Travis and Arms 1988) as referenced in EPA (1999).

Equation 4: $\log BCF = 0.91 \times \log K_{ow} - 1.975 \times \log(6.8E\text{-}07 \times K_{ow} + 1.0) - 0.786$ (Bintein and others 1993) as referenced in EPA (1999).

EPA (US Environmental Protection Agency). 1999. *Screening-Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Vol. III*. EPA 530-D-99-001C. Office of Solid Waste and Emergency Response, US Environmental Protection Agency, Washington, DC, USA.

Baes CF, III, Sharp RD, Sjoren AL, and Shor RW. 1984. *A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides through Agriculture*. ORNL-5786. Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA.

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Organic Compounds								
Aromatic Halogenated Hydrocarbons								
2,3,4,6-Tetrachlorophenol	58-90-2	4.30	5.02E-04	4.02E-04	2.32E-05	2.18E-07	8.81E-07	3.10E-07
4-Chloro-3-methylphenol	59-50-7	3.10	3.16E-05	2.53E-05	1.46E-06	1.37E-08	5.55E-08	1.95E-08
Aromatic Nonhalogenated Hydrocarbons								
2-Nitrotoluene	88-72-2	2.30	5.01E-06	4.01E-06	2.32E-07	2.17E-09	8.79E-09	3.09E-09
4-Nitrobiphenyl	92-93-3	3.77	1.48E-04	1.18E-04	6.84E-06	6.41E-08	2.60E-07	9.13E-08
Benzaldehyde	100-52-7	1.48	7.54E-07	6.03E-07	3.48E-08	3.27E-10	1.32E-09	4.65E-10
Benzene	71-43-2	2.14	3.44E-06	2.75E-06	1.59E-07	1.49E-09	6.04E-09	2.12E-09
Benzyl alcohol	100-51-6	1.10	3.16E-07	2.53E-07	1.46E-08	1.37E-10	5.55E-10	1.95E-10
Ethyl benzene	100-41-4	3.12	3.34E-05	2.67E-05	1.54E-06	1.45E-08	5.86E-08	2.06E-08
m-Xylene	108-38-3	3.20	3.99E-05	3.20E-05	1.85E-06	1.73E-08	7.01E-08	2.46E-08
o-Xylene	95-47-6	3.13	3.39E-05	2.71E-05	1.57E-06	1.47E-08	5.95E-08	2.09E-08
p-Xylene	106-42-3	3.17	3.72E-05	2.97E-05	1.72E-06	1.61E-08	6.52E-08	2.29E-08
Styrene	100-42-5	2.93	2.13E-05	1.71E-05	9.86E-07	9.25E-09	3.74E-08	1.32E-08
Toluene	108-88-3	2.67	1.17E-05	9.34E-06	5.40E-07	5.06E-09	2.05E-08	7.21E-09
Non-aromatic Nonhalogenated Hydrocarbons								
1,2-Epoxybutane	106-88-7	0.86	1.82E-07	1.46E-07	8.41E-09	7.89E-11	3.19E-10	1.12E-10
1,3-Butadiene	106-99-0	1.99	2.45E-06	1.96E-06	1.13E-07	1.06E-09	4.31E-09	1.51E-09
1,4-Dioxane	123-91-1	-0.27	1.36E-08	1.09E-08	6.27E-10	5.88E-12	2.38E-11	8.37E-12
1-Methylpropyl alcohol	78-92-2	0.61	1.02E-07	8.19E-08	4.73E-09	4.44E-11	1.80E-10	6.31E-11
1-Nitropropane	108-03-2	0.87	1.86E-07	1.49E-07	8.61E-09	8.07E-11	3.27E-10	1.15E-10
2,2,4-Trimethylpentane	540-84-1	5.02	2.63E-03	2.10E-03	1.22E-04	1.14E-06	4.62E-06	1.62E-06
2-Butanone	78-93-3	0.28	4.80E-08	3.84E-08	2.22E-09	2.08E-11	8.42E-11	2.96E-11
2-Butenaldehyde (2-Butenal)	4170-30-3	0.55	8.91E-08	7.13E-08	4.12E-09	3.86E-11	1.56E-10	5.50E-11
2-Ethoxyethanol	110-80-5	-0.10	2.00E-08	1.60E-08	9.22E-10	8.65E-12	3.50E-11	1.23E-11
2-Heptanone	110-43-0	1.98	2.40E-06	1.92E-06	1.11E-07	1.04E-09	4.21E-09	1.48E-09

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T$_s$) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Organic Compounds									
Aromatic Halogenated Hydrocarbons									
2,3,4,6-Tetrachlorophenol	58-90-2	2.65E-07	2.47E-07	0.00E+00	7.65E-07	4.63E-07	0.00E+00	0.00E+00	0.00E+00
4-Chloro-3-methylphenol	59-50-7	1.67E-08	1.56E-08	0.00E+00	4.82E-08	2.92E-08	0.00E+00	0.00E+00	0.00E+00
Aromatic Nonhalogenated Hydrocarbons									
2-Nitrotoluene	88-72-2	2.65E-09	2.47E-09	0.00E+00	7.64E-09	4.62E-09	0.00E+00	0.00E+00	0.00E+00
4-Nitrobiphenyl	92-93-3	7.81E-08	7.28E-08	0.00E+00	2.25E-07	1.36E-07	0.00E+00	0.00E+00	0.00E+00
Benzaldehyde	100-52-7	3.98E-10	3.71E-10	0.00E+00	1.15E-09	6.95E-10	0.00E+00	0.00E+00	0.00E+00
Benzene	71-43-2	1.82E-09	1.69E-09	0.00E+00	5.24E-09	3.17E-09	0.00E+00	0.00E+00	0.00E+00
Benzyl alcohol	100-51-6	1.67E-10	1.56E-10	0.00E+00	4.82E-10	2.92E-10	0.00E+00	0.00E+00	0.00E+00
Ethyl benzene	100-41-4	1.76E-08	1.64E-08	0.00E+00	5.09E-08	3.08E-08	0.00E+00	0.00E+00	0.00E+00
m-Xylene	108-38-3	2.11E-08	1.96E-08	0.00E+00	6.09E-08	3.68E-08	0.00E+00	0.00E+00	0.00E+00
o-Xylene	95-47-6	1.79E-08	1.67E-08	0.00E+00	5.17E-08	3.13E-08	0.00E+00	0.00E+00	0.00E+00
p-Xylene	106-42-3	1.96E-08	1.83E-08	0.00E+00	5.66E-08	3.43E-08	0.00E+00	0.00E+00	0.00E+00
Styrene	100-42-5	1.13E-08	1.05E-08	0.00E+00	3.25E-08	1.97E-08	0.00E+00	0.00E+00	0.00E+00
Toluene	108-88-3	6.17E-09	5.75E-09	0.00E+00	1.78E-08	1.08E-08	0.00E+00	0.00E+00	0.00E+00
Non-aromatic Nonhalogenated Hydrocarbons									
1,2-Epoxybutane	106-88-7	9.61E-11	8.95E-11	0.00E+00	2.77E-10	1.68E-10	0.00E+00	0.00E+00	0.00E+00
1,3-Butadiene	106-99-0	1.30E-09	1.21E-09	0.00E+00	3.74E-09	2.26E-09	0.00E+00	0.00E+00	0.00E+00
1,4-Dioxane	123-91-1	7.16E-12	6.67E-12	0.00E+00	2.07E-11	1.25E-11	0.00E+00	0.00E+00	0.00E+00
1-Methylpropyl alcohol	78-92-2	5.40E-11	5.03E-11	0.00E+00	1.56E-10	9.44E-11	0.00E+00	0.00E+00	0.00E+00
1-Nitropropane	108-03-2	9.83E-11	9.16E-11	0.00E+00	2.84E-10	1.72E-10	0.00E+00	0.00E+00	0.00E+00
2,2,4-Trimethylpentane	540-84-1	1.39E-06	1.29E-06	0.00E+00	4.01E-06	2.43E-06	0.00E+00	0.00E+00	0.00E+00
2-Butanone	78-93-3	2.53E-11	2.36E-11	0.00E+00	7.31E-11	4.42E-11	0.00E+00	0.00E+00	0.00E+00
2-Butenaldehyde (2-Butenal)	4170-30-3	4.70E-11	4.38E-11	0.00E+00	1.36E-10	8.22E-11	0.00E+00	0.00E+00	0.00E+00
2-Ethoxyethanol	110-80-5	1.05E-11	9.82E-12	0.00E+00	3.04E-11	1.84E-11	0.00E+00	0.00E+00	0.00E+00
2-Heptanone	110-43-0	1.27E-09	1.18E-09	0.00E+00	3.66E-09	2.21E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
2-Hexanone	591-78-6	1.38	6.03E-07	4.82E-07	2.79E-08	2.61E-10	1.06E-09	3.72E-10
2-Methoxyethanol	109-86-4	-0.77	4.27E-09	3.41E-09	1.97E-10	1.85E-12	7.49E-12	2.63E-12
2-Methyl-2-propanol	75-65-0	0.35	5.62E-08	4.50E-08	2.60E-09	2.44E-11	9.87E-11	3.47E-11
2-Methyl-2-propenenitrile	126-98-7	0.54	8.72E-08	6.97E-08	4.03E-09	3.78E-11	1.53E-10	5.38E-11
2-Methylaziridine	75-55-8	-0.60	6.31E-09	5.05E-09	2.92E-10	2.74E-12	1.11E-11	3.89E-12
2-Methylpropyl alcohol	78-83-1	0.76	1.45E-07	1.16E-07	6.68E-09	6.27E-11	2.54E-10	8.92E-11
2-Pentanone	107-87-9	0.91	2.04E-07	1.63E-07	9.44E-09	8.85E-11	3.58E-10	1.26E-10
2-Propanone (Acetone)	67-64-1	-0.22	1.51E-08	1.21E-08	6.98E-10	6.54E-12	2.65E-11	9.31E-12
2-Propene-1-ol	107-18-6	0.17	3.72E-08	2.97E-08	1.72E-09	1.61E-11	6.52E-11	2.29E-11
2-Propyl alcohol	67-63-0	0.05	2.82E-08	2.25E-08	1.30E-09	1.22E-11	4.95E-11	1.74E-11
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	0.99	2.45E-07	1.96E-07	1.13E-08	1.06E-10	4.31E-10	1.51E-10
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	1.19	3.89E-07	3.11E-07	1.80E-08	1.69E-10	6.83E-10	2.40E-10
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.72	1.32E-06	1.05E-06	6.09E-08	5.72E-10	2.31E-09	8.13E-10
Acetaldehyde	75-07-0	-0.22	1.51E-08	1.21E-08	6.99E-10	6.56E-12	2.65E-11	9.33E-12
Acetamide	60-35-5	-1.26	1.38E-09	1.10E-09	6.38E-11	5.98E-13	2.42E-12	8.52E-13
Acetic acid	64-19-7	-0.17	1.70E-08	1.36E-08	7.85E-10	7.36E-12	2.98E-11	1.05E-11
Acetic acid ethyl ester	141-78-6	0.73	1.35E-07	1.08E-07	6.24E-09	5.85E-11	2.37E-10	8.32E-11
Acetic acid n-butyl ester	123-86-4	1.73	1.35E-06	1.08E-06	6.24E-08	5.85E-10	2.37E-09	8.32E-10
Acetonitrile	75-05-8	-0.34	1.15E-08	9.18E-09	5.31E-10	4.98E-12	2.01E-11	7.08E-12
Acrolein	107-02-8	-0.01	2.46E-08	1.97E-08	1.14E-09	1.07E-11	4.32E-11	1.52E-11
Acrylonitrile	107-13-1	0.25	4.47E-08	3.58E-08	2.07E-09	1.94E-11	7.84E-11	2.76E-11
Bis(isopropyl)ether	108-20-3	1.56	9.12E-07	7.30E-07	4.22E-08	3.95E-10	1.60E-09	5.63E-10

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
2-Hexanone	591-78-6	3.18E-10	2.96E-10	0.00E+00	9.18E-10	5.56E-10	0.00E+00	0.00E+00	0.00E+00
2-Methoxyethanol	109-86-4	2.25E-12	2.10E-12	0.00E+00	6.50E-12	3.93E-12	0.00E+00	0.00E+00	0.00E+00
2-Methyl-2-propanol	75-65-0	2.97E-11	2.77E-11	0.00E+00	8.57E-11	5.19E-11	0.00E+00	0.00E+00	0.00E+00
2-Methyl-2-propenenitrile	126-98-7	4.60E-11	4.29E-11	0.00E+00	1.33E-10	8.04E-11	0.00E+00	0.00E+00	0.00E+00
2-Methylaziridine	75-55-8	3.33E-12	3.10E-12	0.00E+00	9.61E-12	5.82E-12	0.00E+00	0.00E+00	0.00E+00
2-Methylpropyl alcohol	78-83-1	7.63E-11	7.11E-11	0.00E+00	2.20E-10	1.33E-10	0.00E+00	0.00E+00	0.00E+00
2-Pentanone	107-87-9	1.08E-10	1.00E-10	0.00E+00	3.11E-10	1.88E-10	0.00E+00	0.00E+00	0.00E+00
2-Propanone (Acetone)	67-64-1	7.97E-12	7.43E-12	0.00E+00	2.30E-11	1.39E-11	0.00E+00	0.00E+00	0.00E+00
2-Propene-1-ol	107-18-6	1.96E-11	1.83E-11	0.00E+00	5.66E-11	3.43E-11	0.00E+00	0.00E+00	0.00E+00
2-Propyl alcohol	67-63-0	1.49E-11	1.39E-11	0.00E+00	4.29E-11	2.60E-11	0.00E+00	0.00E+00	0.00E+00
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	1.30E-10	1.21E-10	0.00E+00	3.74E-10	2.26E-10	0.00E+00	0.00E+00	0.00E+00
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	2.06E-10	1.92E-10	0.00E+00	5.93E-10	3.59E-10	0.00E+00	0.00E+00	0.00E+00
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	6.96E-10	6.49E-10	0.00E+00	2.01E-09	1.22E-09	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75-07-0	7.98E-12	7.44E-12	0.00E+00	2.30E-11	1.39E-11	0.00E+00	0.00E+00	0.00E+00
Acetamide	60-35-5	7.29E-13	6.79E-13	0.00E+00	2.10E-12	1.27E-12	0.00E+00	0.00E+00	0.00E+00
Acetic acid	64-19-7	8.96E-12	8.36E-12	0.00E+00	2.59E-11	1.57E-11	0.00E+00	0.00E+00	0.00E+00
Acetic acid ethyl ester	141-78-6	7.12E-11	6.64E-11	0.00E+00	2.06E-10	1.24E-10	0.00E+00	0.00E+00	0.00E+00
Acetic acid n-butyl ester	123-86-4	7.12E-10	6.64E-10	0.00E+00	2.06E-09	1.24E-09	0.00E+00	0.00E+00	0.00E+00
Acetonitrile	75-05-8	6.06E-12	5.65E-12	0.00E+00	1.75E-11	1.06E-11	0.00E+00	0.00E+00	0.00E+00
Acrolein	107-02-8	1.30E-11	1.21E-11	0.00E+00	3.75E-11	2.27E-11	0.00E+00	0.00E+00	0.00E+00
Acrylonitrile	107-13-1	2.36E-11	2.20E-11	0.00E+00	6.81E-11	4.12E-11	0.00E+00	0.00E+00	0.00E+00
Bis(isopropyl)ether	108-20-3	4.81E-10	4.49E-10	0.00E+00	1.39E-09	8.41E-10	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Butane	106-97-8	2.89	1.95E-05	1.56E-05	9.01E-07	8.45E-09	3.42E-08	1.20E-08
Carbon disulfide	75-15-0	2.00	2.51E-06	2.01E-06	1.16E-07	1.09E-09	4.41E-09	1.55E-09
Cyanogen	460-19-5	0.07	2.95E-08	2.36E-08	1.36E-09	1.28E-11	5.18E-11	1.82E-11
Cyclohexane	110-82-7	3.44	6.92E-05	5.53E-05	3.20E-06	3.00E-08	1.21E-07	4.27E-08
Cyclohexanone	108-94-1	0.81	1.62E-07	1.30E-07	7.50E-09	7.03E-11	2.85E-10	1.00E-10
Cyclohexene	110-83-8	2.86	1.82E-05	1.46E-05	8.41E-07	7.89E-09	3.19E-08	1.12E-08
Cyclopentane	287-92-3	3.00	2.51E-05	2.01E-05	1.16E-06	1.09E-08	4.41E-08	1.55E-08
Ethyl alcohol	64-17-5	-0.31	1.23E-08	9.84E-09	5.69E-10	5.33E-12	2.16E-11	7.59E-12
Ethyl ether	60-29-7	0.89	1.95E-07	1.56E-07	9.01E-09	8.45E-11	3.42E-10	1.20E-10
Ethyl methacrylate	97-63-2	1.59	9.77E-07	7.82E-07	4.52E-08	4.24E-10	1.71E-09	6.03E-10
Formaldehyde	50-00-0	0.34	5.56E-08	4.45E-08	2.57E-09	2.41E-11	9.76E-11	3.43E-11
Formamide	75-12-7	-1.51	7.76E-10	6.21E-10	3.59E-11	3.37E-13	1.36E-12	4.79E-13
Formic acid	64-18-6	-0.54	7.28E-09	5.83E-09	3.37E-10	3.16E-12	1.28E-11	4.49E-12
Formic acid, methyl ester	107-31-3	-0.26	1.37E-08	1.09E-08	6.32E-10	5.93E-12	2.40E-11	8.44E-12
Glycidylaldehyde	765-34-4	-0.12	1.91E-08	1.52E-08	8.81E-10	8.26E-12	3.34E-11	1.18E-11
Methyl acetate	79-20-9	0.46	7.24E-08	5.79E-08	3.35E-09	3.14E-11	1.27E-10	4.47E-11
Methyl alcohol	67-56-1	-0.71	4.90E-09	3.92E-09	2.26E-10	2.12E-12	8.60E-12	3.02E-12
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	0.79	1.55E-07	1.24E-07	7.16E-09	6.71E-11	2.72E-10	9.56E-11
Methyl tert-butyl ether	1634-04-4	0.94	2.19E-07	1.75E-07	1.01E-08	9.48E-11	3.84E-10	1.35E-10
Methylacetylene	74-99-7	0.94	2.19E-07	1.75E-07	1.01E-08	9.48E-11	3.84E-10	1.35E-10
Methylcyclohexane	108-87-2	4.10	3.16E-04	2.53E-04	1.46E-05	1.37E-07	5.55E-07	1.95E-07
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	0.88	1.91E-07	1.52E-07	8.81E-09	8.26E-11	3.34E-10	1.18E-10
n-Heptane	142-82-5	4.66	1.15E-03	9.19E-04	5.31E-05	4.98E-07	2.01E-06	7.08E-07
n-Hexane	110-54-3	4.11	3.24E-04	2.59E-04	1.50E-05	1.40E-07	5.68E-07	2.00E-07
Nitromethane	75-52-5	-0.35	1.12E-08	8.98E-09	5.19E-10	4.86E-12	1.97E-11	6.92E-12

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Butane	106-97-8	1.03E-08	9.59E-09	0.00E+00	2.97E-08	1.80E-08	0.00E+00	0.00E+00	0.00E+00
Carbon disulfide	75-15-0	1.33E-09	1.24E-09	0.00E+00	3.83E-09	2.32E-09	0.00E+00	0.00E+00	0.00E+00
Cyanogen	460-19-5	1.56E-11	1.45E-11	0.00E+00	4.50E-11	2.72E-11	0.00E+00	0.00E+00	0.00E+00
Cyclohexane	110-82-7	3.65E-08	3.40E-08	0.00E+00	1.05E-07	6.38E-08	0.00E+00	0.00E+00	0.00E+00
Cyclohexanone	108-94-1	8.56E-11	7.98E-11	0.00E+00	2.47E-10	1.50E-10	0.00E+00	0.00E+00	0.00E+00
Cyclohexene	110-83-8	9.61E-09	8.95E-09	0.00E+00	2.77E-08	1.68E-08	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	287-92-3	1.33E-08	1.24E-08	0.00E+00	3.83E-08	2.32E-08	0.00E+00	0.00E+00	0.00E+00
Ethyl alcohol	64-17-5	6.49E-12	6.05E-12	0.00E+00	1.87E-11	1.13E-11	0.00E+00	0.00E+00	0.00E+00
Ethyl ether	60-29-7	1.03E-10	9.59E-11	0.00E+00	2.97E-10	1.80E-10	0.00E+00	0.00E+00	0.00E+00
Ethyl methacrylate	97-63-2	5.16E-10	4.81E-10	0.00E+00	1.49E-09	9.01E-10	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50-00-0	2.93E-11	2.74E-11	0.00E+00	8.47E-11	5.13E-11	0.00E+00	0.00E+00	0.00E+00
Formamide	75-12-7	4.10E-13	3.82E-13	0.00E+00	1.18E-12	7.16E-13	0.00E+00	0.00E+00	0.00E+00
Formic acid	64-18-6	3.85E-12	3.58E-12	0.00E+00	1.11E-11	6.72E-12	0.00E+00	0.00E+00	0.00E+00
Formic acid, methyl ester	107-31-3	7.22E-12	6.73E-12	0.00E+00	2.08E-11	1.26E-11	0.00E+00	0.00E+00	0.00E+00
Glycidylaldehyde	765-34-4	1.01E-11	9.37E-12	0.00E+00	2.90E-11	1.76E-11	0.00E+00	0.00E+00	0.00E+00
Methyl acetate	79-20-9	3.82E-11	3.56E-11	0.00E+00	1.10E-10	6.68E-11	0.00E+00	0.00E+00	0.00E+00
Methyl alcohol	67-56-1	2.59E-12	2.41E-12	0.00E+00	7.46E-12	4.52E-12	0.00E+00	0.00E+00	0.00E+00
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	8.18E-11	7.62E-11	0.00E+00	2.36E-10	1.43E-10	0.00E+00	0.00E+00	0.00E+00
Methyl tert-butyl ether	1634-04-4	1.15E-10	1.08E-10	0.00E+00	3.33E-10	2.02E-10	0.00E+00	0.00E+00	0.00E+00
Methylacetylene	74-99-7	1.15E-10	1.08E-10	0.00E+00	3.33E-10	2.02E-10	0.00E+00	0.00E+00	0.00E+00
Methylcyclohexane	108-87-2	1.67E-07	1.56E-07	0.00E+00	4.82E-07	2.92E-07	0.00E+00	0.00E+00	0.00E+00
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	1.01E-10	9.37E-11	0.00E+00	2.90E-10	1.76E-10	0.00E+00	0.00E+00	0.00E+00
n-Heptane	142-82-5	6.06E-07	5.65E-07	0.00E+00	1.75E-06	1.06E-06	0.00E+00	0.00E+00	0.00E+00
n-Hexane	110-54-3	1.71E-07	1.59E-07	0.00E+00	4.93E-07	2.98E-07	0.00E+00	0.00E+00	0.00E+00
Nitromethane	75-52-5	5.92E-12	5.52E-12	0.00E+00	1.71E-11	1.03E-11	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
n-Nonane	111-84-2	5.65	1.12E-02	8.98E-03	5.19E-04	4.86E-06	1.97E-05	6.92E-06
n-Octane	111-65-9	4.00	2.51E-04	2.01E-04	1.16E-05	1.09E-07	4.41E-07	1.55E-07
n-Pentane	109-66-0	3.21	4.07E-05	3.26E-05	1.88E-06	1.77E-08	7.15E-08	2.51E-08
n-Propionaldehyde	123-38-6	0.59	9.77E-08	7.82E-08	4.52E-09	4.24E-11	1.71E-10	6.03E-11
n-Propyl alcohol	71-23-8	0.25	4.47E-08	3.57E-08	2.07E-09	1.94E-11	7.84E-11	2.76E-11
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	-0.30	1.26E-08	1.01E-08	5.82E-10	5.46E-12	2.21E-11	7.76E-12
p-Cymene	99-87-6	4.10	3.16E-04	2.53E-04	1.46E-05	1.37E-07	5.55E-07	1.95E-07
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	-0.38	1.05E-08	8.38E-09	4.84E-10	4.54E-12	1.84E-11	6.46E-12
Propionic acid	79-09-4	0.33	5.37E-08	4.30E-08	2.48E-09	2.33E-11	9.42E-11	3.31E-11
Propionitrile	107-12-0	0.16	3.63E-08	2.90E-08	1.68E-09	1.57E-11	6.37E-11	2.24E-11
Propylene glycol monomethyl ether	107-98-2	-0.49	8.13E-09	6.50E-09	3.76E-10	3.52E-12	1.43E-11	5.01E-12
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	1.45	7.08E-07	5.66E-07	3.27E-08	3.07E-10	1.24E-09	4.37E-10
Trimethylamine	75-50-3	0.16	3.63E-08	2.90E-08	1.68E-09	1.57E-11	6.37E-11	2.24E-11
Vinyl acetate	108-05-4	0.70	1.26E-07	1.00E-07	5.81E-09	5.44E-11	2.20E-10	7.75E-11
Non-aromatic Halogenated Hydrocarbons								
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	3.41	6.46E-05	5.17E-05	2.99E-06	2.80E-08	1.13E-07	3.98E-08
1,1,1,2-Tetrachloroethane	630-20-6	2.63	1.07E-05	8.58E-06	4.96E-07	4.65E-09	1.88E-08	6.62E-09
1,1,1-Trichloroethane	71-55-6	2.42	6.63E-06	5.31E-06	3.07E-07	2.87E-09	1.16E-08	4.09E-09
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	3.73	1.35E-04	1.08E-04	6.24E-06	5.85E-08	2.37E-07	8.32E-08
1,1,2,2-Tetrachloroethane	79-34-5	4.64	1.11E-03	8.84E-04	5.11E-05	4.79E-07	1.94E-06	6.82E-07
1,1,2,2-Tetrachloroethene	127-18-4	2.55	8.82E-06	7.05E-06	4.08E-07	3.82E-09	1.55E-08	5.44E-09
1,1,2-Trichloroethane	79-00-5	2.10	3.14E-06	2.51E-06	1.45E-07	1.36E-09	5.51E-09	1.94E-09
1,1,2-Trichloroethylene	79-01-6	2.43	6.81E-06	5.45E-06	3.15E-07	2.95E-09	1.19E-08	4.20E-09
1,1-Dichloroethane	75-34-3	1.79	1.56E-06	1.25E-06	7.20E-08	6.75E-10	2.73E-09	9.61E-10

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
n-Nonane	111-84-2	5.92E-06	5.52E-06	0.00E+00	1.71E-05	1.03E-05	0.00E+00	0.00E+00	0.00E+00
n-Octane	111-65-9	1.33E-07	1.24E-07	0.00E+00	3.83E-07	2.32E-07	0.00E+00	0.00E+00	0.00E+00
n-Pentane	109-66-0	2.15E-08	2.00E-08	0.00E+00	6.21E-08	3.76E-08	0.00E+00	0.00E+00	0.00E+00
n-Propionaldehyde	123-38-6	5.16E-11	4.81E-11	0.00E+00	1.49E-10	9.01E-11	0.00E+00	0.00E+00	0.00E+00
n-Propyl alcohol	71-23-8	2.36E-11	2.20E-11	0.00E+00	6.81E-11	4.12E-11	0.00E+00	0.00E+00	0.00E+00
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	6.64E-12	6.19E-12	0.00E+00	1.92E-11	1.16E-11	0.00E+00	0.00E+00	0.00E+00
p-Cymene	99-87-6	1.67E-07	1.56E-07	0.00E+00	4.82E-07	2.92E-07	0.00E+00	0.00E+00	0.00E+00
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	5.53E-12	5.15E-12	0.00E+00	1.60E-11	9.66E-12	0.00E+00	0.00E+00	0.00E+00
Propionic acid	79-09-4	2.83E-11	2.64E-11	0.00E+00	8.18E-11	4.95E-11	0.00E+00	0.00E+00	0.00E+00
Propionitrile	107-12-0	1.92E-11	1.79E-11	0.00E+00	5.53E-11	3.35E-11	0.00E+00	0.00E+00	0.00E+00
Propylene glycol monomethyl ether	107-98-2	4.29E-12	4.00E-12	0.00E+00	1.24E-11	7.50E-12	0.00E+00	0.00E+00	0.00E+00
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	3.74E-10	3.48E-10	0.00E+00	1.08E-09	6.53E-10	0.00E+00	0.00E+00	0.00E+00
Trimethylamine	75-50-3	1.92E-11	1.79E-11	0.00E+00	5.53E-11	3.35E-11	0.00E+00	0.00E+00	0.00E+00
Vinyl acetate	108-05-4	6.63E-11	6.18E-11	0.00E+00	1.91E-10	1.16E-10	0.00E+00	0.00E+00	0.00E+00
Non-aromatic Halogenated Hydrocarbons									
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	3.41E-08	3.18E-08	0.00E+00	9.84E-08	5.95E-08	0.00E+00	0.00E+00	0.00E+00
1,1,1,2-Tetrachloroethane	630-20-6	5.66E-09	5.28E-09	0.00E+00	1.63E-08	9.89E-09	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	71-55-6	3.50E-09	3.26E-09	0.00E+00	1.01E-08	6.12E-09	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	7.12E-08	6.64E-08	0.00E+00	2.06E-07	1.24E-07	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloroethane	79-34-5	5.83E-07	5.44E-07	0.00E+00	1.68E-06	1.02E-06	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloroethene	127-18-4	4.65E-09	4.34E-09	0.00E+00	1.34E-08	8.13E-09	0.00E+00	0.00E+00	0.00E+00
1,1,2-Trichloroethane	79-00-5	1.66E-09	1.54E-09	0.00E+00	4.78E-09	2.90E-09	0.00E+00	0.00E+00	0.00E+00
1,1,2-Trichloroethylene	79-01-6	3.59E-09	3.35E-09	0.00E+00	1.04E-08	6.28E-09	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethane	75-34-3	8.22E-10	7.66E-10	0.00E+00	2.37E-09	1.44E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,1-Dichloroethene	75-35-4	2.12	3.32E-06	2.65E-06	1.53E-07	1.44E-09	5.82E-09	2.05E-09
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.16	3.63E-05	2.90E-05	1.68E-06	1.57E-08	6.37E-08	2.24E-08
1,2,3-Trichloropropane	96-18-4	2.25	4.47E-06	3.58E-06	2.07E-07	1.94E-09	7.85E-09	2.76E-09
1,2-Dibromo-3-chloropropane	96-12-8	2.34	5.50E-06	4.40E-06	2.54E-07	2.38E-09	9.65E-09	3.39E-09
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	2.82	1.66E-05	1.33E-05	7.67E-07	7.19E-09	2.91E-08	1.02E-08
1,2-Dichloroethane	107-06-2	1.46	7.28E-07	5.83E-07	3.37E-08	3.16E-10	1.28E-09	4.49E-10
1,2-Dichloroethylene	540-59-0	2.09	3.09E-06	2.47E-06	1.43E-07	1.34E-09	5.42E-09	1.91E-09
1,2-Dichloropropane	78-87-5	2.25	4.47E-06	3.58E-06	2.07E-07	1.94E-09	7.85E-09	2.76E-09
1,3-Dichloropropene	542-75-6	1.75	1.41E-06	1.13E-06	6.50E-08	6.10E-10	2.47E-09	8.68E-10
1,4-Dichloro-2-butene	764-41-0	0.87	1.87E-07	1.50E-07	8.66E-09	8.12E-11	3.29E-10	1.16E-10
1-Chloroethene	75-01-4	1.15	3.52E-07	2.81E-07	1.63E-08	1.52E-10	6.17E-10	2.17E-10
2,2-Dichloropropionic acid	75-99-0	1.68	1.20E-06	9.62E-07	5.56E-08	5.21E-10	2.11E-09	7.42E-10
2-Chloropropane	75-29-6	1.90	2.00E-06	1.60E-06	9.22E-08	8.65E-10	3.50E-09	1.23E-09
3-Chloropropene (Allyl chloride)	107-05-1	1.93	2.14E-06	1.71E-06	9.88E-08	9.27E-10	3.75E-09	1.32E-09
Bromochloromethane	74-97-5	1.41	6.46E-07	5.17E-07	2.99E-08	2.80E-10	1.13E-09	3.98E-10
Bromodichloromethane	75-27-4	2.03	2.66E-06	2.13E-06	1.23E-07	1.15E-09	4.67E-09	1.64E-09
Bromoethene	593-60-2	1.07	2.93E-07	2.34E-07	1.35E-08	1.27E-10	5.14E-10	1.81E-10
Bromoform	75-25-2	2.35	5.63E-06	4.50E-06	2.60E-07	2.44E-09	9.87E-09	3.47E-09
Bromomethane	74-83-9	1.11	3.27E-07	2.61E-07	1.51E-08	1.42E-10	5.73E-10	2.01E-10
Carbon tetrachloride	56-23-5	2.72	1.31E-05	1.05E-05	6.05E-07	5.67E-09	2.30E-08	8.07E-09
Chlorodibromomethane	124-48-1	2.18	3.77E-06	3.01E-06	1.74E-07	1.63E-09	6.61E-09	2.32E-09
Chlorodifluoromethane	75-45-6	1.08	3.01E-07	2.41E-07	1.39E-08	1.31E-10	5.29E-10	1.86E-10
Chloroethane	75-00-3	3.10	3.16E-05	2.53E-05	1.46E-06	1.37E-08	5.55E-08	1.95E-08
Chloroform	67-66-3	1.95	2.24E-06	1.79E-06	1.04E-07	9.71E-10	3.93E-09	1.38E-09
Chloromethane	74-87-3	0.90	2.01E-07	1.61E-07	9.29E-09	8.71E-11	3.53E-10	1.24E-10
Chloropentafluoroethane	76-15-3	2.10	3.16E-06	2.53E-06	1.46E-07	1.37E-09	5.55E-09	1.95E-09
cis-1,2-Dichloroethene	156-59-2	1.98	2.41E-06	1.93E-06	1.11E-07	1.05E-09	4.23E-09	1.49E-09

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,1-Dichloroethene	75-35-4	1.75E-09	1.63E-09	0.00E+00	5.05E-09	3.06E-09	0.00E+00	0.00E+00	0.00E+00
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	1.92E-08	1.79E-08	0.00E+00	5.53E-08	3.35E-08	0.00E+00	0.00E+00	0.00E+00
1,2,3-Trichloropropane	96-18-4	2.36E-09	2.20E-09	0.00E+00	6.81E-09	4.12E-09	0.00E+00	0.00E+00	0.00E+00
1,2-Dibromo-3-chloropropane	96-12-8	2.90E-09	2.71E-09	0.00E+00	8.38E-09	5.07E-09	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	8.76E-09	8.17E-09	0.00E+00	2.53E-08	1.53E-08	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethane	107-06-2	3.85E-10	3.58E-10	0.00E+00	1.11E-09	6.72E-10	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethylene	540-59-0	1.63E-09	1.52E-09	0.00E+00	4.71E-09	2.85E-09	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloropropane	78-87-5	2.36E-09	2.20E-09	0.00E+00	6.81E-09	4.12E-09	0.00E+00	0.00E+00	0.00E+00
1,3-Dichloropropene	542-75-6	7.43E-10	6.92E-10	0.00E+00	2.14E-09	1.30E-09	0.00E+00	0.00E+00	0.00E+00
1,4-Dichloro-2-butene	764-41-0	9.89E-11	9.22E-11	0.00E+00	2.85E-10	1.73E-10	0.00E+00	0.00E+00	0.00E+00
1-Chloroethene	75-01-4	1.86E-10	1.73E-10	0.00E+00	5.36E-10	3.24E-10	0.00E+00	0.00E+00	0.00E+00
2,2-Dichloropropionic acid	75-99-0	6.35E-10	5.92E-10	0.00E+00	1.83E-09	1.11E-09	0.00E+00	0.00E+00	0.00E+00
2-Chloropropane	75-29-6	1.05E-09	9.82E-10	0.00E+00	3.04E-09	1.84E-09	0.00E+00	0.00E+00	0.00E+00
3-Chloropropene (Allyl chloride)	107-05-1	1.13E-09	1.05E-09	0.00E+00	3.26E-09	1.97E-09	0.00E+00	0.00E+00	0.00E+00
Bromochloromethane	74-97-5	3.41E-10	3.18E-10	0.00E+00	9.84E-10	5.95E-10	0.00E+00	0.00E+00	0.00E+00
Bromodichloromethane	75-27-4	1.41E-09	1.31E-09	0.00E+00	4.06E-09	2.46E-09	0.00E+00	0.00E+00	0.00E+00
Bromoethene	593-60-2	1.55E-10	1.44E-10	0.00E+00	4.46E-10	2.70E-10	0.00E+00	0.00E+00	0.00E+00
Bromoform	75-25-2	2.97E-09	2.77E-09	0.00E+00	8.57E-09	5.19E-09	0.00E+00	0.00E+00	0.00E+00
Bromomethane	74-83-9	1.72E-10	1.61E-10	0.00E+00	4.98E-10	3.01E-10	0.00E+00	0.00E+00	0.00E+00
Carbon tetrachloride	56-23-5	6.91E-09	6.44E-09	0.00E+00	1.99E-08	1.21E-08	0.00E+00	0.00E+00	0.00E+00
Chlorodibromomethane	124-48-1	1.99E-09	1.85E-09	0.00E+00	5.74E-09	3.47E-09	0.00E+00	0.00E+00	0.00E+00
Chlorodifluoromethane	75-45-6	1.59E-10	1.48E-10	0.00E+00	4.59E-10	2.78E-10	0.00E+00	0.00E+00	0.00E+00
Chloroethane	75-00-3	1.67E-08	1.56E-08	0.00E+00	4.82E-08	2.92E-08	0.00E+00	0.00E+00	0.00E+00
Chloroform	67-66-3	1.18E-09	1.10E-09	0.00E+00	3.41E-09	2.07E-09	0.00E+00	0.00E+00	0.00E+00
Chloromethane	74-87-3	1.06E-10	9.89E-11	0.00E+00	3.06E-10	1.85E-10	0.00E+00	0.00E+00	0.00E+00
Chloropentafluoroethane	76-15-3	1.67E-09	1.56E-09	0.00E+00	4.82E-09	2.92E-09	0.00E+00	0.00E+00	0.00E+00
cis-1,2-Dichloroethene	156-59-2	1.27E-09	1.19E-09	0.00E+00	3.67E-09	2.22E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	-0.29	1.29E-08	1.03E-08	5.96E-10	5.59E-12	2.26E-11	7.95E-12
Cyanogen chloride	506-77-4	-0.38	1.05E-08	8.38E-09	4.84E-10	4.54E-12	1.84E-11	6.46E-12
Dichlorodifluoromethane	75-71-8	2.16	3.62E-06	2.89E-06	1.67E-07	1.57E-09	6.35E-09	2.23E-09
Dichlorofluoromethane	75-43-4	1.55	8.91E-07	7.13E-07	4.12E-08	3.86E-10	1.56E-09	5.50E-10
Dichloromethane	75-09-2	1.26	4.52E-07	3.62E-07	2.09E-08	1.96E-10	7.93E-10	2.79E-10
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.69	1.23E-06	9.84E-07	5.69E-08	5.33E-10	2.16E-09	7.59E-10
Methylene bromide	74-95-3	1.62	1.05E-06	8.38E-07	4.84E-08	4.54E-10	1.84E-09	6.46E-10
Pentachloroethane	76-01-7	3.05	2.82E-05	2.25E-05	1.30E-06	1.22E-08	4.95E-08	1.74E-08
trans-1,2-Dichloroethylene	156-60-5	1.98	2.41E-06	1.93E-06	1.11E-07	1.05E-09	4.23E-09	1.49E-09
trans-1,3-Dichloropropene	10061-02-6	2.06	2.88E-06	2.31E-06	1.33E-07	1.25E-09	5.06E-09	1.78E-09
Trichloroacetic acid	76-03-9	1.33	5.37E-07	4.30E-07	2.48E-08	2.33E-10	9.42E-10	3.31E-10
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	2.53	8.54E-06	6.83E-06	3.95E-07	3.70E-09	1.50E-08	5.27E-09
Trifluorobromomethane	75-63-8	1.86	1.82E-06	1.46E-06	8.41E-08	7.89E-10	3.19E-09	1.12E-09
Dioxin and Furan Compounds (PCDDs/PCDFs)								
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	8.20	2.77E-03	2.22E-03	1.28E-04	1.20E-06	4.87E-06	1.71E-06
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.92	5.98E-04	4.78E-04	2.76E-05	2.59E-07	1.05E-06	3.69E-07
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	7.92	2.12E-02	1.69E-02	9.79E-04	9.18E-06	3.71E-05	1.31E-05
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	7.79	1.68E-02	1.35E-02	7.78E-04	7.29E-06	2.95E-05	1.04E-05
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	7.25	4.13E-03	3.30E-03	1.91E-04	1.79E-06	7.24E-06	2.55E-06
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	7.25	6.52E-03	5.22E-03	3.01E-04	2.83E-06	1.14E-05	4.02E-06
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	7.25	1.03E-02	8.26E-03	4.77E-04	4.47E-06	1.81E-05	6.37E-06
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.25	7.61E-03	6.08E-03	3.52E-04	3.30E-06	1.33E-05	4.69E-06
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	7.25	3.42E-02	2.74E-02	1.58E-03	1.48E-05	6.01E-05	2.11E-05

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	6.80E-12	6.34E-12	0.00E+00	1.96E-11	1.19E-11	0.00E+00	0.00E+00	0.00E+00
Cyanogen chloride	506-77-4	5.53E-12	5.15E-12	0.00E+00	1.60E-11	9.66E-12	0.00E+00	0.00E+00	0.00E+00
Dichlorodifluoromethane	75-71-8	1.91E-09	1.78E-09	0.00E+00	5.51E-09	3.34E-09	0.00E+00	0.00E+00	0.00E+00
Dichlorofluoromethane	75-43-4	4.70E-10	4.38E-10	0.00E+00	1.36E-09	8.22E-10	0.00E+00	0.00E+00	0.00E+00
Dichloromethane	75-09-2	2.39E-10	2.22E-10	0.00E+00	6.89E-10	4.17E-10	0.00E+00	0.00E+00	0.00E+00
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	6.49E-10	6.05E-10	0.00E+00	1.87E-09	1.13E-09	0.00E+00	0.00E+00	0.00E+00
Methylene bromide	74-95-3	5.53E-10	5.15E-10	0.00E+00	1.60E-09	9.66E-10	0.00E+00	0.00E+00	0.00E+00
Pentachloroethane	76-01-7	1.49E-08	1.39E-08	0.00E+00	4.29E-08	2.60E-08	0.00E+00	0.00E+00	0.00E+00
trans-1,2-Dichloroethylene	156-60-5	1.27E-09	1.19E-09	0.00E+00	3.67E-09	2.22E-09	0.00E+00	0.00E+00	0.00E+00
trans-1,3-Dichloropropene	10061-02-6	1.52E-09	1.42E-09	0.00E+00	4.39E-09	2.66E-09	0.00E+00	0.00E+00	0.00E+00
Trichloroacetic acid	76-03-9	2.83E-10	2.64E-10	0.00E+00	8.18E-10	4.95E-10	0.00E+00	0.00E+00	0.00E+00
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	4.51E-09	4.20E-09	0.00E+00	1.30E-08	7.88E-09	0.00E+00	0.00E+00	0.00E+00
Trifluorobromomethane	75-63-8	9.61E-10	8.95E-10	0.00E+00	2.77E-09	1.68E-09	0.00E+00	0.00E+00	0.00E+00
Dioxin and Furan Compounds (PCDDs/PCDFs)									
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	1.46E-06	1.36E-06	0.00E+00	4.23E-06	2.56E-06	0.00E+00	0.00E+00	0.00E+00
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	3.15E-07	2.94E-07	0.00E+00	9.11E-07	5.51E-07	0.00E+00	0.00E+00	0.00E+00
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	1.12E-05	1.04E-05	0.00E+00	3.23E-05	1.95E-05	0.00E+00	0.00E+00	0.00E+00
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	8.88E-06	8.28E-06	0.00E+00	2.56E-05	1.55E-05	0.00E+00	0.00E+00	0.00E+00
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	2.18E-06	2.03E-06	0.00E+00	6.29E-06	3.81E-06	0.00E+00	0.00E+00	0.00E+00
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	3.44E-06	3.21E-06	0.00E+00	9.93E-06	6.01E-06	0.00E+00	0.00E+00	0.00E+00
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	5.45E-06	5.08E-06	0.00E+00	1.57E-05	9.52E-06	0.00E+00	0.00E+00	0.00E+00
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	4.01E-06	3.74E-06	0.00E+00	1.16E-05	7.01E-06	0.00E+00	0.00E+00	0.00E+00
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	1.81E-05	1.68E-05	0.00E+00	5.22E-05	3.16E-05	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	6.64	5.00E-02	4.00E-02	2.31E-03	2.17E-05	8.76E-05	3.08E-05
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	6.79	1.20E-02	9.56E-03	5.52E-04	5.18E-06	2.10E-05	7.37E-06
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	7.25	3.64E-02	2.91E-02	1.68E-03	1.58E-05	6.39E-05	2.25E-05
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.92	8.70E-02	6.96E-02	4.02E-03	3.77E-05	1.53E-04	5.36E-05
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	6.64	5.43E-02	4.35E-02	2.51E-03	2.35E-05	9.53E-05	3.35E-05
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	6.53	4.34E-02	3.47E-02	2.01E-03	1.88E-05	7.62E-05	2.68E-05
Dibenzofuran	132-64-9	4.33	5.37E-04	4.30E-04	2.48E-05	2.33E-07	9.42E-07	3.31E-07
Octachlorodibenzo(p)dioxin	3268-87-9	7.59	6.52E-04	5.22E-04	3.01E-05	2.83E-07	1.14E-06	4.02E-07
Octachlorodibenzofuran	39001-02-0	8.78	8.70E-04	6.96E-04	4.02E-05	3.77E-07	1.53E-06	5.36E-07
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)								
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	7.08	3.02E-01	2.42E-01	1.40E-02	1.31E-04	5.30E-04	1.86E-04
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	7.12	3.31E-01	2.65E-01	1.53E-02	1.44E-04	5.81E-04	2.04E-04
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	7.12	3.31E-01	2.65E-01	1.53E-02	1.44E-04	5.81E-04	2.04E-04
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	7.41	6.43E-01	5.14E-01	2.97E-02	2.79E-04	1.13E-03	3.97E-04
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	6.29	4.90E-02	3.92E-02	2.26E-03	2.12E-05	8.59E-05	3.02E-05

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	2.64E-05	2.46E-05	0.00E+00	7.61E-05	4.61E-05	0.00E+00	0.00E+00	0.00E+00
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	6.31E-06	5.88E-06	0.00E+00	1.82E-05	1.10E-05	0.00E+00	0.00E+00	0.00E+00
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	1.92E-05	1.79E-05	0.00E+00	5.55E-05	3.36E-05	0.00E+00	0.00E+00	0.00E+00
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	4.59E-05	4.28E-05	0.00E+00	1.33E-04	8.02E-05	0.00E+00	0.00E+00	0.00E+00
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	2.87E-05	2.67E-05	0.00E+00	8.28E-05	5.01E-05	0.00E+00	0.00E+00	0.00E+00
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	2.29E-05	2.14E-05	0.00E+00	6.61E-05	4.00E-05	0.00E+00	0.00E+00	0.00E+00
Dibenzofuran	132-64-9	2.83E-07	2.64E-07	0.00E+00	8.18E-07	4.95E-07	0.00E+00	0.00E+00	0.00E+00
Octachlorodibenzo(p)dioxin	3268-87-9	3.44E-07	3.21E-07	0.00E+00	9.93E-07	6.01E-07	0.00E+00	0.00E+00	0.00E+00
Octachlorodibenzofuran	39001-02-0	4.59E-07	4.28E-07	0.00E+00	1.33E-06	8.02E-07	0.00E+00	0.00E+00	0.00E+00
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)									
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	1.59E-04	1.49E-04	0.00E+00	4.60E-04	2.79E-04	0.00E+00	0.00E+00	0.00E+00
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	1.75E-04	1.63E-04	0.00E+00	5.05E-04	3.05E-04	0.00E+00	0.00E+00	0.00E+00
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	1.75E-04	1.63E-04	0.00E+00	5.05E-04	3.05E-04	0.00E+00	0.00E+00	0.00E+00
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	3.39E-04	3.16E-04	0.00E+00	9.79E-04	5.93E-04	0.00E+00	0.00E+00	0.00E+00
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	2.59E-05	2.41E-05	0.00E+00	7.46E-05	4.52E-05	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Phthalates								
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	5.20	4.02E-03	3.22E-03	1.86E-04	1.74E-06	7.05E-06	2.48E-06
Butylbenzyl phthalate	85-68-7	4.41	6.51E-04	5.20E-04	3.01E-05	2.82E-07	1.14E-06	4.01E-07
Dibutyl phthalate	84-74-2	4.72	1.32E-03	1.05E-03	6.10E-05	5.72E-07	2.31E-06	8.14E-07
Diethyl phthalate	84-66-2	4.44	6.86E-04	5.49E-04	3.17E-05	2.97E-07	1.20E-06	4.23E-07
Dimethyl phthalate	131-11-3	1.63	1.08E-06	8.64E-07	4.99E-08	4.68E-10	1.90E-09	6.66E-10
n-Dioctyl phthalate	117-84-0	9.33	5.37E+01	4.29E+01	2.48E+00	2.33E-02	9.42E-02	3.31E-02
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)								
2-Chloronaphthalene	91-58-7	4.07	2.94E-04	2.35E-04	1.36E-05	1.27E-07	5.16E-07	1.81E-07
2-Methyl naphthalene	91-57-6	3.86	1.82E-04	1.46E-04	8.41E-06	7.89E-08	3.19E-07	1.12E-07
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	3.96	2.32E-04	1.85E-04	1.07E-05	1.00E-07	4.06E-07	1.43E-07
Acenaphthylene	208-96-8	4.07	2.95E-04	2.36E-04	1.36E-05	1.28E-07	5.18E-07	1.82E-07
Anthracene	120-12-7	4.47	7.41E-04	5.93E-04	3.43E-05	3.21E-07	1.30E-06	4.57E-07
Fluorene	86-73-7	4.17	3.72E-04	2.98E-04	1.72E-05	1.61E-07	6.53E-07	2.30E-07
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	3.37	5.93E-05	4.74E-05	2.74E-06	2.57E-08	1.04E-07	3.66E-08
Phenanthrene	85-01-8	4.55	8.92E-04	7.13E-04	4.12E-05	3.87E-07	1.56E-06	5.50E-07
Pyrene	129-00-0	5.00	2.51E-03	2.01E-03	1.16E-04	1.09E-06	4.41E-06	1.55E-06
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)								
3-Methylcholanthrene	56-49-5	7.11	3.24E-01	2.59E-01	1.50E-02	1.40E-04	5.68E-04	2.00E-04
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	5.68	1.20E-02	9.62E-03	5.56E-04	5.21E-06	2.11E-05	7.42E-06
Benzo[a]pyrene	50-32-8	6.13	2.74E-02	2.20E-02	1.27E-03	1.19E-05	4.82E-05	1.69E-05
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	6.20	4.00E-02	3.20E-02	1.85E-03	1.74E-05	7.02E-05	2.47E-05
Benzo[e]pyrene	192-97-2	7.40	6.31E-01	5.05E-01	2.92E-02	2.74E-04	1.11E-03	3.89E-04

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Phthalates									
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	2.12E-06	1.98E-06	0.00E+00	6.13E-06	3.71E-06	0.00E+00	0.00E+00	0.00E+00
Butylbenzyl phthalate	85-68-7	3.43E-07	3.20E-07	0.00E+00	9.91E-07	6.00E-07	0.00E+00	0.00E+00	0.00E+00
Dibutyl phthalate	84-74-2	6.96E-07	6.49E-07	0.00E+00	2.01E-06	1.22E-06	0.00E+00	0.00E+00	0.00E+00
Diethyl phthalate	84-66-2	3.62E-07	3.37E-07	0.00E+00	1.04E-06	6.32E-07	0.00E+00	0.00E+00	0.00E+00
Dimethyl phthalate	131-11-3	5.70E-10	5.31E-10	0.00E+00	1.65E-09	9.96E-10	0.00E+00	0.00E+00	0.00E+00
n-Dioctyl phthalate	117-84-0	2.83E-02	2.64E-02	0.00E+00	8.18E-02	4.95E-02	0.00E+00	0.00E+00	0.00E+00
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)									
2-Chloronaphthalene	91-58-7	1.55E-07	1.45E-07	0.00E+00	4.48E-07	2.71E-07	0.00E+00	0.00E+00	0.00E+00
2-Methyl naphthalene	91-57-6	9.61E-08	8.95E-08	0.00E+00	2.77E-07	1.68E-07	0.00E+00	0.00E+00	0.00E+00
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	1.22E-07	1.14E-07	0.00E+00	3.53E-07	2.14E-07	0.00E+00	0.00E+00	0.00E+00
Acenaphthylene	208-96-8	1.56E-07	1.45E-07	0.00E+00	4.50E-07	2.72E-07	0.00E+00	0.00E+00	0.00E+00
Anthracene	120-12-7	3.91E-07	3.65E-07	0.00E+00	1.13E-06	6.83E-07	0.00E+00	0.00E+00	0.00E+00
Fluorene	86-73-7	1.96E-07	1.83E-07	0.00E+00	5.67E-07	3.43E-07	0.00E+00	0.00E+00	0.00E+00
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	3.13E-08	2.92E-08	0.00E+00	9.03E-08	5.47E-08	0.00E+00	0.00E+00	0.00E+00
Phenanthrene	85-01-8	4.71E-07	4.39E-07	0.00E+00	1.36E-06	8.22E-07	0.00E+00	0.00E+00	0.00E+00
Pyrene	129-00-0	1.33E-06	1.24E-06	0.00E+00	3.83E-06	2.32E-06	0.00E+00	0.00E+00	0.00E+00
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)									
3-Methylcholanthrene	56-49-5	1.71E-04	1.59E-04	0.00E+00	4.93E-04	2.98E-04	0.00E+00	0.00E+00	0.00E+00
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	6.35E-06	5.92E-06	0.00E+00	1.83E-05	1.11E-05	0.00E+00	0.00E+00	0.00E+00
Benzo[a]pyrene	50-32-8	1.45E-05	1.35E-05	0.00E+00	4.18E-05	2.53E-05	0.00E+00	0.00E+00	0.00E+00
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	2.11E-05	1.97E-05	0.00E+00	6.10E-05	3.69E-05	0.00E+00	0.00E+00	0.00E+00
Benzo[e]pyrene	192-97-2	3.33E-04	3.10E-04	0.00E+00	9.61E-04	5.82E-04	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Benzo[g,h,i]perylene	191-24-2	7.10	3.16E-01	2.53E-01	1.46E-02	1.37E-04	5.55E-04	1.95E-04
Benzo[j]fluoranthene	205-82-3	6.44	6.92E-02	5.53E-02	3.20E-03	3.00E-05	1.21E-04	4.27E-05
Benzo[k]fluoranthene	207-08-9	6.19	3.98E-02	3.18E-02	1.84E-03	1.73E-05	6.99E-05	2.46E-05
Chrysene	218-01-9	5.74	1.38E-02	1.11E-02	6.39E-04	5.99E-06	2.43E-05	8.53E-06
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	6.55	8.86E-02	7.09E-02	4.10E-03	3.84E-05	1.55E-04	5.47E-05
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	7.29	4.90E-01	3.92E-01	2.26E-02	2.12E-04	8.59E-04	3.02E-04
Fluoranthene	206-44-0	5.08	3.04E-03	2.43E-03	1.41E-04	1.32E-06	5.33E-06	1.88E-06
Hexachloronaphthalene	1335-87-1	7.59	9.77E-01	7.82E-01	4.52E-02	4.24E-04	1.71E-03	6.03E-04
Indeno[1,2,3-cd]pyrene	193-39-5	6.91	2.07E-01	1.66E-01	9.57E-03	8.97E-05	3.63E-04	1.28E-04
Octachloronaphthalene	2234-13-1	6.42	6.61E-02	5.29E-02	3.06E-03	2.87E-05	1.16E-04	4.08E-05
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)								
1,2,3-Trichlorobenzene	87-61-6	4.05	2.79E-04	2.23E-04	1.29E-05	1.21E-07	4.89E-07	1.72E-07
1,2,4-Trichlorobenzene	120-82-1	3.99	2.44E-04	1.96E-04	1.13E-05	1.06E-07	4.29E-07	1.51E-07
1,2,4-Trimethyl benzene	95-63-6	3.65	1.12E-04	8.98E-05	5.19E-06	4.86E-08	1.97E-07	6.92E-08
1,2-Dichlorobenzene	95-50-1	3.45	7.01E-05	5.61E-05	3.24E-06	3.04E-08	1.23E-07	4.32E-08
1,3,5-Trimethyl benzene	108-67-8	3.42	6.61E-05	5.29E-05	3.05E-06	2.86E-08	1.16E-07	4.08E-08
1,3-Dichlorobenzene	541-73-1	3.53	8.52E-05	6.81E-05	3.94E-06	3.69E-08	1.49E-07	5.25E-08
1,3-Dinitrobenzene	99-65-0	1.49	7.79E-07	6.23E-07	3.60E-08	3.38E-10	1.37E-09	4.81E-10

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Benzo[g,h,i]perylene	191-24-2	1.67E-04	1.56E-04	0.00E+00	4.82E-04	2.92E-04	0.00E+00	0.00E+00	0.00E+00
Benzo[j]fluoranthene	205-82-3	3.65E-05	3.40E-05	0.00E+00	1.05E-04	6.38E-05	0.00E+00	0.00E+00	0.00E+00
Benzo[k]fluoranthene	207-08-9	2.10E-05	1.96E-05	0.00E+00	6.07E-05	3.67E-05	0.00E+00	0.00E+00	0.00E+00
Chrysene	218-01-9	7.30E-06	6.80E-06	0.00E+00	2.11E-05	1.27E-05	0.00E+00	0.00E+00	0.00E+00
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	4.68E-05	4.36E-05	0.00E+00	1.35E-04	8.17E-05	0.00E+00	0.00E+00	0.00E+00
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	2.59E-04	2.41E-04	0.00E+00	7.46E-04	4.52E-04	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	206-44-0	1.60E-06	1.50E-06	0.00E+00	4.63E-06	2.80E-06	0.00E+00	0.00E+00	0.00E+00
Hexachloronaphthalene	1335-87-1	5.16E-04	4.81E-04	0.00E+00	1.49E-03	9.01E-04	0.00E+00	0.00E+00	0.00E+00
Indeno[1,2,3-cd]pyrene	193-39-5	1.09E-04	1.02E-04	0.00E+00	3.15E-04	1.91E-04	0.00E+00	0.00E+00	0.00E+00
Octachloronaphthalene	2234-13-1	3.49E-05	3.25E-05	0.00E+00	1.01E-04	6.10E-05	0.00E+00	0.00E+00	0.00E+00
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data	No data
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)									
1,2,3-Trichlorobenzene	87-61-6	1.47E-07	1.37E-07	0.00E+00	4.25E-07	2.57E-07	0.00E+00	0.00E+00	0.00E+00
1,2,4-Trichlorobenzene	120-82-1	1.29E-07	1.20E-07	0.00E+00	3.72E-07	2.25E-07	0.00E+00	0.00E+00	0.00E+00
1,2,4-Trimethyl benzene	95-63-6	5.92E-08	5.52E-08	0.00E+00	1.71E-07	1.03E-07	0.00E+00	0.00E+00	0.00E+00
1,2-Dichlorobenzene	95-50-1	3.70E-08	3.45E-08	0.00E+00	1.07E-07	6.46E-08	0.00E+00	0.00E+00	0.00E+00
1,3,5-Trimethyl benzene	108-67-8	3.49E-08	3.25E-08	0.00E+00	1.01E-07	6.09E-08	0.00E+00	0.00E+00	0.00E+00
1,3-Dichlorobenzene	541-73-1	4.49E-08	4.19E-08	0.00E+00	1.30E-07	7.85E-08	0.00E+00	0.00E+00	0.00E+00
1,3-Dinitrobenzene	99-65-0	4.11E-10	3.83E-10	0.00E+00	1.19E-09	7.18E-10	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,4-Dichlorobenzene	106-46-7	3.41	6.48E-05	5.18E-05	3.00E-06	2.81E-08	1.14E-07	4.00E-08
1,4-Dinitrobenzene	100-25-4	1.50	7.94E-07	6.35E-07	3.67E-08	3.44E-10	1.39E-09	4.90E-10
2,4,5-Trichlorophenol	95-95-4	3.87	1.86E-04	1.49E-04	8.61E-06	8.07E-08	3.27E-07	1.15E-07
2,4,6-Trichlorophenol	88-06-2	3.71	1.29E-04	1.03E-04	5.98E-06	5.61E-08	2.27E-07	7.98E-08
2,4-Dichlorophenol	120-83-2	3.04	2.74E-05	2.19E-05	1.27E-06	1.19E-08	4.80E-08	1.69E-08
2,4-Dimethylphenol	105-67-9	2.36	5.75E-06	4.60E-06	2.66E-07	2.49E-09	1.01E-08	3.55E-09
2,4-Dinitrophenol	51-28-5	1.52	8.29E-07	6.63E-07	3.83E-08	3.59E-10	1.45E-09	5.11E-10
2,4-Dinitrotoluene	121-14-2	2.00	2.49E-06	1.99E-06	1.15E-07	1.08E-09	4.37E-09	1.54E-09
2,6-Dinitrotoluene	606-20-2	1.89	1.93E-06	1.55E-06	8.93E-08	8.38E-10	3.39E-09	1.19E-09
2-Chlorophenol	95-57-8	2.16	3.64E-06	2.91E-06	1.68E-07	1.58E-09	6.39E-09	2.25E-09
2-Chlorotoluene	95-49-8	3.54	8.64E-05	6.91E-05	3.99E-06	3.74E-08	1.52E-07	5.33E-08
2-Nitrophenol	88-75-5	1.79	1.55E-06	1.24E-06	7.17E-08	6.72E-10	2.72E-09	9.56E-10
4,6-Dinitro-o-cresol	534-52-1	2.12	3.31E-06	2.65E-06	1.53E-07	1.44E-09	5.81E-09	2.04E-09
4-Chlorotoluene	106-43-4	3.33	5.37E-05	4.30E-05	2.48E-06	2.33E-08	9.42E-08	3.31E-08
4-Nitrophenol	100-02-7	1.91	2.04E-06	1.63E-06	9.44E-08	8.85E-10	3.58E-09	1.26E-09
alpha-Methylstyrene	98-83-9	3.46	7.30E-05	5.84E-05	3.38E-06	3.17E-08	1.28E-07	4.51E-08
Aniline	62-53-3	0.98	2.40E-07	1.92E-07	1.11E-08	1.04E-10	4.21E-10	1.48E-10
Benzotrichloride	98-07-7	2.92	2.09E-05	1.67E-05	9.66E-07	9.06E-09	3.67E-08	1.29E-08
Benzyl chloride	100-44-7	2.30	5.01E-06	4.01E-06	2.32E-07	2.17E-09	8.79E-09	3.09E-09
Bromobenzene	108-86-1	2.99	2.45E-05	1.96E-05	1.13E-06	1.06E-08	4.31E-08	1.51E-08
Chlorobenzene	108-90-7	2.79	1.55E-05	1.24E-05	7.15E-07	6.71E-09	2.72E-08	9.55E-09
Cumene	98-82-8	3.61	1.03E-04	8.24E-05	4.76E-06	4.46E-08	1.81E-07	6.35E-08
m-Cresol	108-39-4	1.96	2.29E-06	1.83E-06	1.06E-07	9.91E-10	4.01E-09	1.41E-09
n-Butyl benzene	104-51-8	4.28	4.79E-04	3.83E-04	2.21E-05	2.08E-07	8.40E-07	2.95E-07
Nitrobenzene	98-95-3	1.83	1.71E-06	1.37E-06	7.91E-08	7.42E-10	3.00E-09	1.06E-09
n-Propyl benzene	103-65-1	3.69	1.23E-04	9.84E-05	5.69E-06	5.33E-08	2.16E-07	7.59E-08
o-Cresol	95-48-7	2.02	2.64E-06	2.11E-06	1.22E-07	1.14E-09	4.63E-09	1.63E-09

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,4-Dichlorobenzene	106-46-7	3.42E-08	3.19E-08	0.00E+00	9.87E-08	5.98E-08	0.00E+00	0.00E+00	0.00E+00
1,4-Dinitrobenzene	100-25-4	4.19E-10	3.91E-10	0.00E+00	1.21E-09	7.33E-10	0.00E+00	0.00E+00	0.00E+00
2,4,5-Trichlorophenol	95-95-4	9.82E-08	9.16E-08	0.00E+00	2.84E-07	1.72E-07	0.00E+00	0.00E+00	0.00E+00
2,4,6-Trichlorophenol	88-06-2	6.83E-08	6.36E-08	0.00E+00	1.97E-07	1.19E-07	0.00E+00	0.00E+00	0.00E+00
2,4-Dichlorophenol	120-83-2	1.45E-08	1.35E-08	0.00E+00	4.17E-08	2.53E-08	0.00E+00	0.00E+00	0.00E+00
2,4-Dimethylphenol	105-67-9	3.04E-09	2.83E-09	0.00E+00	8.76E-09	5.30E-09	0.00E+00	0.00E+00	0.00E+00
2,4-Dinitrophenol	51-28-5	4.38E-10	4.08E-10	0.00E+00	1.26E-09	7.64E-10	0.00E+00	0.00E+00	0.00E+00
2,4-Dinitrotoluene	121-14-2	1.31E-09	1.23E-09	0.00E+00	3.80E-09	2.30E-09	0.00E+00	0.00E+00	0.00E+00
2,6-Dinitrotoluene	606-20-2	1.02E-09	9.51E-10	0.00E+00	2.94E-09	1.78E-09	0.00E+00	0.00E+00	0.00E+00
2-Chlorophenol	95-57-8	1.92E-09	1.79E-09	0.00E+00	5.55E-09	3.36E-09	0.00E+00	0.00E+00	0.00E+00
2-Chlorotoluene	95-49-8	4.56E-08	4.25E-08	0.00E+00	1.32E-07	7.96E-08	0.00E+00	0.00E+00	0.00E+00
2-Nitrophenol	88-75-5	8.18E-10	7.63E-10	0.00E+00	2.36E-09	1.43E-09	0.00E+00	0.00E+00	0.00E+00
4,6-Dinitro-o-cresol	534-52-1	1.75E-09	1.63E-09	0.00E+00	5.05E-09	3.05E-09	0.00E+00	0.00E+00	0.00E+00
4-Chlorotoluene	106-43-4	2.83E-08	2.64E-08	0.00E+00	8.18E-08	4.95E-08	0.00E+00	0.00E+00	0.00E+00
4-Nitrophenol	100-02-7	1.08E-09	1.00E-09	0.00E+00	3.11E-09	1.88E-09	0.00E+00	0.00E+00	0.00E+00
alpha-Methylstyrene	98-83-9	3.86E-08	3.59E-08	0.00E+00	1.11E-07	6.74E-08	0.00E+00	0.00E+00	0.00E+00
Aniline	62-53-3	1.27E-10	1.18E-10	0.00E+00	3.66E-10	2.21E-10	0.00E+00	0.00E+00	0.00E+00
Benzotrichloride	98-07-7	1.10E-08	1.03E-08	0.00E+00	3.18E-08	1.93E-08	0.00E+00	0.00E+00	0.00E+00
Benzyl chloride	100-44-7	2.64E-09	2.46E-09	0.00E+00	7.63E-09	4.62E-09	0.00E+00	0.00E+00	0.00E+00
Bromobenzene	108-86-1	1.30E-08	1.21E-08	0.00E+00	3.74E-08	2.26E-08	0.00E+00	0.00E+00	0.00E+00
Chlorobenzene	108-90-7	8.17E-09	7.61E-09	0.00E+00	2.36E-08	1.43E-08	0.00E+00	0.00E+00	0.00E+00
Cumene	98-82-8	5.44E-08	5.07E-08	0.00E+00	1.57E-07	9.50E-08	0.00E+00	0.00E+00	0.00E+00
m-Cresol	108-39-4	1.21E-09	1.12E-09	0.00E+00	3.48E-09	2.11E-09	0.00E+00	0.00E+00	0.00E+00
n-Butyl benzene	104-51-8	2.53E-07	2.35E-07	0.00E+00	7.29E-07	4.41E-07	0.00E+00	0.00E+00	0.00E+00
Nitrobenzene	98-95-3	9.03E-10	8.42E-10	0.00E+00	2.61E-09	1.58E-09	0.00E+00	0.00E+00	0.00E+00
n-Propyl benzene	103-65-1	6.49E-08	6.05E-08	0.00E+00	1.87E-07	1.13E-07	0.00E+00	0.00E+00	0.00E+00
o-Cresol	95-48-7	1.39E-09	1.30E-09	0.00E+00	4.02E-09	2.43E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
o-Dinitrobenzene	528-29-0	1.69	1.23E-06	9.84E-07	5.69E-08	5.33E-10	2.16E-09	7.59E-10
o-Nitroaniline	88-74-4	1.85	1.78E-06	1.42E-06	8.22E-08	7.71E-10	3.12E-09	1.10E-09
o-Toluidine	95-53-4	1.34	5.50E-07	4.40E-07	2.54E-08	2.38E-10	9.65E-10	3.39E-10
p-Chloroaniline	106-47-8	1.87	1.86E-06	1.49E-06	8.59E-08	8.06E-10	3.26E-09	1.15E-09
p-Cresol	106-44-5	1.94	2.19E-06	1.75E-06	1.01E-07	9.47E-10	3.83E-09	1.35E-09
Phenol	108-95-2	1.48	7.54E-07	6.03E-07	3.48E-08	3.27E-10	1.32E-09	4.65E-10
p-Nitrochlorobenzene	100-00-5	2.39	6.17E-06	4.93E-06	2.85E-07	2.67E-09	1.08E-08	3.80E-09
p-Toluidine	106-49-0	1.40	6.31E-07	5.05E-07	2.92E-08	2.74E-10	1.11E-09	3.89E-10
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	4.11	3.24E-04	2.59E-04	1.50E-05	1.40E-07	5.68E-07	2.00E-07
Toluene-2,6-diamine	823-40-5	0.16	3.63E-08	2.90E-08	1.68E-09	1.57E-11	6.37E-11	2.24E-11
Trimethyl benzene	25551-13-7	3.42	6.61E-05	5.29E-05	3.05E-06	2.86E-08	1.16E-07	4.08E-08
Other Light Semivolatile Compounds (molecular weight <200 g/mole)								
1,1'-Biphenyl	92-52-4	3.90	2.00E-04	1.60E-04	9.22E-06	8.65E-08	3.50E-07	1.23E-07
1,1-Dimethylhydrazine	57-14-7	-1.19	1.62E-09	1.30E-09	7.50E-11	7.03E-13	2.85E-12	1.00E-12
1,2-Dimethylhydrazine	540-73-8	-1.37	1.08E-09	8.61E-10	4.98E-11	4.67E-13	1.89E-12	6.64E-13
1,2-Diphenylhydrazine	122-66-7	2.94	2.19E-05	1.75E-05	1.01E-06	9.49E-09	3.84E-08	1.35E-08
1,3-Propane sultone	1120-71-4	-0.52	7.53E-09	6.03E-09	3.48E-10	3.27E-12	1.32E-11	4.65E-12
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	1.93	2.14E-06	1.71E-06	9.88E-08	9.27E-10	3.75E-09	1.32E-09
2-Propenoic acid	79-10-7	0.43	6.76E-08	5.41E-08	3.13E-09	2.93E-11	1.19E-10	4.17E-11
4,4'-Methylenedianiline	101-77-9	1.59	9.77E-07	7.82E-07	4.52E-08	4.24E-10	1.71E-09	6.03E-10
Acetophenone	98-86-2	1.64	1.10E-06	8.78E-07	5.08E-08	4.76E-10	1.93E-09	6.77E-10
Benzoic acid	65-85-0	1.87	1.86E-06	1.49E-06	8.61E-08	8.07E-10	3.27E-09	1.15E-09
bis(2-Chloroethoxy)methane	111-91-1	1.30	5.01E-07	4.01E-07	2.32E-08	2.17E-10	8.79E-10	3.09E-10
bis(2-Chloroethyl) ether	111-44-4	1.30	5.02E-07	4.02E-07	2.32E-08	2.18E-10	8.82E-10	3.10E-10
Chlorocyclopentadiene	41851-50-7	2.43	6.76E-06	5.41E-06	3.13E-07	2.93E-09	1.19E-08	4.17E-09

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
o-Dinitrobenzene	528-29-0	6.49E-10	6.05E-10	0.00E+00	1.87E-09	1.13E-09	0.00E+00	0.00E+00	0.00E+00
o-Nitroaniline	88-74-4	9.39E-10	8.75E-10	0.00E+00	2.71E-09	1.64E-09	0.00E+00	0.00E+00	0.00E+00
o-Toluidine	95-53-4	2.90E-10	2.71E-10	0.00E+00	8.38E-10	5.07E-10	0.00E+00	0.00E+00	0.00E+00
p-Chloroaniline	106-47-8	9.81E-10	9.15E-10	0.00E+00	2.83E-09	1.71E-09	0.00E+00	0.00E+00	0.00E+00
p-Cresol	106-44-5	1.15E-09	1.08E-09	0.00E+00	3.33E-09	2.02E-09	0.00E+00	0.00E+00	0.00E+00
Phenol	108-95-2	3.98E-10	3.71E-10	0.00E+00	1.15E-09	6.95E-10	0.00E+00	0.00E+00	0.00E+00
p-Nitrochlorobenzene	100-00-5	3.25E-09	3.03E-09	0.00E+00	9.40E-09	5.69E-09	0.00E+00	0.00E+00	0.00E+00
p-Toluidine	106-49-0	3.33E-10	3.10E-10	0.00E+00	9.61E-10	5.82E-10	0.00E+00	0.00E+00	0.00E+00
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	1.71E-07	1.59E-07	0.00E+00	4.93E-07	2.98E-07	0.00E+00	0.00E+00	0.00E+00
Toluene-2,6-diamine	823-40-5	1.92E-11	1.79E-11	0.00E+00	5.53E-11	3.35E-11	0.00E+00	0.00E+00	0.00E+00
Trimethyl benzene	25551-13-7	3.49E-08	3.25E-08	0.00E+00	1.01E-07	6.09E-08	0.00E+00	0.00E+00	0.00E+00
Other Light Semivolatile Compounds (molecular weight <200 g/mole)									
1,1'-Biphenyl	92-52-4	1.05E-07	9.82E-08	0.00E+00	3.04E-07	1.84E-07	0.00E+00	0.00E+00	0.00E+00
1,1-Dimethylhydrazine	57-14-7	8.56E-13	7.98E-13	0.00E+00	2.47E-12	1.50E-12	0.00E+00	0.00E+00	0.00E+00
1,2-Dimethylhydrazine	540-73-8	5.68E-13	5.30E-13	0.00E+00	1.64E-12	9.93E-13	0.00E+00	0.00E+00	0.00E+00
1,2-Diphenylhydrazine	122-66-7	1.15E-08	1.08E-08	0.00E+00	3.33E-08	2.02E-08	0.00E+00	0.00E+00	0.00E+00
1,3-Propane sultone	1120-71-4	3.98E-12	3.71E-12	0.00E+00	1.15E-11	6.95E-12	0.00E+00	0.00E+00	0.00E+00
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	1.13E-09	1.05E-09	0.00E+00	3.26E-09	1.97E-09	0.00E+00	0.00E+00	0.00E+00
2-Propenoic acid	79-10-7	3.57E-11	3.33E-11	0.00E+00	1.03E-10	6.24E-11	0.00E+00	0.00E+00	0.00E+00
4,4'-Methylenedianiline	101-77-9	5.16E-10	4.81E-10	0.00E+00	1.49E-09	9.01E-10	0.00E+00	0.00E+00	0.00E+00
Acetophenone	98-86-2	5.79E-10	5.40E-10	0.00E+00	1.67E-09	1.01E-09	0.00E+00	0.00E+00	0.00E+00
Benzoic acid	65-85-0	9.83E-10	9.16E-10	0.00E+00	2.84E-09	1.72E-09	0.00E+00	0.00E+00	0.00E+00
bis(2-Chloroethoxy)methane	111-91-1	2.65E-10	2.47E-10	0.00E+00	7.64E-10	4.62E-10	0.00E+00	0.00E+00	0.00E+00
bis(2-Chloroethyl) ether	111-44-4	2.65E-10	2.47E-10	0.00E+00	7.65E-10	4.63E-10	0.00E+00	0.00E+00	0.00E+00
Chlorocyclopentadiene	41851-50-7	3.57E-09	3.33E-09	0.00E+00	1.03E-08	6.24E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Cyclohexanol	108-93-0	1.23	4.27E-07	3.41E-07	1.97E-08	1.85E-10	7.49E-10	2.63E-10
Dichloroisopropyl ether	108-60-1	2.58	9.55E-06	7.64E-06	4.42E-07	4.14E-09	1.68E-08	5.89E-09
Dichloromethyl ether	542-88-1	0.58	9.55E-08	7.64E-08	4.42E-09	4.14E-11	1.68E-10	5.89E-11
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	0.16	3.63E-08	2.90E-08	1.68E-09	1.57E-11	6.37E-11	2.24E-11
Dimethylaniline	121-69-7	2.31	5.13E-06	4.10E-06	2.37E-07	2.22E-09	9.00E-09	3.16E-09
Di-n-propylnitrosamine	621-64-7	1.38	6.03E-07	4.82E-07	2.79E-08	2.61E-10	1.06E-09	3.72E-10
Diphenyl ether	101-84-8	4.21	4.07E-04	3.26E-04	1.88E-05	1.77E-07	7.15E-07	2.51E-07
Epichlorohydrin	106-89-8	0.25	4.47E-08	3.58E-08	2.07E-09	1.94E-11	7.85E-11	2.76E-11
Ethyl carbamate (Urethane)	51-79-6	-0.15	1.78E-08	1.42E-08	8.22E-10	7.71E-12	3.12E-11	1.10E-11
Ethyl methanesulfonate	62-50-0	0.05	2.81E-08	2.25E-08	1.30E-09	1.22E-11	4.94E-11	1.74E-11
Ethylene dibromide	106-93-4	1.75	1.41E-06	1.13E-06	6.53E-08	6.12E-10	2.48E-09	8.71E-10
Ethylene glycol	107-21-1	-1.36	1.10E-09	8.77E-10	5.07E-11	4.75E-13	1.92E-12	6.76E-13
Ethylene glycol monobutyl ether	111-76-2	0.83	1.70E-07	1.36E-07	7.85E-09	7.36E-11	2.98E-10	1.05E-10
Ethylene glycol monoethyl ether acetate	111-15-9	0.59	9.77E-08	7.82E-08	4.52E-09	4.24E-11	1.71E-10	6.03E-11
Ethylene thiourea	96-45-7	-0.66	5.50E-09	4.40E-09	2.54E-10	2.38E-12	9.64E-12	3.39E-12
Furfural	98-01-1	0.96	2.29E-07	1.83E-07	1.06E-08	9.93E-11	4.02E-10	1.41E-10
Maleic hydrazide	123-33-1	-0.84	3.63E-09	2.90E-09	1.68E-10	1.57E-12	6.37E-12	2.24E-12
Malononitrile	109-77-3	-0.60	6.31E-09	5.05E-09	2.92E-10	2.74E-12	1.11E-11	3.89E-12
Methyl styrene (mixed isomers)	25013-15-4	3.48	7.59E-05	6.07E-05	3.51E-06	3.29E-08	1.33E-07	4.68E-08
Methylhydrazine	60-34-4	-1.05	2.24E-09	1.79E-09	1.04E-10	9.71E-13	3.93E-12	1.38E-12
N,N-Diphenylamine	122-39-4	3.50	7.94E-05	6.35E-05	3.67E-06	3.44E-08	1.39E-07	4.90E-08
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	2.41	6.46E-06	5.16E-06	2.98E-07	2.80E-09	1.13E-08	3.98E-09
N-Nitrosomorpholine	59-89-2	0.98	2.40E-07	1.92E-07	1.11E-08	1.04E-10	4.21E-10	1.48E-10
N-Nitroso-N,N-dimethylamine	62-75-9	-0.57	6.76E-09	5.41E-09	3.13E-10	2.93E-12	1.19E-11	4.17E-12
o-Anisidine	90-04-0	1.18	3.80E-07	3.04E-07	1.76E-08	1.65E-10	6.67E-10	2.35E-10

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Cyclohexanol	108-93-0	2.25E-10	2.10E-10	0.00E+00	6.50E-10	3.93E-10	0.00E+00	0.00E+00	0.00E+00
Dichloroisopropyl ether	108-60-1	5.04E-09	4.70E-09	0.00E+00	1.46E-08	8.81E-09	0.00E+00	0.00E+00	0.00E+00
Dichloromethyl ether	542-88-1	5.04E-11	4.70E-11	0.00E+00	1.46E-10	8.81E-11	0.00E+00	0.00E+00	0.00E+00
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	1.92E-11	1.79E-11	0.00E+00	5.53E-11	3.35E-11	0.00E+00	0.00E+00	0.00E+00
Dimethylaniline	121-69-7	2.71E-09	2.52E-09	0.00E+00	7.81E-09	4.73E-09	0.00E+00	0.00E+00	0.00E+00
Di-n-propylnitrosamine	621-64-7	3.18E-10	2.97E-10	0.00E+00	9.19E-10	5.56E-10	0.00E+00	0.00E+00	0.00E+00
Diphenyl ether	101-84-8	2.15E-07	2.00E-07	0.00E+00	6.21E-07	3.76E-07	0.00E+00	0.00E+00	0.00E+00
Epichlorohydrin	106-89-8	2.36E-11	2.20E-11	0.00E+00	6.81E-11	4.12E-11	0.00E+00	0.00E+00	0.00E+00
Ethyl carbamate (Urethane)	51-79-6	9.39E-12	8.75E-12	0.00E+00	2.71E-11	1.64E-11	0.00E+00	0.00E+00	0.00E+00
Ethyl methanesulfonate	62-50-0	1.49E-11	1.38E-11	0.00E+00	4.29E-11	2.59E-11	0.00E+00	0.00E+00	0.00E+00
Ethylene dibromide	106-93-4	7.45E-10	6.95E-10	0.00E+00	2.15E-09	1.30E-09	0.00E+00	0.00E+00	0.00E+00
Ethylene glycol	107-21-1	5.79E-13	5.39E-13	0.00E+00	1.67E-12	1.01E-12	0.00E+00	0.00E+00	0.00E+00
Ethylene glycol monobutyl ether	111-76-2	8.96E-11	8.36E-11	0.00E+00	2.59E-10	1.57E-10	0.00E+00	0.00E+00	0.00E+00
Ethylene glycol monoethyl ether acetate	111-15-9	5.16E-11	4.81E-11	0.00E+00	1.49E-10	9.01E-11	0.00E+00	0.00E+00	0.00E+00
Ethylene thiourea	96-45-7	2.90E-12	2.70E-12	0.00E+00	8.37E-12	5.07E-12	0.00E+00	0.00E+00	0.00E+00
Furfural	98-01-1	1.21E-10	1.13E-10	0.00E+00	3.49E-10	2.11E-10	0.00E+00	0.00E+00	0.00E+00
Maleic hydrazide	123-33-1	1.92E-12	1.79E-12	0.00E+00	5.53E-12	3.35E-12	0.00E+00	0.00E+00	0.00E+00
Malononitrile	109-77-3	3.33E-12	3.10E-12	0.00E+00	9.61E-12	5.82E-12	0.00E+00	0.00E+00	0.00E+00
Methyl styrene (mixed isomers)	25013-15-4	4.00E-08	3.73E-08	0.00E+00	1.16E-07	7.00E-08	0.00E+00	0.00E+00	0.00E+00
Methylhydrazine	60-34-4	1.18E-12	1.10E-12	0.00E+00	3.41E-12	2.07E-12	0.00E+00	0.00E+00	0.00E+00
N,N-Diphenylamine	122-39-4	4.19E-08	3.91E-08	0.00E+00	1.21E-07	7.33E-08	0.00E+00	0.00E+00	0.00E+00
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	3.41E-09	3.18E-09	0.00E+00	9.84E-09	5.95E-09	0.00E+00	0.00E+00	0.00E+00
N-Nitrosomorpholine	59-89-2	1.27E-10	1.18E-10	0.00E+00	3.66E-10	2.21E-10	0.00E+00	0.00E+00	0.00E+00
N-Nitroso-N,N-dimethylamine	62-75-9	3.57E-12	3.33E-12	0.00E+00	1.03E-11	6.24E-12	0.00E+00	0.00E+00	0.00E+00
o-Anisidine	90-04-0	2.01E-10	1.87E-10	0.00E+00	5.79E-10	3.51E-10	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	-0.60	6.28E-09	5.02E-09	2.90E-10	2.72E-12	1.10E-11	3.87E-12
p-Phthalic acid	100-21-0	2.00	2.51E-06	2.01E-06	1.16E-07	1.09E-09	4.41E-09	1.55E-09
Pyridine	110-86-1	0.67	1.18E-07	9.40E-08	5.44E-09	5.10E-11	2.06E-10	7.25E-11
Quinoline	91-22-5	2.03	2.69E-06	2.15E-06	1.24E-07	1.17E-09	4.72E-09	1.66E-09
Quinone	106-51-4	0.20	3.98E-08	3.18E-08	1.84E-09	1.73E-11	6.99E-11	2.46E-11
Safrole	94-59-7	2.66	1.15E-05	9.18E-06	5.31E-07	4.98E-09	2.01E-08	7.08E-09
Tetrahydrofuran	109-99-9	0.45	7.03E-08	5.63E-08	3.25E-09	3.05E-11	1.23E-10	4.34E-11
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)								
1,2,4,5-Tetrachlorobenzene	95-94-3	4.64	1.10E-03	8.76E-04	5.06E-05	4.75E-07	1.92E-06	6.76E-07
1,3,5-Trinitrobenzene	99-35-4	1.18	3.79E-07	3.03E-07	1.75E-08	1.64E-10	6.66E-10	2.34E-10
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	4.17	3.72E-04	2.97E-04	1.72E-05	1.61E-07	6.52E-07	2.29E-07
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	4.54	8.71E-04	6.97E-04	4.03E-05	3.78E-07	1.53E-06	5.37E-07
2-sec-Butyl-4,6-dinitrophenol	88-85-7	3.56	9.12E-05	7.30E-05	4.22E-06	3.95E-08	1.60E-07	5.63E-08
3,3'-Dichlorobenzidine	91-94-1	3.58	9.44E-05	7.56E-05	4.37E-06	4.09E-08	1.66E-07	5.83E-08
3,3'-Dimethoxybenzidine	119-90-4	1.81	1.62E-06	1.30E-06	7.50E-08	7.03E-10	2.85E-09	1.00E-09
4-Bromophenylphenyl ether	101-55-3	5.04	2.76E-03	2.21E-03	1.28E-04	1.20E-06	4.84E-06	1.70E-06
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	3.82	1.66E-04	1.33E-04	7.67E-06	7.19E-08	2.91E-07	1.02E-07
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	2.35	5.62E-06	4.50E-06	2.60E-07	2.44E-09	9.87E-09	3.47E-09
Chlorobenzilate	510-15-6	4.38	6.03E-04	4.82E-04	2.79E-05	2.61E-07	1.06E-06	3.72E-07
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	4.58	9.55E-04	7.64E-04	4.42E-05	4.14E-07	1.68E-06	5.89E-07
Hexachlorobenzene	118-74-1	5.50	7.99E-03	6.39E-03	3.69E-04	3.46E-06	1.40E-05	4.93E-06
Hexachlorobutadiene	87-68-3	4.73	1.35E-03	1.08E-03	6.25E-05	5.86E-07	2.37E-06	8.34E-07
Hexachlorocyclopentadiene	77-47-4	4.91	2.03E-03	1.62E-03	9.39E-05	8.80E-07	3.56E-06	1.25E-06

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_t) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	3.31E-12	3.09E-12	0.00E+00	9.57E-12	5.79E-12	0.00E+00	0.00E+00	0.00E+00
p-Phthalic acid	100-21-0	1.33E-09	1.24E-09	0.00E+00	3.83E-09	2.32E-09	0.00E+00	0.00E+00	0.00E+00
Pyridine	110-86-1	6.21E-11	5.78E-11	0.00E+00	1.79E-10	1.08E-10	0.00E+00	0.00E+00	0.00E+00
Quinoline	91-22-5	1.42E-09	1.32E-09	0.00E+00	4.10E-09	2.48E-09	0.00E+00	0.00E+00	0.00E+00
Quinone	106-51-4	2.10E-11	1.96E-11	0.00E+00	6.07E-11	3.67E-11	0.00E+00	0.00E+00	0.00E+00
Safrole	94-59-7	6.06E-09	5.65E-09	0.00E+00	1.75E-08	1.06E-08	0.00E+00	0.00E+00	0.00E+00
Tetrahydrofuran	109-99-9	3.71E-11	3.46E-11	0.00E+00	1.07E-10	6.49E-11	0.00E+00	0.00E+00	0.00E+00
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)									
1,2,4,5-Tetrachlorobenzene	95-94-3	5.78E-07	5.39E-07	0.00E+00	1.67E-06	1.01E-06	0.00E+00	0.00E+00	0.00E+00
1,3,5-Trinitrobenzene	99-35-4	2.00E-10	1.87E-10	0.00E+00	5.78E-10	3.50E-10	0.00E+00	0.00E+00	0.00E+00
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	1.96E-07	1.83E-07	0.00E+00	5.66E-07	3.43E-07	0.00E+00	0.00E+00	0.00E+00
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	4.60E-07	4.29E-07	0.00E+00	1.33E-06	8.03E-07	0.00E+00	0.00E+00	0.00E+00
2-sec-Butyl-4,6-dinitrophenol	88-85-7	4.81E-08	4.49E-08	0.00E+00	1.39E-07	8.41E-08	0.00E+00	0.00E+00	0.00E+00
3,3'-Dichlorobenzidine	91-94-1	4.99E-08	4.65E-08	0.00E+00	1.44E-07	8.71E-08	0.00E+00	0.00E+00	0.00E+00
3,3'-Dimethoxybenzidine	119-90-4	8.57E-10	7.98E-10	0.00E+00	2.47E-09	1.50E-09	0.00E+00	0.00E+00	0.00E+00
4-Bromophenylphenyl ether	101-55-3	1.46E-06	1.36E-06	0.00E+00	4.21E-06	2.55E-06	0.00E+00	0.00E+00	0.00E+00
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	8.76E-08	8.17E-08	0.00E+00	2.53E-07	1.53E-07	0.00E+00	0.00E+00	0.00E+00
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	2.97E-09	2.77E-09	0.00E+00	8.57E-09	5.19E-09	0.00E+00	0.00E+00	0.00E+00
Chlorobenzilate	510-15-6	3.18E-07	2.97E-07	0.00E+00	9.19E-07	5.56E-07	0.00E+00	0.00E+00	0.00E+00
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	5.04E-07	4.70E-07	0.00E+00	1.46E-06	8.81E-07	0.00E+00	0.00E+00	0.00E+00
Hexachlorobenzene	118-74-1	4.22E-06	3.93E-06	0.00E+00	1.22E-05	7.37E-06	0.00E+00	0.00E+00	0.00E+00
Hexachlorobutadiene	87-68-3	7.14E-07	6.65E-07	0.00E+00	2.06E-06	1.25E-06	0.00E+00	0.00E+00	0.00E+00
Hexachlorocyclopentadiene	77-47-4	1.07E-06	9.99E-07	0.00E+00	3.09E-06	1.87E-06	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Hexachloroethane	67-72-1	3.98	2.43E-04	1.94E-04	1.12E-05	1.05E-07	4.26E-07	1.50E-07
Hexachlorophene	70-30-4	7.54	8.72E-01	6.98E-01	4.03E-02	3.78E-04	1.53E-03	5.38E-04
Hexamethylene-1,5-diisocyanate	822-06-0	3.20	3.98E-05	3.18E-05	1.84E-06	1.73E-08	6.99E-08	2.46E-08
Mirex	2385-85-5	6.89	1.95E-01	1.56E-01	9.01E-03	8.45E-05	3.42E-04	1.20E-04
Nitrofen	1836-75-5	5.53	8.51E-03	6.81E-03	3.94E-04	3.69E-06	1.49E-05	5.25E-06
Pentachlorobenzene	608-93-5	5.09	3.08E-03	2.46E-03	1.42E-04	1.34E-06	5.40E-06	1.90E-06
Pentachloronitrobenzene	82-68-8	4.64	1.10E-03	8.81E-04	5.09E-05	4.77E-07	1.93E-06	6.79E-07
Pentachlorophenol	87-86-5	5.08	3.01E-03	2.41E-03	1.39E-04	1.31E-06	5.29E-06	1.86E-06
Picric acid	88-89-1	2.03	2.69E-06	2.15E-06	1.24E-07	1.17E-09	4.72E-09	1.66E-09
Pronamide	23950-58-5	3.51	8.14E-05	6.51E-05	3.76E-06	3.53E-08	1.43E-07	5.02E-08
Strychnine	57-24-9	1.93	2.14E-06	1.71E-06	9.88E-08	9.27E-10	3.75E-09	1.32E-09
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	4.00	2.51E-04	2.01E-04	1.16E-05	1.09E-07	4.41E-07	1.55E-07
Trifluralin	1582-09-8	5.34	5.50E-03	4.40E-03	2.54E-04	2.38E-06	9.64E-06	3.39E-06
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides								
2,4,5-T	93-76-5	3.36	5.75E-05	4.60E-05	2.66E-06	2.49E-08	1.01E-07	3.55E-08
2,4-D and esters	94-75-7	2.81	1.62E-05	1.30E-05	7.50E-07	7.03E-09	2.85E-08	1.00E-08
4,4'-DDD	72-54-8	6.12	3.32E-02	2.66E-02	1.53E-03	1.44E-05	5.82E-05	2.05E-05
4,4'-DDE	72-55-9	6.26	4.54E-02	3.63E-02	2.10E-03	1.97E-05	7.96E-05	2.80E-05
4,4'-DDT	50-29-3	6.07	2.95E-02	2.36E-02	1.36E-03	1.28E-05	5.18E-05	1.82E-05
Aldrin	309-00-2	6.18	3.79E-02	3.03E-02	1.75E-03	1.64E-05	6.66E-05	2.34E-05
alpha-BHC	319-84-6	3.80	1.58E-04	1.27E-04	7.32E-06	6.86E-08	2.78E-07	9.76E-08
beta-BHC	319-85-7	3.83	1.71E-04	1.37E-04	7.91E-06	7.42E-08	3.00E-07	1.06E-07
Chlordane	57-74-9	5.94	2.18E-02	1.74E-02	1.01E-03	9.43E-06	3.82E-05	1.34E-05
Delta-BHC	319-86-8	4.14	3.47E-04	2.77E-04	1.60E-05	1.50E-07	6.08E-07	2.14E-07
Dieldrin	60-57-1	5.27	4.67E-03	3.74E-03	2.16E-04	2.03E-06	8.20E-06	2.88E-06

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Hexachloroethane	67-72-1	1.28E-07	1.19E-07	0.00E+00	3.70E-07	2.24E-07	0.00E+00	0.00E+00	0.00E+00
Hexachlorophene	70-30-4	4.60E-04	4.29E-04	0.00E+00	1.33E-03	8.04E-04	0.00E+00	0.00E+00	0.00E+00
Hexamethylene-1,5-diisocyanate	822-06-0	2.10E-08	1.96E-08	0.00E+00	6.07E-08	3.67E-08	0.00E+00	0.00E+00	0.00E+00
Mirex	2385-85-5	1.03E-04	9.59E-05	0.00E+00	2.97E-04	1.80E-04	0.00E+00	0.00E+00	0.00E+00
Nitrofen	1836-75-5	4.49E-06	4.19E-06	0.00E+00	1.30E-05	7.85E-06	0.00E+00	0.00E+00	0.00E+00
Pentachlorobenzene	608-93-5	1.63E-06	1.52E-06	0.00E+00	4.69E-06	2.84E-06	0.00E+00	0.00E+00	0.00E+00
Pentachloronitrobenzene	82-68-8	5.81E-07	5.42E-07	0.00E+00	1.68E-06	1.02E-06	0.00E+00	0.00E+00	0.00E+00
Pentachlorophenol	87-86-5	1.59E-06	1.48E-06	0.00E+00	4.59E-06	2.78E-06	0.00E+00	0.00E+00	0.00E+00
Picric acid	88-89-1	1.42E-09	1.32E-09	0.00E+00	4.10E-09	2.48E-09	0.00E+00	0.00E+00	0.00E+00
Pronamide	23950-58-5	4.30E-08	4.00E-08	0.00E+00	1.24E-07	7.51E-08	0.00E+00	0.00E+00	0.00E+00
Strychnine	57-24-9	1.13E-09	1.05E-09	0.00E+00	3.26E-09	1.97E-09	0.00E+00	0.00E+00	0.00E+00
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	1.33E-07	1.24E-07	0.00E+00	3.83E-07	2.32E-07	0.00E+00	0.00E+00	0.00E+00
Trifluralin	1582-09-8	2.90E-06	2.70E-06	0.00E+00	8.37E-06	5.07E-06	0.00E+00	0.00E+00	0.00E+00
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides									
2,4,5-T	93-76-5	3.04E-08	2.83E-08	0.00E+00	8.77E-08	5.31E-08	0.00E+00	0.00E+00	0.00E+00
2,4-D and esters	94-75-7	8.56E-09	7.98E-09	0.00E+00	2.47E-08	1.50E-08	0.00E+00	0.00E+00	0.00E+00
4,4'-DDD	72-54-8	1.75E-05	1.63E-05	0.00E+00	5.06E-05	3.06E-05	0.00E+00	0.00E+00	0.00E+00
4,4'-DDE	72-55-9	2.39E-05	2.23E-05	0.00E+00	6.91E-05	4.18E-05	0.00E+00	0.00E+00	0.00E+00
4,4'-DDT	50-29-3	1.56E-05	1.45E-05	0.00E+00	4.49E-05	2.72E-05	0.00E+00	0.00E+00	0.00E+00
Aldrin	309-00-2	2.00E-05	1.87E-05	0.00E+00	5.78E-05	3.50E-05	0.00E+00	0.00E+00	0.00E+00
alpha-BHC	319-84-6	8.35E-08	7.79E-08	0.00E+00	2.41E-07	1.46E-07	0.00E+00	0.00E+00	0.00E+00
beta-BHC	319-85-7	9.03E-08	8.42E-08	0.00E+00	2.61E-07	1.58E-07	0.00E+00	0.00E+00	0.00E+00
Chlordane	57-74-9	1.15E-05	1.07E-05	0.00E+00	3.31E-05	2.01E-05	0.00E+00	0.00E+00	0.00E+00
Delta-BHC	319-86-8	1.83E-07	1.71E-07	0.00E+00	5.28E-07	3.20E-07	0.00E+00	0.00E+00	0.00E+00
Dieldrin	60-57-1	2.47E-06	2.30E-06	0.00E+00	7.12E-06	4.31E-06	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T,) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Endothall	145-73-3	-0.87	3.39E-09	2.71E-09	1.57E-10	1.47E-12	5.95E-12	2.09E-12
Endrin	72-20-8	4.89	1.96E-03	1.57E-03	9.05E-05	8.48E-07	3.43E-06	1.21E-06
gamma-BHC (Lindane)	58-89-9	3.72	1.32E-04	1.05E-04	6.09E-06	5.72E-08	2.31E-07	8.13E-08
Heptachlor	76-44-8	5.02	2.60E-03	2.08E-03	1.20E-04	1.13E-06	4.57E-06	1.61E-06
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	4.53	8.44E-04	6.75E-04	3.90E-05	3.66E-07	1.48E-06	5.21E-07
Silvex (2,4,5-TP)	93-72-1	3.80	1.58E-04	1.27E-04	7.33E-06	6.87E-08	2.78E-07	9.78E-08
Toxaphene	8001-35-2	5.50	7.94E-03	6.35E-03	3.67E-04	3.44E-06	1.39E-05	4.90E-06
Inorganic Chemicals and Compounds								
	Metals							
Aluminum	7429-90-5	NA	1.50E-03	1.50E-03	6.94E-05	8.13E-07	2.63E-06	1.16E-06
Antimony	7440-36-0	NA	1.00E-03	1.00E-03	4.62E-05	5.42E-07	1.75E-06	7.71E-07
Arsenic	7440-38-2	NA	2.00E-03	2.00E-03	9.25E-05	1.08E-06	3.51E-06	1.54E-06
Barium	7440-39-3	NA	1.50E-04	1.50E-04	6.94E-06	8.13E-08	2.63E-07	1.16E-07
Beryllium	7440-41-7	NA	1.00E-03	1.00E-03	4.62E-05	5.42E-07	1.75E-06	7.71E-07
Bismuth	7440-69-9	NA	4.00E-04	4.00E-04	1.85E-05	2.17E-07	7.02E-07	3.08E-07
Boron	7440-42-8	NA	8.00E-04	8.00E-04	3.70E-05	4.34E-07	1.40E-06	6.17E-07
Cadmium	7440-43-9	NA	3.40E-03	3.40E-03	1.57E-04	1.84E-06	5.97E-06	2.62E-06
Calcium	7440-70-2	NA	7.00E-04	7.00E-04	3.24E-05	3.79E-07	1.23E-06	5.40E-07
Chromium[f]	18540-29-9	NA	5.51E-03	5.51E-03	2.55E-04	2.99E-06	9.67E-06	4.25E-06
Cobalt	7440-48-4	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05
Copper	7440-50-8	NA	1.00E-02	1.00E-02	4.62E-04	5.42E-06	1.75E-05	7.71E-06
Iron	7439-89-6	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05
Lead	7439-92-1	NA	3.00E-04	3.00E-04	1.39E-05	1.63E-07	5.26E-07	2.31E-07
Lithium	7439-93-2	NA	1.00E-02	1.00E-02	4.62E-04	5.42E-06	1.75E-05	7.71E-06
Magnesium	7439-95-4	NA	5.00E-03	5.00E-03	2.31E-04	2.71E-06	8.77E-06	3.86E-06

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Endothall	145-73-3	1.79E-12	1.67E-12	0.00E+00	5.16E-12	3.12E-12	0.00E+00	0.00E+00	0.00E+00
Endrin	72-20-8	1.03E-06	9.63E-07	0.00E+00	2.98E-06	1.80E-06	0.00E+00	0.00E+00	0.00E+00
gamma-BHC (Lindane)	58-89-9	6.96E-08	6.49E-08	0.00E+00	2.01E-07	1.22E-07	0.00E+00	0.00E+00	0.00E+00
Heptachlor	76-44-8	1.37E-06	1.28E-06	0.00E+00	3.97E-06	2.40E-06	0.00E+00	0.00E+00	0.00E+00
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	4.46E-07	4.15E-07	0.00E+00	1.29E-06	7.78E-07	0.00E+00	0.00E+00	0.00E+00
Silvex (2,4,5-TP)	93-72-1	8.37E-08	7.80E-08	0.00E+00	2.41E-07	1.46E-07	0.00E+00	0.00E+00	0.00E+00
Toxaphene	8001-35-2	4.19E-06	3.91E-06	0.00E+00	1.21E-05	7.33E-06	0.00E+00	0.00E+00	0.00E+00
Inorganic Chemicals and Compounds									
	Metals								
Aluminum	7429-90-5	7.92E-07	9.23E-07	0.00E+00	2.86E-06	1.73E-06	0.00E+00	0.00E+00	0.00E+00
Antimony	7440-36-0	5.28E-07	6.15E-07	0.00E+00	1.90E-06	1.15E-06	0.00E+00	0.00E+00	0.00E+00
Arsenic	7440-38-2	1.06E-06	1.23E-06	0.00E+00	3.81E-06	2.31E-06	0.00E+00	0.00E+00	0.00E+00
Barium	7440-39-3	7.92E-08	9.23E-08	0.00E+00	2.86E-07	1.73E-07	0.00E+00	0.00E+00	0.00E+00
Beryllium	7440-41-7	5.28E-07	6.15E-07	0.00E+00	1.90E-06	1.15E-06	0.00E+00	0.00E+00	0.00E+00
Bismuth	7440-69-9	2.11E-07	2.46E-07	0.00E+00	7.62E-07	4.61E-07	0.00E+00	0.00E+00	0.00E+00
Boron	7440-42-8	4.22E-07	4.92E-07	0.00E+00	1.52E-06	9.22E-07	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440-43-9	1.79E-06	2.09E-06	0.00E+00	6.48E-06	3.92E-06	0.00E+00	0.00E+00	0.00E+00
Calcium	7440-70-2	3.69E-07	4.31E-07	0.00E+00	1.33E-06	8.07E-07	0.00E+00	0.00E+00	0.00E+00
Chromium[f]	18540-29-9	2.91E-06	3.39E-06	0.00E+00	1.05E-05	6.35E-06	0.00E+00	0.00E+00	0.00E+00
Cobalt	7440-48-4	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00
Copper	7440-50-8	5.28E-06	6.15E-06	0.00E+00	1.90E-05	1.15E-05	0.00E+00	0.00E+00	0.00E+00
Iron	7439-89-6	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00
Lead	7439-92-1	1.58E-07	1.85E-07	0.00E+00	5.71E-07	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Lithium	7439-93-2	5.28E-06	6.15E-06	0.00E+00	1.90E-05	1.15E-05	0.00E+00	0.00E+00	0.00E+00
Magnesium	7439-95-4	2.64E-06	3.08E-06	0.00E+00	9.52E-06	5.76E-06	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T,) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Manganese	7439-96-5	NA	4.00E-04	4.00E-04	1.85E-05	2.17E-07	7.02E-07	3.08E-07
Mercury	7439-97-6	NA	NA	No data	NA	NA	NA	NA
Mercury - Hg+2	7487-94-7	NA	5.21E-03	5.21E-03	2.41E-04	2.82E-06	9.14E-06	4.01E-06
Methylmercury	22967-92-6	NA	7.81E-04	7.81E-04	3.61E-05	4.23E-07	1.37E-06	6.02E-07
Molybdenum	7439-98-7	NA	6.00E-03	6.00E-03	2.77E-04	3.25E-06	1.05E-05	4.63E-06
Nickel	7440-02-0	NA	6.00E-03	6.00E-03	2.77E-04	3.25E-06	1.05E-05	4.63E-06
Potassium	7440-09-7	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05
Rhodium	7440-16-6	NA	2.00E-03	2.00E-03	9.25E-05	1.08E-06	3.51E-06	1.54E-06
Selenium	7782-49-2	NA	1.90E-03	1.90E-03	8.78E-05	1.03E-06	3.33E-06	1.47E-06
Silicon	7440-21-3	NA	4.00E-05	4.00E-05	1.85E-06	2.17E-08	7.02E-08	3.08E-08
Silver	7440-22-4	NA	3.00E-03	3.00E-03	1.39E-04	1.63E-06	5.26E-06	2.31E-06
Sodium	7440-23-5	NA	5.50E-02	5.50E-02	2.54E-03	2.98E-05	9.65E-05	4.24E-05
Strontium	7440-24-6	NA	3.00E-04	3.00E-04	1.39E-05	1.63E-07	5.26E-07	2.31E-07
Tantalum	7440-25-7	NA	6.00E-04	6.00E-04	2.77E-05	3.25E-07	1.05E-06	4.63E-07
Thallium	7440-28-0	NA	4.00E-02	4.00E-02	1.85E-03	2.17E-05	7.02E-05	3.08E-05
Tin	7440-31-5	NA	8.00E-02	8.00E-02	3.70E-03	4.34E-05	1.40E-04	6.17E-05
Tungsten	7440-33-7	NA	4.50E-02	4.50E-02	2.08E-03	2.44E-05	7.90E-05	3.47E-05
Uranium	7440-61-1	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Vanadium	7440-62-2	NA	2.50E-03	2.50E-03	1.16E-04	1.35E-06	4.39E-06	1.93E-06
Yttrium	7440-65-5	NA	3.00E-04	3.00E-04	1.39E-05	1.63E-07	5.26E-07	2.31E-07
Zinc	7440-66-6	NA	1.00E-01	1.00E-01	4.62E-03	5.42E-05	1.75E-04	7.71E-05
Zirconium	7440-67-7	NA	5.50E-03	5.50E-03	2.54E-04	2.98E-06	9.65E-06	4.24E-06
Non-metals and Anions								
Ammonia/Ammonium	7664-41-7	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05
Bromide	24959-67-9	NA	2.50E-02	2.50E-02	1.16E-03	1.35E-05	4.39E-05	1.93E-05
Chloride	16887-00-6	NA	8.00E-02	8.00E-02	3.70E-03	4.34E-05	1.40E-04	6.17E-05
Cyanide	57-12-5	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T,) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Manganese	7439-96-5	2.11E-07	2.46E-07	0.00E+00	7.62E-07	4.61E-07	0.00E+00	0.00E+00	0.00E+00
Mercury	7439-97-6	NA	NA	NA	NA	NA	NA	NA	NA
Mercury - Hg+2	7487-94-7	2.75E-06	3.20E-06	0.00E+00	9.92E-06	6.00E-06	0.00E+00	0.00E+00	0.00E+00
Methylmercury	22967-92-6	4.12E-07	4.80E-07	0.00E+00	1.49E-06	9.00E-07	0.00E+00	0.00E+00	0.00E+00
Molybdenum	7439-98-7	3.17E-06	3.69E-06	0.00E+00	1.14E-05	6.92E-06	0.00E+00	0.00E+00	0.00E+00
Nickel	7440-02-0	3.17E-06	3.69E-06	0.00E+00	1.14E-05	6.92E-06	0.00E+00	0.00E+00	0.00E+00
Potassium	7440-09-7	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00
Rhodium	7440-16-6	1.06E-06	1.23E-06	0.00E+00	3.81E-06	2.31E-06	0.00E+00	0.00E+00	0.00E+00
Selenium	7782-49-2	1.00E-06	1.17E-06	0.00E+00	3.62E-06	2.19E-06	0.00E+00	0.00E+00	0.00E+00
Silicon	7440-21-3	2.11E-08	2.46E-08	0.00E+00	7.62E-08	4.61E-08	0.00E+00	0.00E+00	0.00E+00
Silver	7440-22-4	1.58E-06	1.85E-06	0.00E+00	5.71E-06	3.46E-06	0.00E+00	0.00E+00	0.00E+00
Sodium	7440-23-5	2.90E-05	3.38E-05	0.00E+00	1.05E-04	6.34E-05	0.00E+00	0.00E+00	0.00E+00
Strontium	7440-24-6	1.58E-07	1.85E-07	0.00E+00	5.71E-07	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Tantalum	7440-25-7	3.17E-07	3.69E-07	0.00E+00	1.14E-06	6.92E-07	0.00E+00	0.00E+00	0.00E+00
Thallium	7440-28-0	2.11E-05	2.46E-05	0.00E+00	7.62E-05	4.61E-05	0.00E+00	0.00E+00	0.00E+00
Tin	7440-31-5	4.22E-05	4.92E-05	0.00E+00	1.52E-04	9.22E-05	0.00E+00	0.00E+00	0.00E+00
Tungsten	7440-33-7	2.38E-05	2.77E-05	0.00E+00	8.57E-05	5.19E-05	0.00E+00	0.00E+00	0.00E+00
Uranium	7440-61-1	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Vanadium	7440-62-2	1.32E-06	1.54E-06	0.00E+00	4.76E-06	2.88E-06	0.00E+00	0.00E+00	0.00E+00
Yttrium	7440-65-5	1.58E-07	1.85E-07	0.00E+00	5.71E-07	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Zinc	7440-66-6	5.28E-05	6.15E-05	0.00E+00	1.90E-04	1.15E-04	0.00E+00	0.00E+00	0.00E+00
Zirconium	7440-67-7	2.90E-06	3.38E-06	0.00E+00	1.05E-05	6.34E-06	0.00E+00	0.00E+00	0.00E+00
Non-metals and Anions									
Ammonia/Ammonium	7664-41-7	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00
Bromide	24959-67-9	1.32E-05	1.54E-05	0.00E+00	4.76E-05	2.88E-05	0.00E+00	0.00E+00	0.00E+00
Chloride	16887-00-6	4.22E-05	4.92E-05	0.00E+00	1.52E-04	9.22E-05	0.00E+00	0.00E+00	0.00E+00
Cyanide	57-12-5	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Fluoride	16984-48-8	NA	1.50E-01	1.50E-01	6.94E-03	8.13E-05	2.63E-04	1.16E-04
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	NA	7.00E-03	7.00E-03	3.24E-04	3.79E-06	1.23E-05	5.40E-06
Nitrate	14797-55-8	NA	7.50E-02	7.50E-02	3.47E-03	4.06E-05	1.32E-04	5.78E-05
Nitrite	14797-65-0	NA	7.50E-02	7.50E-02	3.47E-03	4.06E-05	1.32E-04	5.78E-05
Phosphate	14265-44-2	NA	5.50E-02	5.50E-02	2.54E-03	2.98E-05	9.65E-05	4.24E-05
Phosphorus	7723-14-0	NA	5.50E-02	5.50E-02	2.54E-03	2.98E-05	9.65E-05	4.24E-05
Sulfate	14808-79-8	NA	1.00E-01	1.00E-01	4.62E-03	5.42E-05	1.75E-04	7.71E-05
Total Sulfur	63705-05-5	NA	1.00E-01	1.00E-01	4.62E-03	5.42E-05	1.75E-04	7.71E-05
Criteria Pollutants								
Carbon monoxide	630-08-0	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05
Nitrogen dioxide	10102-44-0	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05
Ozone	10028-15-6	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	NA	1.95E-02	1.95E-02	9.02E-04	1.06E-05	3.42E-05	1.50E-05
Radionuclides								
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	NA	2.50E-03	2.50E-03	1.16E-04	1.35E-06	4.39E-06	1.93E-06
Americium-241	14596-10-2	NA	3.50E-06	3.50E-06	1.62E-07	1.90E-09	6.14E-09	2.70E-09
Americium-243	14993-75-0	NA	3.50E-06	3.50E-06	1.62E-07	1.90E-09	6.14E-09	2.70E-09
Antimony-125	14234-35-6	NA	1.00E-03	1.00E-03	4.62E-05	5.42E-07	1.75E-06	7.71E-07
Barium-137m	13981-97-0	NA	1.50E-04	1.50E-04	6.94E-06	8.13E-08	2.63E-07	1.16E-07
Cadmium-113m	14336-66-4	NA	1.20E-04	1.20E-04	5.55E-06	6.50E-08	2.11E-07	9.25E-08
Carbon-14	14762-75-5	NA	NA	NA	NA	NA	NA	NA
Cesium-134	13967-70-9	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05
Cesium-137	10045-97-3	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05
Cobalt-60	10198-40-0	NA	2.00E-02	2.00E-02	9.25E-04	1.08E-05	3.51E-05	1.54E-05

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T,) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Fluoride	16984-48-8	7.92E-05	9.23E-05	0.00E+00	2.86E-04	1.73E-04	0.00E+00	0.00E+00	0.00E+00
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	3.69E-06	4.31E-06	0.00E+00	1.33E-05	8.07E-06	0.00E+00	0.00E+00	0.00E+00
Nitrate	14797-55-8	3.96E-05	4.61E-05	0.00E+00	1.43E-04	8.65E-05	0.00E+00	0.00E+00	0.00E+00
Nitrite	14797-65-0	3.96E-05	4.61E-05	0.00E+00	1.43E-04	8.65E-05	0.00E+00	0.00E+00	0.00E+00
Phosphate	14265-44-2	2.90E-05	3.38E-05	0.00E+00	1.05E-04	6.34E-05	0.00E+00	0.00E+00	0.00E+00
Phosphorus	7723-14-0	2.90E-05	3.38E-05	0.00E+00	1.05E-04	6.34E-05	0.00E+00	0.00E+00	0.00E+00
Sulfate	14808-79-8	5.28E-05	6.15E-05	0.00E+00	1.90E-04	1.15E-04	0.00E+00	0.00E+00	0.00E+00
Total Sulfur	63705-05-5	5.28E-05	6.15E-05	0.00E+00	1.90E-04	1.15E-04	0.00E+00	0.00E+00	0.00E+00
Criteria Pollutants									
Carbon monoxide	630-08-0	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00
Nitrogen dioxide	10102-44-0	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00
Ozone	10028-15-6	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	1.03E-05	1.20E-05	0.00E+00	3.71E-05	2.25E-05	0.00E+00	0.00E+00	0.00E+00
Radionuclides									
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	1.32E-06	1.54E-06	0.00E+00	4.76E-06	2.88E-06	0.00E+00	0.00E+00	0.00E+00
Americium-241	14596-10-2	1.85E-09	2.15E-09	0.00E+00	6.67E-09	4.03E-09	0.00E+00	0.00E+00	0.00E+00
Americium-243	14993-75-0	1.85E-09	2.15E-09	0.00E+00	6.67E-09	4.03E-09	0.00E+00	0.00E+00	0.00E+00
Antimony-125	14234-35-6	5.28E-07	6.15E-07	0.00E+00	1.90E-06	1.15E-06	0.00E+00	0.00E+00	0.00E+00
Barium-137m	13981-97-0	7.92E-08	9.23E-08	0.00E+00	2.86E-07	1.73E-07	0.00E+00	0.00E+00	0.00E+00
Cadmium-113m	14336-66-4	6.33E-08	7.38E-08	0.00E+00	2.29E-07	1.38E-07	0.00E+00	0.00E+00	0.00E+00
Carbon-14	14762-75-5	NA	NA	NA	NA	NA	NA	NA	NA
Cesium-134	13967-70-9	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00
Cesium-137	10045-97-3	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00
Cobalt-60	10198-40-0	1.06E-05	1.23E-05	0.00E+00	3.81E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Curium-242	15510-73-3	NA	3.50E-06	3.50E-06	1.62E-07	1.90E-09	6.14E-09	2.70E-09
Curium-243	15757-87-6	NA	3.50E-06	3.50E-06	1.62E-07	1.90E-09	6.14E-09	2.70E-09
Curium-244	13981-15-2	NA	3.50E-06	3.50E-06	1.62E-07	1.90E-09	6.14E-09	2.70E-09
Europium-152	14683-23-9	NA	5.00E-03	5.00E-03	2.31E-04	2.71E-06	8.77E-06	3.86E-06
Europium-154	15585-10-1	NA	5.00E-03	5.00E-03	2.31E-04	2.71E-06	8.77E-06	3.86E-06
Europium-155	14391-16-3	NA	5.00E-03	5.00E-03	2.31E-04	2.71E-06	8.77E-06	3.86E-06
Iodine-129	15046-84-1	NA	7.00E-03	7.00E-03	3.24E-04	3.79E-06	1.23E-05	5.40E-06
Neptunium-237	13994-20-2	NA	5.50E-03	5.50E-03	2.54E-04	2.98E-06	9.65E-06	4.24E-06
Nickel-59	14336-70-0	NA	6.00E-03	6.00E-03	2.77E-04	3.25E-06	1.05E-05	4.63E-06
Nickel-63	13981-37-8	NA	6.00E-03	6.00E-03	2.77E-04	3.25E-06	1.05E-05	4.63E-06
Niobium-93m	7440-03-1[g]	NA	2.50E-01	2.50E-01	1.16E-02	1.35E-04	4.39E-04	1.93E-04
Plutonium-238	13981-16-3	NA	5.00E-07	5.00E-07	2.31E-08	2.71E-10	8.77E-10	3.86E-10
Plutonium-239	15117-48-3	NA	5.00E-07	5.00E-07	2.31E-08	2.71E-10	8.77E-10	3.86E-10
Plutonium-240	14119-33-6	NA	5.00E-07	5.00E-07	2.31E-08	2.71E-10	8.77E-10	3.86E-10
Plutonium-241	14119-32-5	NA	5.00E-07	5.00E-07	2.31E-08	2.71E-10	8.77E-10	3.86E-10
Plutonium-242	13982-10-0	NA	5.00E-07	5.00E-07	2.31E-08	2.71E-10	8.77E-10	3.86E-10
Protactinium-231	14331-85-2	NA	1.00E-05	1.00E-05	4.62E-07	5.42E-09	1.75E-08	7.71E-09
Radium-226	13982-63-3	NA	2.50E-04	2.50E-04	1.16E-05	1.35E-07	4.39E-07	1.93E-07
Radium-228	15262-20-1	NA	2.50E-04	2.50E-04	1.16E-05	1.35E-07	4.39E-07	1.93E-07
Ruthenium-106	13967-48-1	NA	2.00E-03	2.00E-03	9.25E-05	1.08E-06	3.51E-06	1.54E-06
Samarium-151	15715-94-3	NA	5.00E-03	5.00E-03	2.31E-04	2.71E-06	8.77E-06	3.86E-06
Selenium-79	15758-45-9	NA	1.50E-02	1.50E-02	6.94E-04	8.13E-06	2.63E-05	1.16E-05
Strontium-90	10098-97-2	NA	3.00E-04	3.00E-04	1.39E-05	1.63E-07	5.26E-07	2.31E-07
Technetium-99	14133-76-7	NA	8.50E-03	8.50E-03	3.93E-04	4.61E-06	1.49E-05	6.55E-06
Thorium-229	15594-54-4	NA	6.00E-06	6.00E-06	2.77E-07	3.25E-09	1.05E-08	4.63E-09
Thorium-232	7440-29-1	NA	6.00E-06	6.00E-06	2.77E-07	3.25E-09	1.05E-08	4.63E-09

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Curium-242	15510-73-3	1.85E-09	2.15E-09	0.00E+00	6.67E-09	4.03E-09	0.00E+00	0.00E+00	0.00E+00
Curium-243	15757-87-6	1.85E-09	2.15E-09	0.00E+00	6.67E-09	4.03E-09	0.00E+00	0.00E+00	0.00E+00
Curium-244	13981-15-2	1.85E-09	2.15E-09	0.00E+00	6.67E-09	4.03E-09	0.00E+00	0.00E+00	0.00E+00
Europium-152	14683-23-9	2.64E-06	3.08E-06	0.00E+00	9.52E-06	5.76E-06	0.00E+00	0.00E+00	0.00E+00
Europium-154	15585-10-1	2.64E-06	3.08E-06	0.00E+00	9.52E-06	5.76E-06	0.00E+00	0.00E+00	0.00E+00
Europium-155	14391-16-3	2.64E-06	3.08E-06	0.00E+00	9.52E-06	5.76E-06	0.00E+00	0.00E+00	0.00E+00
Iodine-129	15046-84-1	3.69E-06	4.31E-06	0.00E+00	1.33E-05	8.07E-06	0.00E+00	0.00E+00	0.00E+00
Neptunium-237	13994-20-2	2.90E-06	3.38E-06	0.00E+00	1.05E-05	6.34E-06	0.00E+00	0.00E+00	0.00E+00
Nickel-59	14336-70-0	3.17E-06	3.69E-06	0.00E+00	1.14E-05	6.92E-06	0.00E+00	0.00E+00	0.00E+00
Nickel-63	13981-37-8	3.17E-06	3.69E-06	0.00E+00	1.14E-05	6.92E-06	0.00E+00	0.00E+00	0.00E+00
Niobium-93m	7440-03-1[g]	1.32E-04	1.54E-04	0.00E+00	4.76E-04	2.88E-04	0.00E+00	0.00E+00	0.00E+00
Plutonium-238	13981-16-3	2.64E-10	3.08E-10	0.00E+00	9.52E-10	5.76E-10	0.00E+00	0.00E+00	0.00E+00
Plutonium-239	15117-48-3	2.64E-10	3.08E-10	0.00E+00	9.52E-10	5.76E-10	0.00E+00	0.00E+00	0.00E+00
Plutonium-240	14119-33-6	2.64E-10	3.08E-10	0.00E+00	9.52E-10	5.76E-10	0.00E+00	0.00E+00	0.00E+00
Plutonium-241	14119-32-5	2.64E-10	3.08E-10	0.00E+00	9.52E-10	5.76E-10	0.00E+00	0.00E+00	0.00E+00
Plutonium-242	13982-10-0	2.64E-10	3.08E-10	0.00E+00	9.52E-10	5.76E-10	0.00E+00	0.00E+00	0.00E+00
Protactinium-231	14331-85-2	5.28E-09	6.15E-09	0.00E+00	1.90E-08	1.15E-08	0.00E+00	0.00E+00	0.00E+00
Radium-226	13982-63-3	1.32E-07	1.54E-07	0.00E+00	4.76E-07	2.88E-07	0.00E+00	0.00E+00	0.00E+00
Radium-228	15262-20-1	1.32E-07	1.54E-07	0.00E+00	4.76E-07	2.88E-07	0.00E+00	0.00E+00	0.00E+00
Ruthenium-106	13967-48-1	1.06E-06	1.23E-06	0.00E+00	3.81E-06	2.31E-06	0.00E+00	0.00E+00	0.00E+00
Samarium-151	15715-94-3	2.64E-06	3.08E-06	0.00E+00	9.52E-06	5.76E-06	0.00E+00	0.00E+00	0.00E+00
Selenium-79	15758-45-9	7.92E-06	9.23E-06	0.00E+00	2.86E-05	1.73E-05	0.00E+00	0.00E+00	0.00E+00
Strontium-90	10098-97-2	1.58E-07	1.85E-07	0.00E+00	5.71E-07	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Technetium-99	14133-76-7	4.49E-06	5.23E-06	0.00E+00	1.62E-05	9.80E-06	0.00E+00	0.00E+00	0.00E+00
Thorium-229	15594-54-4	3.17E-09	3.69E-09	0.00E+00	1.14E-08	6.92E-09	0.00E+00	0.00E+00	0.00E+00
Thorium-232	7440-29-1	3.17E-09	3.69E-09	0.00E+00	1.14E-08	6.92E-09	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Tin-126	15832-50-5	NA	8.00E-02	8.00E-02	3.70E-03	4.34E-05	1.40E-04	6.17E-05
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Uranium-233	13968-55-3	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Uranium-234	13966-29-5	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Uranium-235	15117-96-1	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Uranium-236	13982-70-2	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Uranium-238	7440-61-1	NA	2.00E-04	2.00E-04	9.25E-06	1.08E-07	3.51E-07	1.54E-07
Yttrium-90	10098-91-6	NA	3.00E-04	3.00E-04	1.39E-05	1.63E-07	5.26E-07	2.31E-07
Zirconium-93	15751-77-6	NA	5.50E-03	5.50E-03	2.54E-04	2.98E-06	9.65E-06	4.24E-06

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_s) ([mg/kg tissue]/[mg/kg soil])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Tin-126	15832-50-5	4.22E-05	4.92E-05	0.00E+00	1.52E-04	9.22E-05	0.00E+00	0.00E+00	0.00E+00
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Uranium-233	13968-55-3	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Uranium-234	13966-29-5	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Uranium-235	15117-96-1	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Uranium-236	13982-70-2	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Uranium-238	7440-61-1	1.06E-07	1.23E-07	0.00E+00	3.81E-07	2.31E-07	0.00E+00	0.00E+00	0.00E+00
Yttrium-90	10098-91-6	1.58E-07	1.85E-07	0.00E+00	5.71E-07	3.46E-07	0.00E+00	0.00E+00	0.00E+00
Zirconium-93	15751-77-6	2.90E-06	3.38E-06	0.00E+00	1.05E-05	6.34E-06	0.00E+00	0.00E+00	0.00E+00

Table C2-2 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Soil by Mammals and Birds

Notes/Sources

NA = Not applicable.

[a] From Appendix B, Table B-1.

[b] Ingestion-to-tissue transfer factor (mg/kgBW per mg/d); from Table C2-1.

[c] Bird Ba is the same as Mammal Ba multiplied by 0.8 for organic COPCs, and the same as Mammal Ba for inorganic COPCs and ROPCs.

[d] $Ba \times IR_F \times SF \times BW$ for each receptor, where IR_F is the daily food ingestion rate (kg/kgBW/d), SF is the total amount of soil ingested daily per unit of food ingested, and BW is the body weight (kg) of the receptor (Risk Assessment Work Plan section 8.1.3.3).

[e] Values for Aroclor-1254 were used for polychlorinated biphenyl mixtures.

[f] Values for Cr(VI) were used for calculations.

[g] Chemical Abstracts Service Registry number for niobium metal.

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Organic Compounds								
Aromatic Halogenated Hydrocarbons								
2,3,4,6-Tetrachlorophenol	58-90-2	4.30	5.02E-04	4.02E-04	1.16E-03	1.09E-05	3.36E-06	1.06E-06
4-Chloro-3-methylphenol	59-50-7	3.10	3.16E-05	2.53E-05	7.31E-05	6.85E-07	2.12E-07	6.66E-08
Aromatic Nonhalogenated Hydrocarbons								
2-Nitrotoluene	88-72-2	2.30	5.01E-06	4.01E-06	1.16E-05	1.09E-07	3.36E-08	1.06E-08
4-Nitrobiphenyl	92-93-3	3.77	1.48E-04	1.18E-04	3.42E-04	3.21E-06	9.91E-07	3.11E-07
Benzaldehyde	100-52-7	1.48	7.54E-07	6.03E-07	1.74E-06	1.63E-08	5.05E-09	1.59E-09
Benzene	71-43-2	2.14	3.44E-06	2.75E-06	7.95E-06	7.46E-08	2.30E-08	7.24E-09
Benzyl alcohol	100-51-6	1.10	3.16E-07	2.53E-07	7.32E-07	6.86E-09	2.12E-09	6.66E-10
Ethyl benzene	100-41-4	3.12	3.34E-05	2.67E-05	7.72E-05	7.24E-07	2.24E-07	7.03E-08
m-Xylene	108-38-3	3.20	3.99E-05	3.20E-05	9.23E-05	8.66E-07	2.67E-07	8.41E-08
o-Xylene	95-47-6	3.13	3.39E-05	2.71E-05	7.84E-05	7.35E-07	2.27E-07	7.14E-08
p-Xylene	106-42-3	3.17	3.72E-05	2.97E-05	8.59E-05	8.06E-07	2.49E-07	7.83E-08
Styrene	100-42-5	2.93	2.13E-05	1.71E-05	4.93E-05	4.62E-07	1.43E-07	4.49E-08
Toluene	108-88-3	2.67	1.17E-05	9.34E-06	2.70E-05	2.53E-07	7.82E-08	2.46E-08
Non-aromatic Nonhalogenated Hydrocarbons								
1,2-Epoxybutane	106-88-7	0.86	1.82E-07	1.46E-07	4.21E-07	3.94E-09	1.22E-09	3.83E-10
1,3-Butadiene	106-99-0	1.99	2.45E-06	1.96E-06	5.67E-06	5.32E-08	1.64E-08	5.17E-09
1,4-Dioxane	123-91-1	-0.27	1.36E-08	1.09E-08	3.14E-08	2.94E-10	9.08E-11	2.86E-11
1-Methylpropyl alcohol	78-92-2	0.61	1.02E-07	8.19E-08	2.37E-07	2.22E-09	6.85E-10	2.15E-10
1-Nitropropane	108-03-2	0.87	1.86E-07	1.49E-07	4.30E-07	4.04E-09	1.25E-09	3.92E-10
2,2,4-Trimethylpentane	540-84-1	5.02	2.63E-03	2.10E-03	6.08E-03	5.70E-05	1.76E-05	5.54E-06
2-Butanone	78-93-3	0.28	4.80E-08	3.84E-08	1.11E-07	1.04E-09	3.21E-10	1.01E-10
2-Butenaldehyde (2-Butenal)	4170-30-3	0.55	8.91E-08	7.13E-08	2.06E-07	1.93E-09	5.97E-10	1.88E-10
2-Ethoxyethanol	110-80-5	-0.10	2.00E-08	1.60E-08	4.61E-08	4.33E-10	1.34E-10	4.20E-11

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Organic Compounds									
Aromatic Halogenated Hydrocarbons									
2,3,4,6-Tetrachlorophenol	58-90-2	1.15E-04	2.47E-06	4.45E-05	4.78E-05	1.49E-05	1.73E-04	1.81E-04	5.97E-05
4-Chloro-3-methylphenol	59-50-7	7.26E-06	1.56E-07	2.80E-06	3.01E-06	9.41E-07	1.09E-05	1.14E-05	3.76E-06
Aromatic Nonhalogenated Hydrocarbons									
2-Nitrotoluene	88-72-2	1.15E-06	2.47E-08	4.44E-07	4.77E-07	1.49E-07	1.72E-06	1.80E-06	5.96E-07
4-Nitrobiphenyl	92-93-3	3.39E-05	7.28E-07	1.31E-05	1.41E-05	4.40E-06	5.09E-05	5.32E-05	1.76E-05
Benzaldehyde	100-52-7	1.73E-07	3.71E-09	6.68E-08	7.18E-08	2.24E-08	2.59E-07	2.71E-07	8.97E-08
Benzene	71-43-2	7.89E-07	1.69E-08	3.05E-07	3.28E-07	1.02E-07	1.18E-06	1.24E-06	4.09E-07
Benzyl alcohol	100-51-6	7.26E-08	1.56E-09	2.80E-08	3.01E-08	9.42E-09	1.09E-07	1.14E-07	3.77E-08
Ethyl benzene	100-41-4	7.67E-06	1.64E-07	2.96E-06	3.18E-06	9.94E-07	1.15E-05	1.20E-05	3.98E-06
m-Xylene	108-38-3	9.17E-06	1.96E-07	3.54E-06	3.80E-06	1.19E-06	1.37E-05	1.44E-05	4.75E-06
o-Xylene	95-47-6	7.78E-06	1.67E-07	3.01E-06	3.23E-06	1.01E-06	1.17E-05	1.22E-05	4.04E-06
p-Xylene	106-42-3	8.53E-06	1.83E-07	3.29E-06	3.54E-06	1.11E-06	1.28E-05	1.34E-05	4.42E-06
Styrene	100-42-5	4.89E-06	1.05E-07	1.89E-06	2.03E-06	6.34E-07	7.34E-06	7.68E-06	2.54E-06
Toluene	108-88-3	2.68E-06	5.75E-08	1.04E-06	1.11E-06	3.47E-07	4.02E-06	4.20E-06	1.39E-06
Non-aromatic Nonhalogenated Hydrocarbons									
1,2-Epoxybutane	106-88-7	4.18E-08	8.95E-10	1.61E-08	1.73E-08	5.41E-09	6.26E-08	6.55E-08	2.17E-08
1,3-Butadiene	106-99-0	5.63E-07	1.21E-08	2.18E-07	2.34E-07	7.30E-08	8.45E-07	8.84E-07	2.92E-07
1,4-Dioxane	123-91-1	3.11E-09	6.67E-11	1.20E-09	1.29E-09	4.04E-10	4.67E-09	4.88E-09	1.61E-09
1-Methylpropyl alcohol	78-92-2	2.35E-08	5.03E-10	9.07E-09	9.75E-09	3.04E-09	3.52E-08	3.68E-08	1.22E-08
1-Nitropropane	108-03-2	4.27E-08	9.16E-10	1.65E-08	1.77E-08	5.54E-09	6.41E-08	6.70E-08	2.22E-08
2,2,4-Trimethylpentane	540-84-1	6.04E-04	1.29E-05	2.33E-04	2.50E-04	7.83E-05	9.05E-04	9.47E-04	3.13E-04
2-Butanone	78-93-3	1.10E-08	2.36E-10	4.25E-09	4.57E-09	1.43E-09	1.65E-08	1.73E-08	5.71E-09
2-Butenaldehyde (2-Butenal)	4170-30-3	2.04E-08	4.38E-10	7.90E-09	8.49E-09	2.65E-09	3.07E-08	3.21E-08	1.06E-08
2-Ethoxyethanol	110-80-5	4.58E-09	9.82E-11	1.77E-09	1.90E-09	5.94E-10	6.87E-09	7.18E-09	2.37E-09

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
2-Heptanone	110-43-0	1.98	2.40E-06	1.92E-06	5.55E-06	5.20E-08	1.61E-08	5.05E-09
2-Hexanone	591-78-6	1.38	6.03E-07	4.82E-07	1.39E-06	1.31E-08	4.04E-09	1.27E-09
2-Methoxyethanol	109-86-4	-0.77	4.27E-09	3.41E-09	9.86E-09	9.25E-11	2.86E-11	8.98E-12
2-Methyl-2-propanol	75-65-0	0.35	5.62E-08	4.50E-08	1.30E-07	1.22E-09	3.77E-10	1.18E-10
2-Methyl-2-propenenitrile	126-98-7	0.54	8.72E-08	6.97E-08	2.01E-07	1.89E-09	5.84E-10	1.84E-10
2-Methylaziridine	75-55-8	-0.60	6.31E-09	5.05E-09	1.46E-08	1.37E-10	4.23E-11	1.33E-11
2-Methylpropyl alcohol	78-83-1	0.76	1.45E-07	1.16E-07	3.34E-07	3.13E-09	9.68E-10	3.04E-10
2-Pentanone	107-87-9	0.91	2.04E-07	1.63E-07	4.72E-07	4.43E-09	1.37E-09	4.30E-10
2-Propanone (Acetone)	67-64-1	-0.22	1.51E-08	1.21E-08	3.49E-08	3.27E-10	1.01E-10	3.18E-11
2-Propene-1-ol	107-18-6	0.17	3.72E-08	2.97E-08	8.59E-08	8.05E-10	2.49E-10	7.82E-11
2-Propyl alcohol	67-63-0	0.05	2.82E-08	2.25E-08	6.52E-08	6.11E-10	1.89E-10	5.93E-11
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	0.99	2.45E-07	1.96E-07	5.67E-07	5.32E-09	1.64E-09	5.17E-10
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	1.19	3.89E-07	3.11E-07	9.00E-07	8.44E-09	2.61E-09	8.20E-10
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.72	1.32E-06	1.05E-06	3.05E-06	2.86E-08	8.83E-09	2.78E-09
Acetaldehyde	75-07-0	-0.22	1.51E-08	1.21E-08	3.50E-08	3.28E-10	1.01E-10	3.18E-11
Acetamide	60-35-5	-1.26	1.38E-09	1.10E-09	3.19E-09	2.99E-11	9.25E-12	2.91E-12
Acetic acid	64-19-7	-0.17	1.70E-08	1.36E-08	3.93E-08	3.68E-10	1.14E-10	3.58E-11
Acetic acid ethyl ester	141-78-6	0.73	1.35E-07	1.08E-07	3.12E-07	2.92E-09	9.03E-10	2.84E-10
Acetic acid n-butyl ester	123-86-4	1.73	1.35E-06	1.08E-06	3.12E-06	2.92E-08	9.03E-09	2.84E-09
Acetonitrile	75-05-8	-0.34	1.15E-08	9.18E-09	2.65E-08	2.49E-10	7.69E-11	2.42E-11
Acrolein	107-02-8	-0.01	2.46E-08	1.97E-08	5.69E-08	5.34E-10	1.65E-10	5.18E-11

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
2-Heptanone	110-43-0	5.51E-07	1.18E-08	2.13E-07	2.28E-07	7.14E-08	8.26E-07	8.64E-07	2.85E-07
2-Hexanone	591-78-6	1.38E-07	2.96E-09	5.34E-08	5.74E-08	1.79E-08	2.07E-07	2.17E-07	7.17E-08
2-Methoxyethanol	109-86-4	9.79E-10	2.10E-11	3.78E-10	4.06E-10	1.27E-10	1.47E-09	1.54E-09	5.08E-10
2-Methyl-2-propanol	75-65-0	1.29E-08	2.77E-10	4.98E-09	5.36E-09	1.67E-09	1.94E-08	2.02E-08	6.69E-09
2-Methyl-2-propenenitrile	126-98-7	2.00E-08	4.29E-10	7.72E-09	8.30E-09	2.59E-09	3.00E-08	3.14E-08	1.04E-08
2-Methylaziridine	75-55-8	1.45E-09	3.10E-11	5.59E-10	6.01E-10	1.88E-10	2.17E-09	2.27E-09	7.51E-10
2-Methylpropyl alcohol	78-83-1	3.32E-08	7.11E-10	1.28E-08	1.38E-08	4.30E-09	4.97E-08	5.20E-08	1.72E-08
2-Pentanone	107-87-9	4.69E-08	1.00E-09	1.81E-08	1.94E-08	6.07E-09	7.03E-08	7.35E-08	2.43E-08
2-Propanone (Acetone)	67-64-1	3.46E-09	7.43E-11	1.34E-09	1.44E-09	4.49E-10	5.19E-09	5.43E-09	1.80E-09
2-Propene-1-ol	107-18-6	8.53E-09	1.83E-10	3.29E-09	3.54E-09	1.11E-09	1.28E-08	1.34E-08	4.42E-09
2-Propyl alcohol	67-63-0	6.47E-09	1.39E-10	2.50E-09	2.68E-09	8.38E-10	9.70E-09	1.01E-08	3.35E-09
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	5.63E-08	1.21E-09	2.18E-08	2.34E-08	7.30E-09	8.45E-08	8.84E-08	2.92E-08
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	8.94E-08	1.92E-09	3.45E-08	3.71E-08	1.16E-08	1.34E-07	1.40E-07	4.63E-08
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	3.03E-07	6.49E-09	1.17E-07	1.26E-07	3.92E-08	4.54E-07	4.75E-07	1.57E-07
Acetaldehyde	75-07-0	3.47E-09	7.44E-11	1.34E-09	1.44E-09	4.50E-10	5.20E-09	5.44E-09	1.80E-09
Acetamide	60-35-5	3.17E-10	6.79E-12	1.22E-10	1.31E-10	4.11E-11	4.75E-10	4.97E-10	1.64E-10
Acetic acid	64-19-7	3.90E-09	8.36E-11	1.50E-09	1.62E-09	5.05E-10	5.84E-09	6.11E-09	2.02E-09
Acetic acid ethyl ester	141-78-6	3.10E-08	6.64E-10	1.20E-08	1.28E-08	4.01E-09	4.64E-08	4.86E-08	1.61E-08
Acetic acid n-butyl ester	123-86-4	3.10E-07	6.64E-09	1.20E-07	1.28E-07	4.01E-08	4.64E-07	4.86E-07	1.61E-07
Acetonitrile	75-05-8	2.63E-09	5.65E-11	1.02E-09	1.09E-09	3.42E-10	3.95E-09	4.13E-09	1.37E-09
Acrolein	107-02-8	5.65E-09	1.21E-10	2.18E-09	2.34E-09	7.32E-10	8.47E-09	8.86E-09	2.93E-09

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Acrylonitrile	107-13-1	0.25	4.47E-08	3.58E-08	1.03E-07	9.69E-10	2.99E-10	9.41E-11
Bis(isopropyl)ether	108-20-3	1.56	9.12E-07	7.30E-07	2.11E-06	1.98E-08	6.11E-09	1.92E-09
Butane	106-97-8	2.89	1.95E-05	1.56E-05	4.51E-05	4.23E-07	1.31E-07	4.11E-08
Carbon disulfide	75-15-0	2.00	2.51E-06	2.01E-06	5.81E-06	5.44E-08	1.68E-08	5.29E-09
Cyanogen	460-19-5	0.07	2.95E-08	2.36E-08	6.82E-08	6.40E-10	1.98E-10	6.21E-11
Cyclohexane	110-82-7	3.44	6.92E-05	5.53E-05	1.60E-04	1.50E-06	4.63E-07	1.46E-07
Cyclohexanone	108-94-1	0.81	1.62E-07	1.30E-07	3.75E-07	3.52E-09	1.09E-09	3.41E-10
Cyclohexene	110-83-8	2.86	1.82E-05	1.46E-05	4.21E-05	3.94E-07	1.22E-07	3.83E-08
Cyclopentane	287-92-3	3.00	2.51E-05	2.01E-05	5.81E-05	5.44E-07	1.68E-07	5.29E-08
Ethyl alcohol	64-17-5	-0.31	1.23E-08	9.84E-09	2.84E-08	2.67E-10	8.24E-11	2.59E-11
Ethyl ether	60-29-7	0.89	1.95E-07	1.56E-07	4.51E-07	4.23E-09	1.31E-09	4.11E-10
Ethyl methacrylate	97-63-2	1.59	9.77E-07	7.82E-07	2.26E-06	2.12E-08	6.54E-09	2.06E-09
Formaldehyde	50-00-0	0.34	5.56E-08	4.45E-08	1.29E-07	1.21E-09	3.72E-10	1.17E-10
Formamide	75-12-7	-1.51	7.76E-10	6.21E-10	1.79E-09	1.68E-11	5.20E-12	1.63E-12
Formic acid	64-18-6	-0.54	7.28E-09	5.83E-09	1.68E-08	1.58E-10	4.88E-11	1.53E-11
Formic acid, methyl ester	107-31-3	-0.26	1.37E-08	1.09E-08	3.16E-08	2.96E-10	9.16E-11	2.88E-11
Glycidylaldehyde	765-34-4	-0.12	1.91E-08	1.52E-08	4.40E-08	4.13E-10	1.28E-10	4.01E-11
Methyl acetate	79-20-9	0.46	7.24E-08	5.79E-08	1.67E-07	1.57E-09	4.85E-10	1.52E-10
Methyl alcohol	67-56-1	-0.71	4.90E-09	3.92E-09	1.13E-08	1.06E-10	3.28E-11	1.03E-11
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	0.79	1.55E-07	1.24E-07	3.58E-07	3.36E-09	1.04E-09	3.26E-10
Methyl tert-butyl ether	1634-04-4	0.94	2.19E-07	1.75E-07	5.06E-07	4.74E-09	1.47E-09	4.61E-10
Methylacetylene	74-99-7	0.94	2.19E-07	1.75E-07	5.06E-07	4.74E-09	1.47E-09	4.61E-10
Methylcyclohexane	108-87-2	4.10	3.16E-04	2.53E-04	7.31E-04	6.85E-06	2.12E-06	6.66E-07
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	0.88	1.91E-07	1.52E-07	4.40E-07	4.13E-09	1.28E-09	4.01E-10

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Acrylonitrile	107-13-1	1.03E-08	2.20E-10	3.96E-09	4.26E-09	1.33E-09	1.54E-08	1.61E-08	5.32E-09
Bis(isopropyl)ether	108-20-3	2.09E-07	4.49E-09	8.08E-08	8.69E-08	2.71E-08	3.14E-07	3.28E-07	1.09E-07
Butane	106-97-8	4.47E-06	9.59E-08	1.73E-06	1.86E-06	5.80E-07	6.71E-06	7.02E-06	2.32E-06
Carbon disulfide	75-15-0	5.76E-07	1.24E-08	2.23E-07	2.39E-07	7.47E-08	8.64E-07	9.04E-07	2.99E-07
Cyanogen	460-19-5	6.77E-09	1.45E-10	2.62E-09	2.81E-09	8.78E-10	1.02E-08	1.06E-08	3.51E-09
Cyclohexane	110-82-7	1.59E-05	3.40E-07	6.13E-06	6.59E-06	2.06E-06	2.38E-05	2.49E-05	8.23E-06
Cyclohexanone	108-94-1	3.72E-08	7.98E-10	1.44E-08	1.54E-08	4.82E-09	5.58E-08	5.84E-08	1.93E-08
Cyclohexene	110-83-8	4.18E-06	8.95E-08	1.61E-06	1.73E-06	5.41E-07	6.26E-06	6.55E-06	2.17E-06
Cyclopentane	287-92-3	5.76E-06	1.24E-07	2.23E-06	2.39E-06	7.47E-07	8.64E-06	9.04E-06	2.99E-06
Ethyl alcohol	64-17-5	2.82E-09	6.05E-11	1.09E-09	1.17E-09	3.66E-10	4.23E-09	4.43E-09	1.46E-09
Ethyl ether	60-29-7	4.47E-08	9.59E-10	1.73E-08	1.86E-08	5.80E-09	6.71E-08	7.02E-08	2.32E-08
Ethyl methacrylate	97-63-2	2.24E-07	4.81E-09	8.66E-08	9.31E-08	2.91E-08	3.36E-07	3.52E-07	1.16E-07
Formaldehyde	50-00-0	1.28E-08	2.74E-10	4.93E-09	5.29E-09	1.65E-09	1.91E-08	2.00E-08	6.62E-09
Formamide	75-12-7	1.78E-10	3.82E-12	6.88E-11	7.39E-11	2.31E-11	2.67E-10	2.79E-10	9.24E-11
Formic acid	64-18-6	1.67E-09	3.58E-11	6.46E-10	6.94E-10	2.17E-10	2.51E-09	2.62E-09	8.67E-10
Formic acid, methyl ester	107-31-3	3.14E-09	6.73E-11	1.21E-09	1.30E-09	4.07E-10	4.71E-09	4.92E-09	1.63E-09
Glycidylaldehyde	765-34-4	4.37E-09	9.37E-11	1.69E-09	1.81E-09	5.67E-10	6.56E-09	6.86E-09	2.27E-09
Methyl acetate	79-20-9	1.66E-08	3.56E-10	6.42E-09	6.89E-09	2.15E-09	2.49E-08	2.61E-08	8.62E-09
Methyl alcohol	67-56-1	1.12E-09	2.41E-11	4.34E-10	4.66E-10	1.46E-10	1.69E-09	1.76E-09	5.83E-10
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	3.55E-08	7.62E-10	1.37E-08	1.47E-08	4.61E-09	5.33E-08	5.58E-08	1.84E-08
Methyl tert-butyl ether	1634-04-4	5.02E-08	1.08E-09	1.94E-08	2.08E-08	6.51E-09	7.53E-08	7.88E-08	2.60E-08
Methylacetylene	74-99-7	5.02E-08	1.08E-09	1.94E-08	2.08E-08	6.51E-09	7.53E-08	7.88E-08	2.60E-08
Methylcyclohexane	108-87-2	7.26E-05	1.56E-06	2.80E-05	3.01E-05	9.41E-06	1.09E-04	1.14E-04	3.76E-05
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	4.37E-08	9.37E-10	1.69E-08	1.81E-08	5.67E-09	6.56E-08	6.86E-08	2.27E-08

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
n-Heptane	142-82-5	4.66	1.15E-03	9.19E-04	2.65E-03	2.49E-05	7.69E-06	2.42E-06
n-Hexane	110-54-3	4.11	3.24E-04	2.59E-04	7.48E-04	7.01E-06	2.17E-06	6.81E-07
Nitromethane	75-52-5	-0.35	1.12E-08	8.98E-09	2.59E-08	2.43E-10	7.51E-11	2.36E-11
n-Nonane	111-84-2	5.65	1.12E-02	8.98E-03	2.59E-02	2.43E-04	7.51E-05	2.36E-05
n-Octane	111-65-9	4.00	2.51E-04	2.01E-04	5.81E-04	5.44E-06	1.68E-06	5.29E-07
n-Pentane	109-66-0	3.21	4.07E-05	3.26E-05	9.42E-05	8.83E-07	2.73E-07	8.58E-08
n-Propionaldehyde	123-38-6	0.59	9.77E-08	7.82E-08	2.26E-07	2.12E-09	6.55E-10	2.06E-10
n-Propyl alcohol	71-23-8	0.25	4.47E-08	3.57E-08	1.03E-07	9.68E-10	2.99E-10	9.41E-11
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	-0.30	1.26E-08	1.01E-08	2.91E-08	2.73E-10	8.43E-11	2.65E-11
p-Cymene	99-87-6	4.10	3.16E-04	2.53E-04	7.31E-04	6.85E-06	2.12E-06	6.66E-07
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	-0.38	1.05E-08	8.38E-09	2.42E-08	2.27E-10	7.01E-11	2.20E-11
Propionic acid	79-09-4	0.33	5.37E-08	4.30E-08	1.24E-07	1.16E-09	3.60E-10	1.13E-10
Propionitrile	107-12-0	0.16	3.63E-08	2.90E-08	8.39E-08	7.87E-10	2.43E-10	7.64E-11
Propylene glycol monomethyl ether	107-98-2	-0.49	8.13E-09	6.50E-09	1.88E-08	1.76E-10	5.44E-11	1.71E-11
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	1.45	7.08E-07	5.66E-07	1.64E-06	1.53E-08	4.74E-09	1.49E-09
Trimethylamine	75-50-3	0.16	3.63E-08	2.90E-08	8.39E-08	7.87E-10	2.43E-10	7.64E-11
Vinyl acetate	108-05-4	0.70	1.26E-07	1.00E-07	2.90E-07	2.72E-09	8.41E-10	2.64E-10
Non-aromatic Halogenated Hydrocarbons								
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	3.41	6.46E-05	5.17E-05	1.49E-04	1.40E-06	4.32E-07	1.36E-07
1,1,1,2-Tetrachloroethane	630-20-6	2.63	1.07E-05	8.58E-06	2.48E-05	2.32E-07	7.18E-08	2.26E-08
1,1,1-Trichloroethane	71-55-6	2.42	6.63E-06	5.31E-06	1.53E-05	1.44E-07	4.44E-08	1.40E-08
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	3.73	1.35E-04	1.08E-04	3.12E-04	2.92E-06	9.03E-07	2.84E-07
1,1,2,2-Tetrachloroethane	79-34-5	4.64	1.11E-03	8.84E-04	2.55E-03	2.40E-05	7.40E-06	2.33E-06

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
n-Heptane	142-82-5	2.64E-04	5.65E-06	1.02E-04	1.09E-04	3.42E-05	3.95E-04	4.13E-04	1.37E-04
n-Hexane	110-54-3	7.43E-05	1.59E-06	2.87E-05	3.08E-05	9.63E-06	1.11E-04	1.16E-04	3.85E-05
Nitromethane	75-52-5	2.58E-09	5.52E-11	9.94E-10	1.07E-09	3.34E-10	3.86E-09	4.04E-09	1.34E-09
n-Nonane	111-84-2	2.58E-03	5.52E-05	9.94E-04	1.07E-03	3.34E-04	3.86E-03	4.04E-03	1.34E-03
n-Octane	111-65-9	5.76E-05	1.24E-06	2.23E-05	2.39E-05	7.47E-06	8.64E-05	9.04E-05	2.99E-05
n-Pentane	109-66-0	9.35E-06	2.00E-07	3.61E-06	3.88E-06	1.21E-06	1.40E-05	1.47E-05	4.85E-06
n-Propionaldehyde	123-38-6	2.24E-08	4.81E-10	8.66E-09	9.31E-09	2.91E-09	3.36E-08	3.52E-08	1.16E-08
n-Propyl alcohol	71-23-8	1.03E-08	2.20E-10	3.96E-09	4.25E-09	1.33E-09	1.54E-08	1.61E-08	5.32E-09
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	2.89E-09	6.19E-11	1.12E-09	1.20E-09	3.74E-10	4.33E-09	4.53E-09	1.50E-09
p-Cymene	99-87-6	7.26E-05	1.56E-06	2.80E-05	3.01E-05	9.41E-06	1.09E-04	1.14E-04	3.76E-05
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	2.40E-09	5.15E-11	9.28E-10	9.97E-10	3.12E-10	3.60E-09	3.77E-09	1.25E-09
Propionic acid	79-09-4	1.23E-08	2.64E-10	4.76E-09	5.11E-09	1.60E-09	1.85E-08	1.93E-08	6.39E-09
Propionitrile	107-12-0	8.33E-09	1.79E-10	3.22E-09	3.46E-09	1.08E-09	1.25E-08	1.31E-08	4.32E-09
Propylene glycol monomethyl ether	107-98-2	1.87E-09	4.00E-11	7.20E-10	7.74E-10	2.42E-10	2.80E-09	2.93E-09	9.67E-10
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	1.62E-07	3.48E-09	6.27E-08	6.74E-08	2.11E-08	2.44E-07	2.55E-07	8.42E-08
Trimethylamine	75-50-3	8.33E-09	1.79E-10	3.22E-09	3.46E-09	1.08E-09	1.25E-08	1.31E-08	4.32E-09
Vinyl acetate	108-05-4	2.88E-08	6.18E-10	1.11E-08	1.20E-08	3.74E-09	4.32E-08	4.52E-08	1.49E-08
Non-aromatic Halogenated Hydrocarbons									
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	1.48E-05	3.18E-07	5.72E-06	6.15E-06	1.92E-06	2.22E-05	2.32E-05	7.68E-06
1,1,1,2-Tetrachloroethane	630-20-6	2.46E-06	5.28E-08	9.51E-07	1.02E-06	3.19E-07	3.69E-06	3.86E-06	1.28E-06
1,1,1-Trichloroethane	71-55-6	1.52E-06	3.26E-08	5.88E-07	6.32E-07	1.97E-07	2.28E-06	2.39E-06	7.89E-07
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	3.10E-05	6.64E-07	1.20E-05	1.28E-05	4.01E-06	4.64E-05	4.86E-05	1.61E-05
1,1,2,2-Tetrachloroethane	79-34-5	2.54E-04	5.44E-06	9.79E-05	1.05E-04	3.29E-05	3.80E-04	3.98E-04	1.32E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,1,2,2-Tetrachloroethene	127-18-4	2.55	8.82E-06	7.05E-06	2.04E-05	1.91E-07	5.90E-08	1.86E-08
1,1,2-Trichloroethane	79-00-5	2.10	3.14E-06	2.51E-06	7.26E-06	6.81E-08	2.10E-08	6.61E-09
1,1,2-Trichloroethylene	79-01-6	2.43	6.81E-06	5.45E-06	1.57E-05	1.48E-07	4.56E-08	1.43E-08
1,1-Dichloroethane	75-34-3	1.79	1.56E-06	1.25E-06	3.60E-06	3.38E-08	1.04E-08	3.28E-09
1,1-Dichloroethene	75-35-4	2.12	3.32E-06	2.65E-06	7.66E-06	7.19E-08	2.22E-08	6.98E-09
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.16	3.63E-05	2.90E-05	8.39E-05	7.87E-07	2.43E-07	7.64E-08
1,2,3-Trichloropropane	96-18-4	2.25	4.47E-06	3.58E-06	1.03E-05	9.69E-08	2.99E-08	9.41E-09
1,2-Dibromo-3-chloropropane	96-12-8	2.34	5.50E-06	4.40E-06	1.27E-05	1.19E-07	3.68E-08	1.16E-08
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	2.82	1.66E-05	1.33E-05	3.84E-05	3.60E-07	1.11E-07	3.49E-08
1,2-Dichloroethane	107-06-2	1.46	7.28E-07	5.83E-07	1.68E-06	1.58E-08	4.88E-09	1.53E-09
1,2-Dichloroethylene	540-59-0	2.09	3.09E-06	2.47E-06	7.14E-06	6.70E-08	2.07E-08	6.51E-09
1,2-Dichloropropane	78-87-5	2.25	4.47E-06	3.58E-06	1.03E-05	9.69E-08	2.99E-08	9.41E-09
1,3-Dichloropropene	542-75-6	1.75	1.41E-06	1.13E-06	3.25E-06	3.05E-08	9.42E-09	2.96E-09
1,4-Dichloro-2-butene	764-41-0	0.87	1.87E-07	1.50E-07	4.33E-07	4.06E-09	1.25E-09	3.94E-10
1-Chloroethene	75-01-4	1.15	3.52E-07	2.81E-07	8.13E-07	7.62E-09	2.36E-09	7.40E-10
2,2-Dichloropropionic acid	75-99-0	1.68	1.20E-06	9.62E-07	2.78E-06	2.61E-08	8.05E-09	2.53E-09
2-Chloropropane	75-29-6	1.90	2.00E-06	1.60E-06	4.61E-06	4.33E-08	1.34E-08	4.20E-09
3-Chloropropene (Allyl chloride)	107-05-1	1.93	2.14E-06	1.71E-06	4.94E-06	4.63E-08	1.43E-08	4.50E-09
Bromochloromethane	74-97-5	1.41	6.46E-07	5.17E-07	1.49E-06	1.40E-08	4.32E-09	1.36E-09
Bromodichloromethane	75-27-4	2.03	2.66E-06	2.13E-06	6.16E-06	5.77E-08	1.78E-08	5.61E-09
Bromoethene	593-60-2	1.07	2.93E-07	2.34E-07	6.77E-07	6.35E-09	1.96E-09	6.16E-10
Bromoform	75-25-2	2.35	5.63E-06	4.50E-06	1.30E-05	1.22E-07	3.77E-08	1.18E-08
Bromomethane	74-83-9	1.11	3.27E-07	2.61E-07	7.55E-07	7.08E-09	2.19E-09	6.88E-10
Carbon tetrachloride	56-23-5	2.72	1.31E-05	1.05E-05	3.03E-05	2.84E-07	8.76E-08	2.76E-08
Chlorodibromomethane	124-48-1	2.18	3.77E-06	3.01E-06	8.71E-06	8.17E-08	2.52E-08	7.93E-09
Chlorodifluoromethane	75-45-6	1.08	3.01E-07	2.41E-07	6.97E-07	6.53E-09	2.02E-09	6.35E-10

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,1,2,2-Tetrachloroethene	127-18-4	2.02E-06	4.34E-08	7.81E-07	8.40E-07	2.62E-07	3.03E-06	3.17E-06	1.05E-06
1,1,2-Trichloroethane	79-00-5	7.21E-07	1.54E-08	2.78E-07	2.99E-07	9.34E-08	1.08E-06	1.13E-06	3.74E-07
1,1,2-Trichloroethylene	79-01-6	1.56E-06	3.35E-08	6.03E-07	6.48E-07	2.03E-07	2.34E-06	2.45E-06	8.10E-07
1,1-Dichloroethane	75-34-3	3.57E-07	7.66E-09	1.38E-07	1.48E-07	4.63E-08	5.36E-07	5.61E-07	1.85E-07
1,1-Dichloroethene	75-35-4	7.61E-07	1.63E-08	2.94E-07	3.16E-07	9.86E-08	1.14E-06	1.19E-06	3.95E-07
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	8.33E-06	1.79E-07	3.22E-06	3.46E-06	1.08E-06	1.25E-05	1.31E-05	4.32E-06
1,2,3-Trichloropropane	96-18-4	1.03E-06	2.20E-08	3.96E-07	4.26E-07	1.33E-07	1.54E-06	1.61E-06	5.32E-07
1,2-Dibromo-3-chloropropane	96-12-8	1.26E-06	2.71E-08	4.88E-07	5.24E-07	1.64E-07	1.89E-06	1.98E-06	6.55E-07
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	3.81E-06	8.17E-08	1.47E-06	1.58E-06	4.94E-07	5.71E-06	5.97E-06	1.97E-06
1,2-Dichloroethane	107-06-2	1.67E-07	3.58E-09	6.46E-08	6.94E-08	2.17E-08	2.51E-07	2.62E-07	8.67E-08
1,2-Dichloroethylene	540-59-0	7.09E-07	1.52E-08	2.74E-07	2.94E-07	9.19E-08	1.06E-06	1.11E-06	3.68E-07
1,2-Dichloropropane	78-87-5	1.03E-06	2.20E-08	3.96E-07	4.26E-07	1.33E-07	1.54E-06	1.61E-06	5.32E-07
1,3-Dichloropropene	542-75-6	3.23E-07	6.92E-09	1.25E-07	1.34E-07	4.18E-08	4.84E-07	5.06E-07	1.67E-07
1,4-Dichloro-2-butene	764-41-0	4.30E-08	9.22E-10	1.66E-08	1.78E-08	5.57E-09	6.45E-08	6.74E-08	2.23E-08
1-Chloroethene	75-01-4	8.07E-08	1.73E-09	3.12E-08	3.35E-08	1.05E-08	1.21E-07	1.27E-07	4.18E-08
2,2-Dichloropropionic acid	75-99-0	2.76E-07	5.92E-09	1.07E-07	1.14E-07	3.58E-08	4.14E-07	4.33E-07	1.43E-07
2-Chloropropane	75-29-6	4.58E-07	9.82E-09	1.77E-07	1.90E-07	5.94E-08	6.87E-07	7.18E-07	2.37E-07
3-Chloropropene (Allyl chloride)	107-05-1	4.91E-07	1.05E-08	1.89E-07	2.04E-07	6.36E-08	7.36E-07	7.70E-07	2.54E-07
Bromochloromethane	74-97-5	1.48E-07	3.18E-09	5.72E-08	6.15E-08	1.92E-08	2.22E-07	2.32E-07	7.68E-08
Bromodichloromethane	75-27-4	6.11E-07	1.31E-08	2.36E-07	2.54E-07	7.92E-08	9.16E-07	9.59E-07	3.17E-07
Bromoethene	593-60-2	6.72E-08	1.44E-09	2.59E-08	2.79E-08	8.71E-09	1.01E-07	1.05E-07	3.48E-08
Bromoform	75-25-2	1.29E-06	2.77E-08	4.99E-07	5.36E-07	1.67E-07	1.94E-06	2.03E-06	6.70E-07
Bromomethane	74-83-9	7.49E-08	1.61E-09	2.89E-08	3.11E-08	9.71E-09	1.12E-07	1.18E-07	3.89E-08
Carbon tetrachloride	56-23-5	3.00E-06	6.44E-08	1.16E-06	1.25E-06	3.89E-07	4.50E-06	4.71E-06	1.56E-06
Chlorodibromomethane	124-48-1	8.65E-07	1.85E-08	3.34E-07	3.59E-07	1.12E-07	1.30E-06	1.36E-06	4.48E-07
Chlorodifluoromethane	75-45-6	6.92E-08	1.48E-09	2.67E-08	2.87E-08	8.97E-09	1.04E-07	1.09E-07	3.59E-08

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Chloroethane	75-00-3	3.10	3.16E-05	2.53E-05	7.32E-05	6.86E-07	2.12E-07	6.66E-08
Chloroform	67-66-3	1.95	2.24E-06	1.79E-06	5.18E-06	4.85E-08	1.50E-08	4.72E-09
Chloromethane	74-87-3	0.90	2.01E-07	1.61E-07	4.65E-07	4.36E-09	1.35E-09	4.23E-10
Chloropentafluoroethane	76-15-3	2.10	3.16E-06	2.53E-06	7.31E-06	6.85E-08	2.12E-08	6.66E-09
cis-1,2-Dichloroethene	156-59-2	1.98	2.41E-06	1.93E-06	5.57E-06	5.23E-08	1.62E-08	5.08E-09
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	-0.29	1.29E-08	1.03E-08	2.98E-08	2.79E-10	8.63E-11	2.71E-11
Cyanogen chloride	506-77-4	-0.38	1.05E-08	8.38E-09	2.42E-08	2.27E-10	7.01E-11	2.20E-11
Dichlorodifluoromethane	75-71-8	2.16	3.62E-06	2.89E-06	8.36E-06	7.84E-08	2.42E-08	7.62E-09
Dichlorofluoromethane	75-43-4	1.55	8.91E-07	7.13E-07	2.06E-06	1.93E-08	5.97E-09	1.88E-09
Dichloromethane	75-09-2	1.26	4.52E-07	3.62E-07	1.05E-06	9.80E-09	3.03E-09	9.52E-10
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.69	1.23E-06	9.84E-07	2.84E-06	2.67E-08	8.24E-09	2.59E-09
Methylene bromide	74-95-3	1.62	1.05E-06	8.38E-07	2.42E-06	2.27E-08	7.02E-09	2.21E-09
Pentachloroethane	76-01-7	3.05	2.82E-05	2.25E-05	6.52E-05	6.11E-07	1.89E-07	5.93E-08
trans-1,2-Dichloroethylene	156-60-5	1.98	2.41E-06	1.93E-06	5.57E-06	5.23E-08	1.62E-08	5.08E-09
trans-1,3-Dichloropropene	10061-02-6	2.06	2.88E-06	2.31E-06	6.67E-06	6.25E-08	1.93E-08	6.07E-09
Trichloroacetic acid	76-03-9	1.33	5.37E-07	4.30E-07	1.24E-06	1.16E-08	3.60E-09	1.13E-09
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	2.53	8.54E-06	6.83E-06	1.97E-05	1.85E-07	5.72E-08	1.80E-08
Trifluorobromomethane	75-63-8	1.86	1.82E-06	1.46E-06	4.21E-06	3.94E-08	1.22E-08	3.83E-09
Dioxin and Furan Compounds (PCDDs/PCDFs)								
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	8.20	2.77E-03	2.22E-03	6.41E-03	6.01E-05	1.86E-05	5.84E-06
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.92	5.98E-04	4.78E-04	1.38E-03	1.30E-05	4.00E-06	1.26E-06
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	7.92	2.12E-02	1.69E-02	4.89E-02	4.59E-04	1.42E-04	4.46E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Chloroethane	75-00-3	7.26E-06	1.56E-07	2.80E-06	3.01E-06	9.42E-07	1.09E-05	1.14E-05	3.77E-06
Chloroform	67-66-3	5.14E-07	1.10E-08	1.98E-07	2.13E-07	6.66E-08	7.71E-07	8.06E-07	2.67E-07
Chloromethane	74-87-3	4.61E-08	9.89E-10	1.78E-08	1.91E-08	5.98E-09	6.92E-08	7.23E-08	2.39E-08
Chloropentafluoroethane	76-15-3	7.26E-07	1.56E-08	2.80E-07	3.01E-07	9.41E-08	1.09E-06	1.14E-06	3.76E-07
cis-1,2-Dichloroethene	156-59-2	5.53E-07	1.19E-08	2.14E-07	2.30E-07	7.17E-08	8.30E-07	8.68E-07	2.87E-07
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	2.96E-09	6.34E-11	1.14E-09	1.23E-09	3.83E-10	4.43E-09	4.64E-09	1.53E-09
Cyanogen chloride	506-77-4	2.40E-09	5.15E-11	9.28E-10	9.97E-10	3.12E-10	3.60E-09	3.77E-09	1.25E-09
Dichlorodifluoromethane	75-71-8	8.30E-07	1.78E-08	3.21E-07	3.44E-07	1.08E-07	1.24E-06	1.30E-06	4.30E-07
Dichlorofluoromethane	75-43-4	2.05E-07	4.38E-09	7.90E-08	8.49E-08	2.65E-08	3.07E-07	3.21E-07	1.06E-07
Dichloromethane	75-09-2	1.04E-07	2.22E-09	4.01E-08	4.31E-08	1.35E-08	1.56E-07	1.63E-07	5.38E-08
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	2.82E-07	6.05E-09	1.09E-07	1.17E-07	3.66E-08	4.23E-07	4.43E-07	1.46E-07
Methylene bromide	74-95-3	2.40E-07	5.15E-09	9.28E-08	9.98E-08	3.12E-08	3.60E-07	3.77E-07	1.25E-07
Pentachloroethane	76-01-7	6.47E-06	1.39E-07	2.50E-06	2.68E-06	8.38E-07	9.70E-06	1.01E-05	3.35E-06
trans-1,2-Dichloroethylene	156-60-5	5.53E-07	1.19E-08	2.14E-07	2.30E-07	7.17E-08	8.30E-07	8.68E-07	2.87E-07
trans-1,3-Dichloropropene	10061-02-6	6.62E-07	1.42E-08	2.56E-07	2.75E-07	8.58E-08	9.93E-07	1.04E-06	3.43E-07
Trichloroacetic acid	76-03-9	1.23E-07	2.64E-09	4.76E-08	5.11E-08	1.60E-08	1.85E-07	1.93E-07	6.39E-08
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	1.96E-06	4.20E-08	7.57E-07	8.13E-07	2.54E-07	2.94E-06	3.07E-06	1.02E-06
Trifluorobromomethane	75-63-8	4.18E-07	8.95E-09	1.61E-07	1.73E-07	5.41E-08	6.26E-07	6.55E-07	2.17E-07
Dioxin and Furan Compounds (PCDDs/PCDFs)									
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	6.36E-04	1.36E-05	2.46E-04	2.64E-04	8.25E-05	9.54E-04	9.98E-04	3.30E-04
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	1.37E-04	2.94E-06	5.30E-05	5.69E-05	1.78E-05	2.06E-04	2.15E-04	7.11E-05
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	4.86E-03	1.04E-04	1.88E-03	2.02E-03	6.30E-04	7.29E-03	7.62E-03	2.52E-03

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	7.79	1.68E-02	1.35E-02	3.89E-02	3.65E-04	1.13E-04	3.54E-05
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	7.25	4.13E-03	3.30E-03	9.54E-03	8.95E-05	2.76E-05	8.69E-06
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	7.25	6.52E-03	5.22E-03	1.51E-02	1.41E-04	4.37E-05	1.37E-05
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	7.25	1.03E-02	8.26E-03	2.39E-02	2.24E-04	6.91E-05	2.17E-05
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.25	7.61E-03	6.08E-03	1.76E-02	1.65E-04	5.09E-05	1.60E-05
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	7.25	3.42E-02	2.74E-02	7.91E-02	7.42E-04	2.29E-04	7.21E-05
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	6.64	5.00E-02	4.00E-02	1.15E-01	1.08E-03	3.35E-04	1.05E-04
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	6.79	1.20E-02	9.56E-03	2.76E-02	2.59E-04	8.00E-05	2.52E-05
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	7.25	3.64E-02	2.91E-02	8.42E-02	7.89E-04	2.44E-04	7.67E-05
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.92	8.70E-02	6.96E-02	2.01E-01	1.89E-03	5.82E-04	1.83E-04
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	6.64	5.43E-02	4.35E-02	1.26E-01	1.18E-03	3.64E-04	1.14E-04
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	6.53	4.34E-02	3.47E-02	1.00E-01	9.41E-04	2.91E-04	9.14E-05
Dibenzofuran	132-64-9	4.33	5.37E-04	4.30E-04	1.24E-03	1.16E-05	3.60E-06	1.13E-06
Octachlorodibenzo(p)dioxin	3268-87-9	7.59	6.52E-04	5.22E-04	1.51E-03	1.41E-05	4.37E-06	1.37E-06
Octachlorodibenzofuran	39001-02-0	8.78	8.70E-04	6.96E-04	2.01E-03	1.89E-05	5.82E-06	1.83E-06
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)								
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	7.08	3.02E-01	2.42E-01	6.98E-01	6.55E-03	2.02E-03	6.36E-04
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	7.12	3.31E-01	2.65E-01	7.65E-01	7.18E-03	2.22E-03	6.97E-04
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	3.86E-03	8.28E-05	1.49E-03	1.60E-03	5.00E-04	5.79E-03	6.06E-03	2.00E-03
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	9.47E-04	2.03E-05	3.66E-04	3.93E-04	1.23E-04	1.42E-03	1.49E-03	4.91E-04
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	1.50E-03	3.21E-05	5.78E-04	6.21E-04	1.94E-04	2.24E-03	2.35E-03	7.76E-04
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	2.37E-03	5.08E-05	9.15E-04	9.83E-04	3.07E-04	3.55E-03	3.72E-03	1.23E-03
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	1.75E-03	3.74E-05	6.74E-04	7.24E-04	2.26E-04	2.62E-03	2.74E-03	9.05E-04
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	7.86E-03	1.68E-04	3.03E-03	3.26E-03	1.02E-03	1.18E-02	1.23E-02	4.07E-03
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	1.15E-02	2.46E-04	4.43E-03	4.76E-03	1.49E-03	1.72E-02	1.80E-02	5.94E-03
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	2.74E-03	5.88E-05	1.06E-03	1.14E-03	3.56E-04	4.11E-03	4.30E-03	1.42E-03
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	8.36E-03	1.79E-04	3.23E-03	3.47E-03	1.08E-03	1.25E-02	1.31E-02	4.33E-03
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	2.00E-02	4.28E-04	7.71E-03	8.28E-03	2.59E-03	2.99E-02	3.13E-02	1.03E-02
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	1.25E-02	2.67E-04	4.81E-03	5.17E-03	1.62E-03	1.87E-02	1.96E-02	6.46E-03
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	9.96E-03	2.14E-04	3.85E-03	4.13E-03	1.29E-03	1.49E-02	1.56E-02	5.16E-03
Dibenzofuran	132-64-9	1.23E-04	2.64E-06	4.76E-05	5.11E-05	1.60E-05	1.85E-04	1.93E-04	6.39E-05
Octachlorodibenzo(p)dioxin	3268-87-9	1.50E-04	3.21E-06	5.78E-05	6.21E-05	1.94E-05	2.24E-04	2.35E-04	7.76E-05
Octachlorodibenzofuran	39001-02-0	2.00E-04	4.28E-06	7.71E-05	8.28E-05	2.59E-05	2.99E-04	3.13E-04	1.03E-04
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)									
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	6.93E-02	1.49E-03	2.68E-02	2.88E-02	8.98E-03	1.04E-01	1.09E-01	3.59E-02
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	7.60E-02	1.63E-03	2.93E-02	3.15E-02	9.85E-03	1.14E-01	1.19E-01	3.94E-02
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data	No data

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	7.12	3.31E-01	2.65E-01	7.65E-01	7.18E-03	2.22E-03	6.97E-04
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	7.41	6.43E-01	5.14E-01	1.49E+00	1.39E-02	4.30E-03	1.35E-03
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	6.29	4.90E-02	3.92E-02	1.13E-01	1.06E-03	3.28E-04	1.03E-04
Phthalates								
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	5.20	4.02E-03	3.22E-03	9.29E-03	8.71E-05	2.69E-05	8.46E-06
Butylbenzyl phthalate	85-68-7	4.41	6.51E-04	5.20E-04	1.50E-03	1.41E-05	4.36E-06	1.37E-06
Dibutyl phthalate	84-74-2	4.72	1.32E-03	1.05E-03	3.05E-03	2.86E-05	8.83E-06	2.78E-06
Diethyl phthalate	84-66-2	4.44	6.86E-04	5.49E-04	1.59E-03	1.49E-05	4.59E-06	1.44E-06
Dimethyl phthalate	131-11-3	1.63	1.08E-06	8.64E-07	2.50E-06	2.34E-08	7.23E-09	2.27E-09
n-Dioctyl phthalate	117-84-0	9.33	5.37E+01	4.29E+01	1.24E+02	1.16E+00	3.59E-01	1.13E-01
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)								
2-Chloronaphthalene	91-58-7	4.07	2.94E-04	2.35E-04	6.79E-04	6.37E-06	1.97E-06	6.19E-07
2-Methyl naphthalene	91-57-6	3.86	1.82E-04	1.46E-04	4.21E-04	3.94E-06	1.22E-06	3.83E-07
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	3.96	2.32E-04	1.85E-04	5.35E-04	5.02E-06	1.55E-06	4.88E-07
Acenaphthylene	208-96-8	4.07	2.95E-04	2.36E-04	6.82E-04	6.40E-06	1.98E-06	6.21E-07
Anthracene	120-12-7	4.47	7.41E-04	5.93E-04	1.71E-03	1.61E-05	4.96E-06	1.56E-06
Fluorene	86-73-7	4.17	3.72E-04	2.98E-04	8.60E-04	8.06E-06	2.49E-06	7.83E-07
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	3.37	5.93E-05	4.74E-05	1.37E-04	1.29E-06	3.97E-07	1.25E-07
Phenanthrene	85-01-8	4.55	8.92E-04	7.13E-04	2.06E-03	1.93E-05	5.97E-06	1.88E-06
Pyrene	129-00-0	5.00	2.51E-03	2.01E-03	5.81E-03	5.44E-05	1.68E-05	5.29E-06

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	7.60E-02	1.63E-03	2.93E-02	3.15E-02	9.85E-03	1.14E-01	1.19E-01	3.94E-02
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	1.47E-01	3.16E-03	5.70E-02	6.12E-02	1.91E-02	2.21E-01	2.31E-01	7.65E-02
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	1.12E-02	2.41E-04	4.34E-03	4.66E-03	1.46E-03	1.69E-02	1.76E-02	5.83E-03
Phthalates									
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	9.23E-04	1.98E-05	3.56E-04	3.83E-04	1.20E-04	1.38E-03	1.45E-03	4.78E-04
Butylbenzyl phthalate	85-68-7	1.49E-04	3.20E-06	5.77E-05	6.20E-05	1.94E-05	2.24E-04	2.34E-04	7.74E-05
Dibutyl phthalate	84-74-2	3.03E-04	6.49E-06	1.17E-04	1.26E-04	3.92E-05	4.54E-04	4.75E-04	1.57E-04
Diethyl phthalate	84-66-2	1.57E-04	3.37E-06	6.08E-05	6.53E-05	2.04E-05	2.36E-04	2.47E-04	8.16E-05
Dimethyl phthalate	131-11-3	2.48E-07	5.31E-09	9.57E-08	1.03E-07	3.21E-08	3.72E-07	3.89E-07	1.29E-07
n-Dioctyl phthalate	117-84-0	1.23E+01	2.64E-01	4.76E+00	5.11E+00	1.60E+00	1.85E+01	1.93E+01	6.39E+00
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)									
2-Chloronaphthalene	91-58-7	6.74E-05	1.45E-06	2.60E-05	2.80E-05	8.74E-06	1.01E-04	1.06E-04	3.50E-05
2-Methyl naphthalene	91-57-6	4.18E-05	8.95E-07	1.61E-05	1.73E-05	5.41E-06	6.26E-05	6.55E-05	2.17E-05
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	5.32E-05	1.14E-06	2.05E-05	2.21E-05	6.89E-06	7.97E-05	8.34E-05	2.76E-05
Acenaphthylene	208-96-8	6.77E-05	1.45E-06	2.62E-05	2.81E-05	8.78E-06	1.02E-04	1.06E-04	3.51E-05
Anthracene	120-12-7	1.70E-04	3.65E-06	6.57E-05	7.06E-05	2.20E-05	2.55E-04	2.67E-04	8.82E-05
Fluorene	86-73-7	8.54E-05	1.83E-06	3.30E-05	3.54E-05	1.11E-05	1.28E-04	1.34E-04	4.43E-05
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	1.36E-05	2.92E-07	5.25E-06	5.65E-06	1.76E-06	2.04E-05	2.13E-05	7.05E-06
Phenanthrene	85-01-8	2.05E-04	4.39E-06	7.90E-05	8.49E-05	2.65E-05	3.07E-04	3.21E-04	1.06E-04
Pyrene	129-00-0	5.76E-04	1.24E-05	2.23E-04	2.39E-04	7.47E-05	8.64E-04	9.04E-04	2.99E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)								
3-Methylcholanthrene	56-49-5	7.11	3.24E-01	2.59E-01	7.48E-01	7.01E-03	2.17E-03	6.81E-04
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	5.68	1.20E-02	9.62E-03	2.78E-02	2.61E-04	8.05E-05	2.53E-05
Benzo[a]pyrene	50-32-8	6.13	2.74E-02	2.20E-02	6.34E-02	5.95E-04	1.84E-04	5.78E-05
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	6.20	4.00E-02	3.20E-02	9.25E-02	8.68E-04	2.68E-04	8.43E-05
Benzo[e]pyrene	192-97-2	7.40	6.31E-01	5.05E-01	1.46E+00	1.37E-02	4.23E-03	1.33E-03
Benzo[g,h,i]perylene	191-24-2	7.10	3.16E-01	2.53E-01	7.31E-01	6.85E-03	2.12E-03	6.66E-04
Benzo[j]fluoranthene	205-82-3	6.44	6.92E-02	5.53E-02	1.60E-01	1.50E-03	4.63E-04	1.46E-04
Benzo[k]fluoranthene	207-08-9	6.19	3.98E-02	3.18E-02	9.20E-02	8.63E-04	2.67E-04	8.38E-05
Chrysene	218-01-9	5.74	1.38E-02	1.11E-02	3.19E-02	3.00E-04	9.26E-05	2.91E-05
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	6.55	8.86E-02	7.09E-02	2.05E-01	1.92E-03	5.93E-04	1.87E-04
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	7.29	4.90E-01	3.92E-01	1.13E+00	1.06E-02	3.28E-03	1.03E-03
Fluoranthene	206-44-0	5.08	3.04E-03	2.43E-03	7.03E-03	6.59E-05	2.04E-05	6.40E-06
Hexachloronaphthalene	1335-87-1	7.59	9.77E-01	7.82E-01	2.26E+00	2.12E-02	6.55E-03	2.06E-03
Indeno[1,2,3-cd]pyrene	193-39-5	6.91	2.07E-01	1.66E-01	4.78E-01	4.48E-03	1.39E-03	4.36E-04
Octachloronaphthalene	2234-13-1	6.42	6.61E-02	5.29E-02	1.53E-01	1.43E-03	4.43E-04	1.39E-04
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)									
3-Methylcholanthrene	56-49-5	7.43E-02	1.59E-03	2.87E-02	3.08E-02	9.63E-03	1.11E-01	1.16E-01	3.85E-02
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	2.76E-03	5.92E-05	1.07E-03	1.14E-03	3.58E-04	4.14E-03	4.33E-03	1.43E-03
Benzo[a]pyrene	50-32-8	6.30E-03	1.35E-04	2.43E-03	2.61E-03	8.16E-04	9.44E-03	9.88E-03	3.27E-03
Benzo[a,i]pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data	No data
Benzo[b]fluoranthene	205-99-2	9.19E-03	1.97E-04	3.55E-03	3.81E-03	1.19E-03	1.38E-02	1.44E-02	4.76E-03
Benzo[e]pyrene	192-97-2	1.45E-01	3.10E-03	5.59E-02	6.01E-02	1.88E-02	2.17E-01	2.27E-01	7.51E-02
Benzo[g,h,i]perylene	191-24-2	7.26E-02	1.56E-03	2.80E-02	3.01E-02	9.41E-03	1.09E-01	1.14E-01	3.76E-02
Benzo[j]fluoranthene	205-82-3	1.59E-02	3.40E-04	6.13E-03	6.59E-03	2.06E-03	2.38E-02	2.49E-02	8.23E-03
Benzo[k]fluoranthene	207-08-9	9.14E-03	1.96E-04	3.53E-03	3.79E-03	1.18E-03	1.37E-02	1.43E-02	4.74E-03
Chrysene	218-01-9	3.17E-03	6.80E-05	1.22E-03	1.32E-03	4.11E-04	4.76E-03	4.98E-03	1.64E-03
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	2.03E-02	4.36E-04	7.85E-03	8.44E-03	2.64E-03	3.05E-02	3.19E-02	1.05E-02
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	1.12E-01	2.41E-03	4.34E-02	4.66E-02	1.46E-02	1.69E-01	1.76E-01	5.83E-02
Fluoranthene	206-44-0	6.98E-04	1.50E-05	2.69E-04	2.89E-04	9.04E-05	1.05E-03	1.09E-03	3.62E-04
Hexachloronaphthalene	1335-87-1	2.24E-01	4.81E-03	8.66E-02	9.31E-02	2.91E-02	3.36E-01	3.52E-01	1.16E-01
Indeno[1,2,3-cd]pyrene	193-39-5	4.75E-02	1.02E-03	1.83E-02	1.97E-02	6.16E-03	7.12E-02	7.45E-02	2.46E-02
Octachloronaphthalene	2234-13-1	1.52E-02	3.25E-04	5.86E-03	6.29E-03	1.97E-03	2.27E-02	2.38E-02	7.87E-03
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data	No data

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)								
1,2,3-Trichlorobenzene	87-61-6	4.05	2.79E-04	2.23E-04	6.45E-04	6.04E-06	1.87E-06	5.87E-07
1,2,4-Trichlorobenzene	120-82-1	3.99	2.44E-04	1.96E-04	5.65E-04	5.30E-06	1.64E-06	5.15E-07
1,2,4-Trimethyl benzene	95-63-6	3.65	1.12E-04	8.98E-05	2.59E-04	2.43E-06	7.51E-07	2.36E-07
1,2-Dichlorobenzene	95-50-1	3.45	7.01E-05	5.61E-05	1.62E-04	1.52E-06	4.69E-07	1.48E-07
1,3,5-Trimethyl benzene	108-67-8	3.42	6.61E-05	5.29E-05	1.53E-04	1.43E-06	4.42E-07	1.39E-07
1,3-Dichlorobenzene	541-73-1	3.53	8.52E-05	6.81E-05	1.97E-04	1.85E-06	5.70E-07	1.79E-07
1,3-Dinitrobenzene	99-65-0	1.49	7.79E-07	6.23E-07	1.80E-06	1.69E-08	5.22E-09	1.64E-09
1,4-Dichlorobenzene	106-46-7	3.41	6.48E-05	5.18E-05	1.50E-04	1.40E-06	4.34E-07	1.36E-07
1,4-Dinitrobenzene	100-25-4	1.50	7.94E-07	6.35E-07	1.84E-06	1.72E-08	5.32E-09	1.67E-09
2,4,5-Trichlorophenol	95-95-4	3.87	1.86E-04	1.49E-04	4.30E-04	4.03E-06	1.25E-06	3.92E-07
2,4,6-Trichlorophenol	88-06-2	3.71	1.29E-04	1.03E-04	2.99E-04	2.80E-06	8.66E-07	2.72E-07
2,4-Dichlorophenol	120-83-2	3.04	2.74E-05	2.19E-05	6.33E-05	5.93E-07	1.83E-07	5.77E-08
2,4-Dimethylphenol	105-67-9	2.36	5.75E-06	4.60E-06	1.33E-05	1.25E-07	3.85E-08	1.21E-08
2,4-Dinitrophenol	51-28-5	1.52	8.29E-07	6.63E-07	1.92E-06	1.80E-08	5.55E-09	1.75E-09
2,4-Dinitrotoluene	121-14-2	2.00	2.49E-06	1.99E-06	5.76E-06	5.40E-08	1.67E-08	5.24E-09
2,6-Dinitrotoluene	606-20-2	1.89	1.93E-06	1.55E-06	4.47E-06	4.19E-08	1.29E-08	4.07E-09
2-Chlorophenol	95-57-8	2.16	3.64E-06	2.91E-06	8.42E-06	7.90E-08	2.44E-08	7.67E-09
2-Chlorotoluene	95-49-8	3.54	8.64E-05	6.91E-05	2.00E-04	1.87E-06	5.78E-07	1.82E-07
2-Nitrophenol	88-75-5	1.79	1.55E-06	1.24E-06	3.58E-06	3.36E-08	1.04E-08	3.26E-09
4,6-Dinitro-o-cresol	534-52-1	2.12	3.31E-06	2.65E-06	7.65E-06	7.18E-08	2.22E-08	6.97E-09
4-Chlorotoluene	106-43-4	3.33	5.37E-05	4.30E-05	1.24E-04	1.16E-06	3.60E-07	1.13E-07
4-Nitrophenol	100-02-7	1.91	2.04E-06	1.63E-06	4.72E-06	4.43E-08	1.37E-08	4.30E-09
alpha-Methylstyrene	98-83-9	3.46	7.30E-05	5.84E-05	1.69E-04	1.58E-06	4.89E-07	1.54E-07
Aniline	62-53-3	0.98	2.40E-07	1.92E-07	5.55E-07	5.20E-09	1.61E-09	5.05E-10

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)									
1,2,3-Trichlorobenzene	87-61-6	6.40E-05	1.37E-06	2.47E-05	2.66E-05	8.29E-06	9.60E-05	1.00E-04	3.32E-05
1,2,4-Trichlorobenzene	120-82-1	5.61E-05	1.20E-06	2.17E-05	2.33E-05	7.27E-06	8.41E-05	8.80E-05	2.91E-05
1,2,4-Trimethyl benzene	95-63-6	2.58E-05	5.52E-07	9.94E-06	1.07E-05	3.34E-06	3.86E-05	4.04E-05	1.34E-05
1,2-Dichlorobenzene	95-50-1	1.61E-05	3.45E-07	6.21E-06	6.67E-06	2.08E-06	2.41E-05	2.52E-05	8.34E-06
1,3,5-Trimethyl benzene	108-67-8	1.52E-05	3.25E-07	5.85E-06	6.29E-06	1.97E-06	2.27E-05	2.38E-05	7.86E-06
1,3-Dichlorobenzene	541-73-1	1.95E-05	4.19E-07	7.55E-06	8.11E-06	2.53E-06	2.93E-05	3.07E-05	1.01E-05
1,3-Dinitrobenzene	99-65-0	1.79E-07	3.83E-09	6.90E-08	7.42E-08	2.32E-08	2.68E-07	2.80E-07	9.27E-08
1,4-Dichlorobenzene	106-46-7	1.49E-05	3.19E-07	5.74E-06	6.17E-06	1.93E-06	2.23E-05	2.33E-05	7.71E-06
1,4-Dinitrobenzene	100-25-4	1.82E-07	3.91E-09	7.04E-08	7.56E-08	2.36E-08	2.73E-07	2.86E-07	9.45E-08
2,4,5-Trichlorophenol	95-95-4	4.27E-05	9.16E-07	1.65E-05	1.77E-05	5.54E-06	6.41E-05	6.70E-05	2.21E-05
2,4,6-Trichlorophenol	88-06-2	2.97E-05	6.36E-07	1.15E-05	1.23E-05	3.85E-06	4.45E-05	4.66E-05	1.54E-05
2,4-Dichlorophenol	120-83-2	6.28E-06	1.35E-07	2.43E-06	2.61E-06	8.15E-07	9.42E-06	9.86E-06	3.26E-06
2,4-Dimethylphenol	105-67-9	1.32E-06	2.83E-08	5.10E-07	5.48E-07	1.71E-07	1.98E-06	2.07E-06	6.85E-07
2,4-Dinitrophenol	51-28-5	1.90E-07	4.08E-09	7.35E-08	7.89E-08	2.47E-08	2.85E-07	2.98E-07	9.86E-08
2,4-Dinitrotoluene	121-14-2	5.72E-07	1.23E-08	2.21E-07	2.37E-07	7.41E-08	8.57E-07	8.97E-07	2.96E-07
2,6-Dinitrotoluene	606-20-2	4.44E-07	9.51E-09	1.71E-07	1.84E-07	5.75E-08	6.65E-07	6.96E-07	2.30E-07
2-Chlorophenol	95-57-8	8.36E-07	1.79E-08	3.23E-07	3.47E-07	1.08E-07	1.25E-06	1.31E-06	4.33E-07
2-Chlorotoluene	95-49-8	1.98E-05	4.25E-07	7.65E-06	8.22E-06	2.57E-06	2.97E-05	3.11E-05	1.03E-05
2-Nitrophenol	88-75-5	3.56E-07	7.63E-09	1.37E-07	1.48E-07	4.61E-08	5.33E-07	5.58E-07	1.84E-07
4,6-Dinitro-o-cresol	534-52-1	7.60E-07	1.63E-08	2.93E-07	3.15E-07	9.85E-08	1.14E-06	1.19E-06	3.94E-07
4-Chlorotoluene	106-43-4	1.23E-05	2.64E-07	4.76E-06	5.11E-06	1.60E-06	1.85E-05	1.93E-05	6.39E-06
4-Nitrophenol	100-02-7	4.69E-07	1.00E-08	1.81E-07	1.94E-07	6.08E-08	7.03E-07	7.35E-07	2.43E-07
alpha-Methylstyrene	98-83-9	1.68E-05	3.59E-07	6.47E-06	6.96E-06	2.17E-06	2.51E-05	2.63E-05	8.69E-06
Aniline	62-53-3	5.51E-08	1.18E-09	2.13E-08	2.28E-08	7.14E-09	8.26E-08	8.64E-08	2.85E-08

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Benzotrichloride	98-07-7	2.92	2.09E-05	1.67E-05	4.83E-05	4.53E-07	1.40E-07	4.40E-08
Benzyl chloride	100-44-7	2.30	5.01E-06	4.01E-06	1.16E-05	1.09E-07	3.36E-08	1.05E-08
Bromobenzene	108-86-1	2.99	2.45E-05	1.96E-05	5.67E-05	5.32E-07	1.64E-07	5.17E-08
Chlorobenzene	108-90-7	2.79	1.55E-05	1.24E-05	3.58E-05	3.35E-07	1.04E-07	3.26E-08
Cumene	98-82-8	3.61	1.03E-04	8.24E-05	2.38E-04	2.23E-06	6.90E-07	2.17E-07
m-Cresol	108-39-4	1.96	2.29E-06	1.83E-06	5.28E-06	4.95E-08	1.53E-08	4.81E-09
n-Butyl benzene	104-51-8	4.28	4.79E-04	3.83E-04	1.11E-03	1.04E-05	3.21E-06	1.01E-06
Nitrobenzene	98-95-3	1.83	1.71E-06	1.37E-06	3.96E-06	3.71E-08	1.15E-08	3.60E-09
n-Propyl benzene	103-65-1	3.69	1.23E-04	9.84E-05	2.84E-04	2.67E-06	8.24E-07	2.59E-07
o-Cresol	95-48-7	2.02	2.64E-06	2.11E-06	6.10E-06	5.72E-08	1.77E-08	5.55E-09
o-Dinitrobenzene	528-29-0	1.69	1.23E-06	9.84E-07	2.84E-06	2.67E-08	8.24E-09	2.59E-09
o-Nitroaniline	88-74-4	1.85	1.78E-06	1.42E-06	4.11E-06	3.86E-08	1.19E-08	3.74E-09
o-Toluidine	95-53-4	1.34	5.50E-07	4.40E-07	1.27E-06	1.19E-08	3.68E-09	1.16E-09
p-Chloroaniline	106-47-8	1.87	1.86E-06	1.49E-06	4.30E-06	4.03E-08	1.24E-08	3.91E-09
p-Cresol	106-44-5	1.94	2.19E-06	1.75E-06	5.05E-06	4.74E-08	1.46E-08	4.60E-09
Phenol	108-95-2	1.48	7.54E-07	6.03E-07	1.74E-06	1.63E-08	5.05E-09	1.59E-09
p-Nitrochlorobenzene	100-00-5	2.39	6.17E-06	4.93E-06	1.43E-05	1.34E-07	4.13E-08	1.30E-08
p-Toluidine	106-49-0	1.40	6.31E-07	5.05E-07	1.46E-06	1.37E-08	4.23E-09	1.33E-09
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	4.11	3.24E-04	2.59E-04	7.48E-04	7.01E-06	2.17E-06	6.81E-07
Toluene-2,6-diamine	823-40-5	0.16	3.63E-08	2.90E-08	8.39E-08	7.87E-10	2.43E-10	7.64E-11
Trimethyl benzene	25551-13-7	3.42	6.61E-05	5.29E-05	1.53E-04	1.43E-06	4.42E-07	1.39E-07
Other Light Semivolatile Compounds (molecular weight <200 g/mole)								
1,1'-Biphenyl	92-52-4	3.90	2.00E-04	1.60E-04	4.61E-04	4.33E-06	1.34E-06	4.20E-07
1,1-Dimethylhydrazine	57-14-7	-1.19	1.62E-09	1.30E-09	3.75E-09	3.52E-11	1.09E-11	3.41E-12
1,2-Dimethylhydrazine	540-73-8	-1.37	1.08E-09	8.61E-10	2.49E-09	2.33E-11	7.21E-12	2.27E-12

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Benzotrichloride	98-07-7	4.79E-06	1.03E-07	1.85E-06	1.99E-06	6.22E-07	7.19E-06	7.52E-06	2.49E-06
Benzyl chloride	100-44-7	1.15E-06	2.46E-08	4.44E-07	4.77E-07	1.49E-07	1.72E-06	1.80E-06	5.96E-07
Bromobenzene	108-86-1	5.63E-06	1.21E-07	2.18E-06	2.34E-06	7.30E-07	8.45E-06	8.84E-06	2.92E-06
Chlorobenzene	108-90-7	3.55E-06	7.61E-08	1.37E-06	1.47E-06	4.60E-07	5.33E-06	5.57E-06	1.84E-06
Cumene	98-82-8	2.36E-05	5.07E-07	9.13E-06	9.81E-06	3.06E-06	3.54E-05	3.71E-05	1.23E-05
m-Cresol	108-39-4	5.25E-07	1.12E-08	2.03E-07	2.18E-07	6.80E-08	7.87E-07	8.23E-07	2.72E-07
n-Butyl benzene	104-51-8	1.10E-04	2.35E-06	4.24E-05	4.56E-05	1.42E-05	1.65E-04	1.72E-04	5.70E-05
Nitrobenzene	98-95-3	3.93E-07	8.42E-09	1.52E-07	1.63E-07	5.09E-08	5.89E-07	6.16E-07	2.04E-07
n-Propyl benzene	103-65-1	2.82E-05	6.05E-07	1.09E-05	1.17E-05	3.66E-06	4.23E-05	4.43E-05	1.46E-05
o-Cresol	95-48-7	6.05E-07	1.30E-08	2.34E-07	2.51E-07	7.85E-08	9.08E-07	9.49E-07	3.14E-07
o-Dinitrobenzene	528-29-0	2.82E-07	6.05E-09	1.09E-07	1.17E-07	3.66E-08	4.23E-07	4.43E-07	1.46E-07
o-Nitroaniline	88-74-4	4.08E-07	8.75E-09	1.58E-07	1.69E-07	5.29E-08	6.12E-07	6.40E-07	2.12E-07
o-Toluidine	95-53-4	1.26E-07	2.71E-09	4.88E-08	5.24E-08	1.64E-08	1.89E-07	1.98E-07	6.55E-08
p-Chloroaniline	106-47-8	4.27E-07	9.15E-09	1.65E-07	1.77E-07	5.53E-08	6.40E-07	6.69E-07	2.21E-07
p-Cresol	106-44-5	5.02E-07	1.08E-08	1.94E-07	2.08E-07	6.50E-08	7.52E-07	7.87E-07	2.60E-07
Phenol	108-95-2	1.73E-07	3.71E-09	6.68E-08	7.18E-08	2.24E-08	2.59E-07	2.71E-07	8.97E-08
p-Nitrochlorobenzene	100-00-5	1.42E-06	3.03E-08	5.46E-07	5.87E-07	1.83E-07	2.12E-06	2.22E-06	7.34E-07
p-Toluidine	106-49-0	1.45E-07	3.10E-09	5.59E-08	6.01E-08	1.88E-08	2.17E-07	2.27E-07	7.51E-08
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	7.43E-05	1.59E-06	2.87E-05	3.08E-05	9.63E-06	1.11E-04	1.16E-04	3.85E-05
Toluene-2,6-diamine	823-40-5	8.33E-09	1.79E-10	3.22E-09	3.46E-09	1.08E-09	1.25E-08	1.31E-08	4.32E-09
Trimethyl benzene	25551-13-7	1.52E-05	3.25E-07	5.86E-06	6.29E-06	1.97E-06	2.27E-05	2.38E-05	7.86E-06
Other Light Semivolatile Compounds (molecular weight <200 g/mole)									
1,1'-Biphenyl	92-52-4	4.58E-05	9.82E-07	1.77E-05	1.90E-05	5.94E-06	6.87E-05	7.18E-05	2.37E-05
1,1-Dimethylhydrazine	57-14-7	3.72E-10	7.98E-12	1.44E-10	1.54E-10	4.82E-11	5.58E-10	5.84E-10	1.93E-10
1,2-Dimethylhydrazine	540-73-8	2.47E-10	5.30E-12	9.54E-11	1.03E-10	3.20E-11	3.70E-10	3.88E-10	1.28E-10

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,2-Diphenylhydrazine	122-66-7	2.94	2.19E-05	1.75E-05	5.06E-05	4.74E-07	1.47E-07	4.61E-08
1,3-Propane sultone	1120-71-4	-0.52	7.53E-09	6.03E-09	1.74E-08	1.63E-10	5.05E-11	1.59E-11
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	1.93	2.14E-06	1.71E-06	4.94E-06	4.63E-08	1.43E-08	4.50E-09
2-Propenoic acid	79-10-7	0.43	6.76E-08	5.41E-08	1.56E-07	1.47E-09	4.53E-10	1.42E-10
4,4'-Methylenedianiline	101-77-9	1.59	9.77E-07	7.82E-07	2.26E-06	2.12E-08	6.55E-09	2.06E-09
Acetophenone	98-86-2	1.64	1.10E-06	8.78E-07	2.54E-06	2.38E-08	7.35E-09	2.31E-09
Benzoic acid	65-85-0	1.87	1.86E-06	1.49E-06	4.30E-06	4.04E-08	1.25E-08	3.92E-09
bis(2-Chloroethoxy)methane	111-91-1	1.30	5.01E-07	4.01E-07	1.16E-06	1.09E-08	3.36E-09	1.06E-09
bis(2-Chloroethyl) ether	111-44-4	1.30	5.02E-07	4.02E-07	1.16E-06	1.09E-08	3.36E-09	1.06E-09
Chlorocyclopentadiene	41851-50-7	2.43	6.76E-06	5.41E-06	1.56E-05	1.47E-07	4.53E-08	1.42E-08
Cyclohexanol	108-93-0	1.23	4.27E-07	3.41E-07	9.86E-07	9.25E-09	2.86E-09	8.98E-10
Dichloroisopropyl ether	108-60-1	2.58	9.55E-06	7.64E-06	2.21E-05	2.07E-07	6.40E-08	2.01E-08
Dichloromethyl ether	542-88-1	0.58	9.55E-08	7.64E-08	2.21E-07	2.07E-09	6.40E-10	2.01E-10
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	0.16	3.63E-08	2.90E-08	8.39E-08	7.87E-10	2.43E-10	7.64E-11
Dimethylaniline	121-69-7	2.31	5.13E-06	4.10E-06	1.19E-05	1.11E-07	3.43E-08	1.08E-08
Di-n-propylnitrosamine	621-64-7	1.38	6.03E-07	4.82E-07	1.39E-06	1.31E-08	4.04E-09	1.27E-09
Diphenyl ether	101-84-8	4.21	4.07E-04	3.26E-04	9.42E-04	8.83E-06	2.73E-06	8.58E-07
Epichlorohydrin	106-89-8	0.25	4.47E-08	3.58E-08	1.03E-07	9.69E-10	2.99E-10	9.41E-11
Ethyl carbamate (Urethane)	51-79-6	-0.15	1.78E-08	1.42E-08	4.11E-08	3.85E-10	1.19E-10	3.74E-11
Ethyl methanesulfonate	62-50-0	0.05	2.81E-08	2.25E-08	6.50E-08	6.10E-10	1.88E-10	5.92E-11
Ethylene dibromide	106-93-4	1.75	1.41E-06	1.13E-06	3.26E-06	3.06E-08	9.45E-09	2.97E-09
Ethylene glycol	107-21-1	-1.36	1.10E-09	8.77E-10	2.53E-09	2.38E-11	7.34E-12	2.31E-12
Ethylene glycol monobutyl ether	111-76-2	0.83	1.70E-07	1.36E-07	3.93E-07	3.68E-09	1.14E-09	3.58E-10
Ethylene glycol monoethyl ether acetate	111-15-9	0.59	9.77E-08	7.82E-08	2.26E-07	2.12E-09	6.55E-10	2.06E-10

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,2-Diphenylhydrazine	122-66-7	5.02E-06	1.08E-07	1.94E-06	2.08E-06	6.51E-07	7.53E-06	7.88E-06	2.60E-06
1,3-Propane sultone	1120-71-4	1.73E-09	3.71E-11	6.68E-10	7.17E-10	2.24E-10	2.59E-09	2.71E-09	8.96E-10
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	4.91E-07	1.05E-08	1.89E-07	2.04E-07	6.36E-08	7.36E-07	7.70E-07	2.54E-07
2-Propenoic acid	79-10-7	1.55E-08	3.33E-10	5.99E-09	6.44E-09	2.01E-09	2.33E-08	2.43E-08	8.05E-09
4,4'-Methylenedianiline	101-77-9	2.24E-07	4.81E-09	8.66E-08	9.31E-08	2.91E-08	3.36E-07	3.52E-07	1.16E-07
Acetophenone	98-86-2	2.52E-07	5.40E-09	9.73E-08	1.05E-07	3.27E-08	3.78E-07	3.95E-07	1.31E-07
Benzoic acid	65-85-0	4.27E-07	9.16E-09	1.65E-07	1.77E-07	5.54E-08	6.41E-07	6.70E-07	2.22E-07
bis(2-Chloroethoxy)methane	111-91-1	1.15E-07	2.47E-09	4.44E-08	4.77E-08	1.49E-08	1.72E-07	1.80E-07	5.96E-08
bis(2-Chloroethyl) ether	111-44-4	1.15E-07	2.47E-09	4.45E-08	4.78E-08	1.49E-08	1.73E-07	1.81E-07	5.98E-08
Chlorocyclopentadiene	41851-50-7	1.55E-06	3.33E-08	5.99E-07	6.44E-07	2.01E-07	2.33E-06	2.43E-06	8.05E-07
Cyclohexanol	108-93-0	9.79E-08	2.10E-09	3.78E-08	4.06E-08	1.27E-08	1.47E-07	1.54E-07	5.08E-08
Dichloroisopropyl ether	108-60-1	2.19E-06	4.70E-08	8.46E-07	9.09E-07	2.84E-07	3.29E-06	3.44E-06	1.14E-06
Dichloromethyl ether	542-88-1	2.19E-08	4.70E-10	8.46E-09	9.09E-09	2.84E-09	3.29E-08	3.44E-08	1.14E-08
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	8.33E-09	1.79E-10	3.22E-09	3.46E-09	1.08E-09	1.25E-08	1.31E-08	4.32E-09
Dimethylaniline	121-69-7	1.18E-06	2.52E-08	4.54E-07	4.88E-07	1.53E-07	1.77E-06	1.85E-06	6.10E-07
Di-n-propylnitrosamine	621-64-7	1.38E-07	2.97E-09	5.34E-08	5.74E-08	1.79E-08	2.07E-07	2.17E-07	7.17E-08
Diphenyl ether	101-84-8	9.35E-05	2.00E-06	3.61E-05	3.88E-05	1.21E-05	1.40E-04	1.47E-04	4.85E-05
Epichlorohydrin	106-89-8	1.03E-08	2.20E-10	3.96E-09	4.26E-09	1.33E-09	1.54E-08	1.61E-08	5.32E-09
Ethyl carbamate (Urethane)	51-79-6	4.08E-09	8.75E-11	1.58E-09	1.69E-09	5.29E-10	6.12E-09	6.40E-09	2.12E-09
Ethyl methanesulfonate	62-50-0	6.46E-09	1.38E-10	2.49E-09	2.68E-09	8.37E-10	9.68E-09	1.01E-08	3.35E-09
Ethylene dibromide	106-93-4	3.24E-07	6.95E-09	1.25E-07	1.34E-07	4.20E-08	4.86E-07	5.08E-07	1.68E-07
Ethylene glycol	107-21-1	2.52E-10	5.39E-12	9.72E-11	1.04E-10	3.26E-11	3.77E-10	3.95E-10	1.30E-10
Ethylene glycol monobutyl ether	111-76-2	3.90E-08	8.36E-10	1.50E-08	1.62E-08	5.05E-09	5.84E-08	6.11E-08	2.02E-08
Ethylene glycol monoethyl ether acetate	111-15-9	2.24E-08	4.81E-10	8.66E-09	9.31E-09	2.91E-09	3.36E-08	3.52E-08	1.16E-08

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Ethylene thiourea	96-45-7	-0.66	5.50E-09	4.40E-09	1.27E-08	1.19E-10	3.68E-11	1.16E-11
Furfural	98-01-1	0.96	2.29E-07	1.83E-07	5.30E-07	4.97E-09	1.53E-09	4.82E-10
Maleic hydrazide	123-33-1	-0.84	3.63E-09	2.90E-09	8.39E-09	7.87E-11	2.43E-11	7.64E-12
Malononitrile	109-77-3	-0.60	6.31E-09	5.05E-09	1.46E-08	1.37E-10	4.23E-11	1.33E-11
Methyl styrene (mixed isomers)	25013-15-4	3.48	7.59E-05	6.07E-05	1.75E-04	1.64E-06	5.08E-07	1.60E-07
Methylhydrazine	60-34-4	-1.05	2.24E-09	1.79E-09	5.18E-09	4.86E-11	1.50E-11	4.72E-12
N,N-Diphenylamine	122-39-4	3.50	7.94E-05	6.35E-05	1.84E-04	1.72E-06	5.32E-07	1.67E-07
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	2.41	6.46E-06	5.16E-06	1.49E-05	1.40E-07	4.32E-08	1.36E-08
N-Nitrosomorpholine	59-89-2	0.98	2.40E-07	1.92E-07	5.55E-07	5.21E-09	1.61E-09	5.06E-10
N-Nitroso-N,N-dimethylamine	62-75-9	-0.57	6.76E-09	5.41E-09	1.56E-08	1.47E-10	4.53E-11	1.42E-11
o-Anisidine	90-04-0	1.18	3.80E-07	3.04E-07	8.79E-07	8.24E-09	2.55E-09	8.01E-10
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	-0.60	6.28E-09	5.02E-09	1.45E-08	1.36E-10	4.21E-11	1.32E-11
p-Phthalic acid	100-21-0	2.00	2.51E-06	2.01E-06	5.81E-06	5.44E-08	1.68E-08	5.29E-09
Pyridine	110-86-1	0.67	1.18E-07	9.40E-08	2.72E-07	2.55E-09	7.87E-10	2.48E-10
Quinoline	91-22-5	2.03	2.69E-06	2.15E-06	6.22E-06	5.83E-08	1.80E-08	5.67E-09
Quinone	106-51-4	0.20	3.98E-08	3.18E-08	9.20E-08	8.63E-10	2.67E-10	8.38E-11
Safrole	94-59-7	2.66	1.15E-05	9.18E-06	2.65E-05	2.49E-07	7.69E-08	2.42E-08
Tetrahydrofuran	109-99-9	0.45	7.03E-08	5.63E-08	1.63E-07	1.52E-09	4.71E-10	1.48E-10
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)								
1,2,4,5-Tetrachlorobenzene	95-94-3	4.64	1.10E-03	8.76E-04	2.53E-03	2.37E-05	7.33E-06	2.31E-06
1,3,5-Trinitrobenzene	99-35-4	1.18	3.79E-07	3.03E-07	8.77E-07	8.22E-09	2.54E-09	7.99E-10
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	4.17	3.72E-04	2.97E-04	8.59E-04	8.05E-06	2.49E-06	7.82E-07
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	4.54	8.71E-04	6.97E-04	2.01E-03	1.89E-05	5.83E-06	1.83E-06
2-sec-Butyl-4,6-dinitrophenol	88-85-7	3.56	9.12E-05	7.30E-05	2.11E-04	1.98E-06	6.11E-07	1.92E-07

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Ethylene thiourea	96-45-7	1.26E-09	2.70E-11	4.87E-10	5.23E-10	1.63E-10	1.89E-09	1.98E-09	6.54E-10
Furfural	98-01-1	5.26E-08	1.13E-09	2.03E-08	2.18E-08	6.82E-09	7.88E-08	8.25E-08	2.73E-08
Maleic hydrazide	123-33-1	8.33E-10	1.79E-11	3.22E-10	3.46E-10	1.08E-10	1.25E-09	1.31E-09	4.32E-10
Malononitrile	109-77-3	1.45E-09	3.10E-11	5.59E-10	6.01E-10	1.88E-10	2.17E-09	2.27E-09	7.51E-10
Methyl styrene (mixed isomers)	25013-15-4	1.74E-05	3.73E-07	6.72E-06	7.22E-06	2.26E-06	2.61E-05	2.73E-05	9.03E-06
Methylhydrazine	60-34-4	5.14E-10	1.10E-11	1.99E-10	2.13E-10	6.66E-11	7.71E-10	8.06E-10	2.67E-10
N,N-Diphenylamine	122-39-4	1.82E-05	3.91E-07	7.04E-06	7.56E-06	2.36E-06	2.73E-05	2.86E-05	9.45E-06
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	1.48E-06	3.18E-08	5.72E-07	6.15E-07	1.92E-07	2.22E-06	2.32E-06	7.68E-07
N-Nitrosomorpholine	59-89-2	5.51E-08	1.18E-09	2.13E-08	2.29E-08	7.14E-09	8.26E-08	8.64E-08	2.86E-08
N-Nitroso-N,N-dimethylamine	62-75-9	1.55E-09	3.33E-11	5.99E-10	6.44E-10	2.01E-10	2.33E-09	2.43E-09	8.05E-10
o-Anisidine	90-04-0	8.73E-08	1.87E-09	3.37E-08	3.62E-08	1.13E-08	1.31E-07	1.37E-07	4.52E-08
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	1.44E-09	3.09E-11	5.57E-10	5.98E-10	1.87E-10	2.16E-09	2.26E-09	7.47E-10
p-Phthalic acid	100-21-0	5.76E-07	1.24E-08	2.23E-07	2.39E-07	7.47E-08	8.64E-07	9.04E-07	2.99E-07
Pyridine	110-86-1	2.70E-08	5.78E-10	1.04E-08	1.12E-08	3.50E-09	4.05E-08	4.23E-08	1.40E-08
Quinoline	91-22-5	6.18E-07	1.32E-08	2.39E-07	2.56E-07	8.01E-08	9.26E-07	9.69E-07	3.20E-07
Quinone	106-51-4	9.14E-09	1.96E-10	3.53E-09	3.79E-09	1.18E-09	1.37E-08	1.43E-08	4.74E-09
Safrole	94-59-7	2.63E-06	5.65E-08	1.02E-06	1.09E-06	3.42E-07	3.95E-06	4.13E-06	1.37E-06
Tetrahydrofuran	109-99-9	1.61E-08	3.46E-10	6.23E-09	6.70E-09	2.09E-09	2.42E-08	2.53E-08	8.37E-09
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)									
1,2,4,5-Tetrachlorobenzene	95-94-3	2.51E-04	5.39E-06	9.71E-05	1.04E-04	3.26E-05	3.77E-04	3.94E-04	1.30E-04
1,3,5-Trinitrobenzene	99-35-4	8.70E-08	1.87E-09	3.36E-08	3.61E-08	1.13E-08	1.31E-07	1.37E-07	4.51E-08
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	8.53E-05	1.83E-06	3.29E-05	3.54E-05	1.11E-05	1.28E-04	1.34E-04	4.42E-05
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	2.00E-04	4.29E-06	7.72E-05	8.29E-05	2.59E-05	3.00E-04	3.14E-04	1.04E-04
2-sec-Butyl-4,6-dinitrophenol	88-85-7	2.09E-05	4.49E-07	8.08E-06	8.69E-06	2.71E-06	3.14E-05	3.28E-05	1.09E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
3,3'-Dichlorobenzidine	91-94-1	3.58	9.44E-05	7.56E-05	2.18E-04	2.05E-06	6.33E-07	1.99E-07
3,3'-Dimethoxybenzidine	119-90-4	1.81	1.62E-06	1.30E-06	3.75E-06	3.52E-08	1.09E-08	3.42E-09
4-Bromophenylphenyl ether	101-55-3	5.04	2.76E-03	2.21E-03	6.38E-03	5.98E-05	1.85E-05	5.81E-06
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	3.82	1.66E-04	1.33E-04	3.84E-04	3.60E-06	1.11E-06	3.49E-07
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	2.35	5.62E-06	4.50E-06	1.30E-05	1.22E-07	3.77E-08	1.18E-08
Chlorobenzilate	510-15-6	4.38	6.03E-04	4.82E-04	1.39E-03	1.31E-05	4.04E-06	1.27E-06
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	4.58	9.55E-04	7.64E-04	2.21E-03	2.07E-05	6.40E-06	2.01E-06
Hexachlorobenzene	118-74-1	5.50	7.99E-03	6.39E-03	1.85E-02	1.73E-04	5.35E-05	1.68E-05
Hexachlorobutadiene	87-68-3	4.73	1.35E-03	1.08E-03	3.13E-03	2.93E-05	9.06E-06	2.85E-06
Hexachlorocyclopentadiene	77-47-4	4.91	2.03E-03	1.62E-03	4.69E-03	4.40E-05	1.36E-05	4.27E-06
Hexachloroethane	67-72-1	3.98	2.43E-04	1.94E-04	5.61E-04	5.26E-06	1.63E-06	5.11E-07
Hexachlorophene	70-30-4	7.54	8.72E-01	6.98E-01	2.02E+00	1.89E-02	5.84E-03	1.84E-03
Hexamethylene-1,5-diisocyanate	822-06-0	3.20	3.98E-05	3.18E-05	9.20E-05	8.63E-07	2.67E-07	8.38E-08
Mirex	2385-85-5	6.89	1.95E-01	1.56E-01	4.51E-01	4.23E-03	1.31E-03	4.11E-04
Nitrofen	1836-75-5	5.53	8.51E-03	6.81E-03	1.97E-02	1.84E-04	5.70E-05	1.79E-05
Pentachlorobenzene	608-93-5	5.09	3.08E-03	2.46E-03	7.12E-03	6.68E-05	2.06E-05	6.49E-06
Pentachloronitrobenzene	82-68-8	4.64	1.10E-03	8.81E-04	2.55E-03	2.39E-05	7.37E-06	2.32E-06
Pentachlorophenol	87-86-5	5.08	3.01E-03	2.41E-03	6.97E-03	6.53E-05	2.02E-05	6.35E-06
Picric acid	88-89-1	2.03	2.69E-06	2.15E-06	6.22E-06	5.83E-08	1.80E-08	5.67E-09
Pronamide	23950-58-5	3.51	8.14E-05	6.51E-05	1.88E-04	1.76E-06	5.45E-07	1.71E-07
Strychnine	57-24-9	1.93	2.14E-06	1.71E-06	4.94E-06	4.63E-08	1.43E-08	4.50E-09
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	4.00	2.51E-04	2.01E-04	5.81E-04	5.44E-06	1.68E-06	5.29E-07

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
3,3'-Dichlorobenzidine	91-94-1	2.17E-05	4.65E-07	8.37E-06	8.99E-06	2.81E-06	3.25E-05	3.40E-05	1.12E-05
3,3'-Dimethoxybenzidine	119-90-4	3.72E-07	7.98E-09	1.44E-07	1.55E-07	4.83E-08	5.58E-07	5.84E-07	1.93E-07
4-Bromophenylphenyl ether	101-55-3	6.33E-04	1.36E-05	2.45E-04	2.63E-04	8.21E-05	9.50E-04	9.94E-04	3.28E-04
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	3.81E-05	8.17E-07	1.47E-05	1.58E-05	4.94E-06	5.71E-05	5.97E-05	1.97E-05
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	1.29E-06	2.77E-08	4.98E-07	5.36E-07	1.67E-07	1.94E-06	2.02E-06	6.69E-07
Chlorobenzilate	510-15-6	1.38E-04	2.97E-06	5.34E-05	5.74E-05	1.79E-05	2.07E-04	2.17E-04	7.17E-05
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	2.19E-04	4.70E-06	8.46E-05	9.09E-05	2.84E-05	3.29E-04	3.44E-04	1.14E-04
Hexachlorobenzene	118-74-1	1.83E-03	3.93E-05	7.08E-04	7.61E-04	2.38E-04	2.75E-03	2.88E-03	9.51E-04
Hexachlorobutadiene	87-68-3	3.10E-04	6.65E-06	1.20E-04	1.29E-04	4.02E-05	4.65E-04	4.87E-04	1.61E-04
Hexachlorocyclopentadiene	77-47-4	4.66E-04	9.99E-06	1.80E-04	1.93E-04	6.04E-05	6.99E-04	7.31E-04	2.42E-04
Hexachloroethane	67-72-1	5.57E-05	1.19E-06	2.15E-05	2.31E-05	7.22E-06	8.35E-05	8.74E-05	2.89E-05
Hexachlorophene	70-30-4	2.00E-01	4.29E-03	7.73E-02	8.30E-02	2.59E-02	3.00E-01	3.14E-01	1.04E-01
Hexamethylene-1,5-diisocyanate	822-06-0	9.14E-06	1.96E-07	3.53E-06	3.79E-06	1.18E-06	1.37E-05	1.43E-05	4.74E-06
Mirex	2385-85-5	4.47E-02	9.59E-04	1.73E-02	1.86E-02	5.80E-03	6.71E-02	7.02E-02	2.32E-02
Nitrofen	1836-75-5	1.95E-03	4.19E-05	7.54E-04	8.11E-04	2.53E-04	2.93E-03	3.06E-03	1.01E-03
Pentachlorobenzene	608-93-5	7.07E-04	1.52E-05	2.73E-04	2.93E-04	9.16E-05	1.06E-03	1.11E-03	3.67E-04
Pentachloronitrobenzene	82-68-8	2.53E-04	5.42E-06	9.76E-05	1.05E-04	3.28E-05	3.79E-04	3.96E-04	1.31E-04
Pentachlorophenol	87-86-5	6.92E-04	1.48E-05	2.67E-04	2.87E-04	8.97E-05	1.04E-03	1.09E-03	3.59E-04
Picric acid	88-89-1	6.18E-07	1.32E-08	2.39E-07	2.56E-07	8.01E-08	9.26E-07	9.69E-07	3.20E-07
Pronamide	23950-58-5	1.87E-05	4.00E-07	7.21E-06	7.75E-06	2.42E-06	2.80E-05	2.93E-05	9.68E-06
Strychnine	57-24-9	4.91E-07	1.05E-08	1.89E-07	2.04E-07	6.36E-08	7.36E-07	7.70E-07	2.54E-07
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	5.76E-05	1.24E-06	2.23E-05	2.39E-05	7.47E-06	8.64E-05	9.04E-05	2.99E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Trifluralin	1582-09-8	5.34	5.50E-03	4.40E-03	1.27E-02	1.19E-04	3.68E-05	1.16E-05
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides								
2,4,5-T	93-76-5	3.36	5.75E-05	4.60E-05	1.33E-04	1.25E-06	3.85E-07	1.21E-07
2,4-D and esters	94-75-7	2.81	1.62E-05	1.30E-05	3.75E-05	3.52E-07	1.09E-07	3.41E-08
4,4'-DDD	72-54-8	6.12	3.32E-02	2.66E-02	7.67E-02	7.20E-04	2.22E-04	6.99E-05
4,4'-DDE	72-55-9	6.26	4.54E-02	3.63E-02	1.05E-01	9.83E-04	3.04E-04	9.55E-05
4,4'-DDT	50-29-3	6.07	2.95E-02	2.36E-02	6.82E-02	6.39E-04	1.98E-04	6.21E-05
Aldrin	309-00-2	6.18	3.79E-02	3.03E-02	8.77E-02	8.22E-04	2.54E-04	7.99E-05
alpha-BHC	319-84-6	3.80	1.58E-04	1.27E-04	3.66E-04	3.43E-06	1.06E-06	3.33E-07
beta-BHC	319-85-7	3.83	1.71E-04	1.37E-04	3.95E-04	3.71E-06	1.15E-06	3.60E-07
Chlordane	57-74-9	5.94	2.18E-02	1.74E-02	5.03E-02	4.72E-04	1.46E-04	4.58E-05
Delta-BHC	319-86-8	4.14	3.47E-04	2.77E-04	8.02E-04	7.52E-06	2.32E-06	7.30E-07
Dieldrin	60-57-1	5.27	4.67E-03	3.74E-03	1.08E-02	1.01E-04	3.13E-05	9.84E-06
Endothall	145-73-3	-0.87	3.39E-09	2.71E-09	7.83E-09	7.35E-11	2.27E-11	7.13E-12
Endrin	72-20-8	4.89	1.96E-03	1.57E-03	4.52E-03	4.24E-05	1.31E-05	4.12E-06
gamma-BHC (Lindane)	58-89-9	3.72	1.32E-04	1.05E-04	3.05E-04	2.86E-06	8.83E-07	2.78E-07
Heptachlor	76-44-8	5.02	2.60E-03	2.08E-03	6.02E-03	5.64E-05	1.74E-05	5.48E-06
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	4.53	8.44E-04	6.75E-04	1.95E-03	1.83E-05	5.65E-06	1.78E-06
Silvex (2,4,5-TP)	93-72-1	3.80	1.58E-04	1.27E-04	3.66E-04	3.44E-06	1.06E-06	3.34E-07
Toxaphene	8001-35-2	5.50	7.94E-03	6.35E-03	1.84E-02	1.72E-04	5.32E-05	1.67E-05
Inorganic Chemicals and Compounds								
Metals								
Aluminum	7429-90-5	NA	1.50E-03	1.50E-03	3.47E-03	4.06E-05	1.00E-05	3.95E-06
Antimony	7440-36-0	NA	1.00E-03	1.00E-03	2.31E-03	2.71E-05	6.70E-06	2.63E-06

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Trifluralin	1582-09-8	1.26E-03	2.70E-05	4.87E-04	5.23E-04	1.63E-04	1.89E-03	1.98E-03	6.54E-04
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides									
2,4,5-T	93-76-5	1.32E-05	2.83E-07	5.10E-06	5.48E-06	1.71E-06	1.98E-05	2.07E-05	6.85E-06
2,4-D and esters	94-75-7	3.72E-06	7.98E-08	1.44E-06	1.54E-06	4.82E-07	5.58E-06	5.84E-06	1.93E-06
4,4'-DDD	72-54-8	7.62E-03	1.63E-04	2.94E-03	3.16E-03	9.88E-04	1.14E-02	1.20E-02	3.95E-03
4,4'-DDE	72-55-9	1.04E-02	2.23E-04	4.02E-03	4.32E-03	1.35E-03	1.56E-02	1.63E-02	5.40E-03
4,4'-DDT	50-29-3	6.77E-03	1.45E-04	2.61E-03	2.81E-03	8.78E-04	1.02E-02	1.06E-02	3.51E-03
Aldrin	309-00-2	8.70E-03	1.87E-04	3.36E-03	3.61E-03	1.13E-03	1.31E-02	1.37E-02	4.51E-03
alpha-BHC	319-84-6	3.63E-05	7.79E-07	1.40E-05	1.51E-05	4.71E-06	5.45E-05	5.70E-05	1.88E-05
beta-BHC	319-85-7	3.93E-05	8.42E-07	1.52E-05	1.63E-05	5.09E-06	5.89E-05	6.16E-05	2.04E-05
Chlordane	57-74-9	4.99E-03	1.07E-04	1.93E-03	2.07E-03	6.47E-04	7.49E-03	7.83E-03	2.59E-03
Delta-BHC	319-86-8	7.96E-05	1.71E-06	3.07E-05	3.30E-05	1.03E-05	1.19E-04	1.25E-04	4.13E-05
Dieldrin	60-57-1	1.07E-03	2.30E-05	4.14E-04	4.45E-04	1.39E-04	1.61E-03	1.68E-03	5.56E-04
Endothall	145-73-3	7.78E-10	1.67E-11	3.00E-10	3.23E-10	1.01E-10	1.17E-09	1.22E-09	4.03E-10
Endrin	72-20-8	4.49E-04	9.63E-06	1.73E-04	1.86E-04	5.82E-05	6.73E-04	7.04E-04	2.33E-04
gamma-BHC (Lindane)	58-89-9	3.03E-05	6.49E-07	1.17E-05	1.26E-05	3.92E-06	4.54E-05	4.75E-05	1.57E-05
Heptachlor	76-44-8	5.97E-04	1.28E-05	2.31E-04	2.48E-04	7.74E-05	8.96E-04	9.37E-04	3.10E-04
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	1.94E-04	4.15E-06	7.48E-05	8.04E-05	2.51E-05	2.90E-04	3.04E-04	1.00E-04
Silvex (2,4,5-TP)	93-72-1	3.64E-05	7.80E-07	1.40E-05	1.51E-05	4.72E-06	5.45E-05	5.71E-05	1.89E-05
Toxaphene	8001-35-2	1.82E-03	3.91E-05	7.04E-04	7.56E-04	2.36E-04	2.73E-03	2.86E-03	9.45E-04
Inorganic Chemicals and Compounds									
Metals									
Aluminum	7429-90-5	3.44E-04	9.23E-06	1.66E-04	1.79E-04	5.58E-05	6.45E-04	6.75E-04	1.79E-04
Antimony	7440-36-0	2.30E-04	6.15E-06	1.11E-04	1.19E-04	3.72E-05	4.30E-04	4.50E-04	1.19E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Arsenic	7440-38-2	NA	2.00E-03	2.00E-03	4.62E-03	5.42E-05	1.34E-05	5.26E-06
Barium	7440-39-3	NA	1.50E-04	1.50E-04	3.47E-04	4.06E-06	1.00E-06	3.95E-07
Beryllium	7440-41-7	NA	1.00E-03	1.00E-03	2.31E-03	2.71E-05	6.70E-06	2.63E-06
Bismuth	7440-69-9	NA	4.00E-04	4.00E-04	9.25E-04	1.08E-05	2.68E-06	1.05E-06
Boron	7440-42-8	NA	8.00E-04	8.00E-04	1.85E-03	2.17E-05	5.36E-06	2.11E-06
Cadmium	7440-43-9	NA	3.40E-03	3.40E-03	7.86E-03	9.21E-05	2.28E-05	8.95E-06
Calcium	7440-70-2	NA	7.00E-04	7.00E-04	1.62E-03	1.90E-05	4.69E-06	1.84E-06
Chromium[f]	18540-29-9	NA	5.51E-03	5.51E-03	1.27E-02	1.49E-04	3.69E-05	1.45E-05
Cobalt	7440-48-4	NA	2.00E-02	2.00E-02	4.62E-02	5.42E-04	1.34E-04	5.26E-05
Copper	7440-50-8	NA	1.00E-02	1.00E-02	2.31E-02	2.71E-04	6.70E-05	2.63E-05
Iron	7439-89-6	NA	2.00E-02	2.00E-02	4.62E-02	5.42E-04	1.34E-04	5.26E-05
Lead	7439-92-1	NA	3.00E-04	3.00E-04	6.94E-04	8.13E-06	2.01E-06	7.90E-07
Lithium	7439-93-2	NA	1.00E-02	1.00E-02	2.31E-02	2.71E-04	6.70E-05	2.63E-05
Magnesium	7439-95-4	NA	5.00E-03	5.00E-03	1.16E-02	1.35E-04	3.35E-05	1.32E-05
Manganese	7439-96-5	NA	4.00E-04	4.00E-04	9.25E-04	1.08E-05	2.68E-06	1.05E-06
Mercury	7439-97-6	NA	NA	No data	No data	No data	No data	No data
Mercury - Hg+2	7487-94-7	NA	5.21E-03	5.21E-03	1.20E-02	1.41E-04	3.49E-05	1.37E-05
Methylmercury	22967-92-6	NA	7.81E-04	7.81E-04	1.81E-03	2.12E-05	5.23E-06	2.06E-06
Molybdenum	7439-98-7	NA	6.00E-03	6.00E-03	1.39E-02	1.63E-04	4.02E-05	1.58E-05
Nickel	7440-02-0	NA	6.00E-03	6.00E-03	1.39E-02	1.63E-04	4.02E-05	1.58E-05
Potassium	7440-09-7	NA	2.00E-02	2.00E-02	4.62E-02	5.42E-04	1.34E-04	5.26E-05
Rhodium	7440-16-6	NA	2.00E-03	2.00E-03	4.62E-03	5.42E-05	1.34E-05	5.26E-06
Selenium	7782-49-2	NA	1.90E-03	1.90E-03	4.39E-03	5.15E-05	1.27E-05	5.00E-06
Silicon	7440-21-3	NA	4.00E-05	4.00E-05	9.25E-05	1.08E-06	2.68E-07	1.05E-07
Silver	7440-22-4	NA	3.00E-03	3.00E-03	6.94E-03	8.13E-05	2.01E-05	7.90E-06
Sodium	7440-23-5	NA	5.50E-02	5.50E-02	1.27E-01	1.49E-03	3.68E-04	1.45E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Arsenic	7440-38-2	4.59E-04	1.23E-05	2.22E-04	2.38E-04	7.44E-05	8.60E-04	9.00E-04	2.38E-04
Barium	7440-39-3	3.44E-05	9.23E-07	1.66E-05	1.79E-05	5.58E-06	6.45E-05	6.75E-05	1.79E-05
Beryllium	7440-41-7	2.30E-04	6.15E-06	1.11E-04	1.19E-04	3.72E-05	4.30E-04	4.50E-04	1.19E-04
Bismuth	7440-69-9	9.18E-05	2.46E-06	4.43E-05	4.76E-05	1.49E-05	1.72E-04	1.80E-04	4.76E-05
Boron	7440-42-8	1.84E-04	4.92E-06	8.86E-05	9.52E-05	2.98E-05	3.44E-04	3.60E-04	9.52E-05
Cadmium	7440-43-9	7.80E-04	2.09E-05	3.77E-04	4.05E-04	1.26E-04	1.46E-03	1.53E-03	4.05E-04
Calcium	7440-70-2	1.61E-04	4.31E-06	7.75E-05	8.33E-05	2.60E-05	3.01E-04	3.15E-04	8.33E-05
Chromium[f]	18540-29-9	1.26E-03	3.39E-05	6.10E-04	6.56E-04	2.05E-04	2.37E-03	2.48E-03	6.56E-04
Cobalt	7440-48-4	4.59E-03	1.23E-04	2.22E-03	2.38E-03	7.44E-04	8.60E-03	9.00E-03	2.38E-03
Copper	7440-50-8	2.30E-03	6.15E-05	1.11E-03	1.19E-03	3.72E-04	4.30E-03	4.50E-03	1.19E-03
Iron	7439-89-6	4.59E-03	1.23E-04	2.22E-03	2.38E-03	7.44E-04	8.60E-03	9.00E-03	2.38E-03
Lead	7439-92-1	6.89E-05	1.85E-06	3.32E-05	3.57E-05	1.12E-05	1.29E-04	1.35E-04	3.57E-05
Lithium	7439-93-2	2.30E-03	6.15E-05	1.11E-03	1.19E-03	3.72E-04	4.30E-03	4.50E-03	1.19E-03
Magnesium	7439-95-4	1.15E-03	3.08E-05	5.54E-04	5.95E-04	1.86E-04	2.15E-03	2.25E-03	5.95E-04
Manganese	7439-96-5	9.18E-05	2.46E-06	4.43E-05	4.76E-05	1.49E-05	1.72E-04	1.80E-04	4.76E-05
Mercury	7439-97-6	No data	No data	No data	No data	No data	No data	No data	No data
Mercury - Hg+2	7487-94-7	1.19E-03	3.20E-05	5.77E-04	6.20E-04	1.94E-04	2.24E-03	2.34E-03	6.20E-04
Methylmercury	22967-92-6	1.79E-04	4.80E-06	8.65E-05	9.30E-05	2.90E-05	3.36E-04	3.51E-04	9.29E-05
Molybdenum	7439-98-7	1.38E-03	3.69E-05	6.65E-04	7.14E-04	2.23E-04	2.58E-03	2.70E-03	7.14E-04
Nickel	7440-02-0	1.38E-03	3.69E-05	6.65E-04	7.14E-04	2.23E-04	2.58E-03	2.70E-03	7.14E-04
Potassium	7440-09-7	4.59E-03	1.23E-04	2.22E-03	2.38E-03	7.44E-04	8.60E-03	9.00E-03	2.38E-03
Rhodium	7440-16-6	4.59E-04	1.23E-05	2.22E-04	2.38E-04	7.44E-05	8.60E-04	9.00E-04	2.38E-04
Selenium	7782-49-2	4.36E-04	1.17E-05	2.10E-04	2.26E-04	7.07E-05	8.17E-04	8.55E-04	2.26E-04
Silicon	7440-21-3	9.18E-06	2.46E-07	4.43E-06	4.76E-06	1.49E-06	1.72E-05	1.80E-05	4.76E-06
Silver	7440-22-4	6.89E-04	1.85E-05	3.32E-04	3.57E-04	1.12E-04	1.29E-03	1.35E-03	3.57E-04
Sodium	7440-23-5	1.26E-02	3.38E-04	6.09E-03	6.55E-03	2.05E-03	2.37E-02	2.48E-02	6.55E-03

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Strontium	7440-24-6	NA	3.00E-04	3.00E-04	6.94E-04	8.13E-06	2.01E-06	7.90E-07
Tantalum	7440-25-7	NA	6.00E-04	6.00E-04	1.39E-03	1.63E-05	4.02E-06	1.58E-06
Thallium	7440-28-0	NA	4.00E-02	4.00E-02	9.25E-02	1.08E-03	2.68E-04	1.05E-04
Tin	7440-31-5	NA	8.00E-02	8.00E-02	1.85E-01	2.17E-03	5.36E-04	2.11E-04
Tungsten	7440-33-7	NA	4.50E-02	4.50E-02	1.04E-01	1.22E-03	3.01E-04	1.18E-04
Uranium	7440-61-1	NA	2.00E-04	2.00E-04	4.62E-04	5.42E-06	1.34E-06	5.26E-07
Vanadium	7440-62-2	NA	2.50E-03	2.50E-03	5.78E-03	6.77E-05	1.67E-05	6.58E-06
Yttrium	7440-65-5	NA	3.00E-04	3.00E-04	6.94E-04	8.13E-06	2.01E-06	7.90E-07
Zinc	7440-66-6	NA	1.00E-01	1.00E-01	2.31E-01	2.71E-03	6.70E-04	2.63E-04
Zirconium	7440-67-7	NA	5.50E-03	5.50E-03	1.27E-02	1.49E-04	3.68E-05	1.45E-05
Non-metals and Anions								
Ammonia/Ammonium	7664-41-7	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05
Bromide	24959-67-9	NA	2.50E-02	2.50E-02	3.66E-02	6.14E-04	1.67E-04	6.58E-05
Chloride	16887-00-6	NA	8.00E-02	8.00E-02	1.17E-01	1.97E-03	5.36E-04	2.11E-04
Cyanide	57-12-5	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05
Fluoride	16984-48-8	NA	1.50E-01	1.50E-01	2.19E-01	3.69E-03	1.00E-03	3.95E-04
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	NA	7.00E-03	7.00E-03	1.02E-02	1.72E-04	4.69E-05	1.84E-05
Nitrate	14797-55-8	NA	7.50E-02	7.50E-02	1.10E-01	1.84E-03	5.02E-04	1.97E-04
Nitrite	14797-65-0	NA	7.50E-02	7.50E-02	1.10E-01	1.84E-03	5.02E-04	1.97E-04
Phosphate	14265-44-2	NA	5.50E-02	5.50E-02	8.05E-02	1.35E-03	3.68E-04	1.45E-04
Phosphorus	7723-14-0	NA	5.50E-02	5.50E-02	8.05E-02	1.35E-03	3.68E-04	1.45E-04
Sulfate	14808-79-8	NA	1.00E-01	1.00E-01	1.46E-01	2.46E-03	6.70E-04	2.63E-04
Total Sulfur	63705-05-5	NA	1.00E-01	1.00E-01	1.46E-01	2.46E-03	6.70E-04	2.63E-04
Criteria Pollutants								
Carbon monoxide	630-08-0	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Strontium	7440-24-6	6.89E-05	1.85E-06	3.32E-05	3.57E-05	1.12E-05	1.29E-04	1.35E-04	3.57E-05
Tantalum	7440-25-7	1.38E-04	3.69E-06	6.65E-05	7.14E-05	2.23E-05	2.58E-04	2.70E-04	7.14E-05
Thallium	7440-28-0	9.18E-03	2.46E-04	4.43E-03	4.76E-03	1.49E-03	1.72E-02	1.80E-02	4.76E-03
Tin	7440-31-5	1.84E-02	4.92E-04	8.86E-03	9.52E-03	2.98E-03	3.44E-02	3.60E-02	9.52E-03
Tungsten	7440-33-7	1.03E-02	2.77E-04	4.98E-03	5.36E-03	1.67E-03	1.94E-02	2.03E-02	5.36E-03
Uranium	7440-61-1	4.59E-05	1.23E-06	2.22E-05	2.38E-05	7.44E-06	8.60E-05	9.00E-05	2.38E-05
Vanadium	7440-62-2	5.74E-04	1.54E-05	2.77E-04	2.98E-04	9.30E-05	1.08E-03	1.13E-03	2.98E-04
Yttrium	7440-65-5	6.89E-05	1.85E-06	3.32E-05	3.57E-05	1.12E-05	1.29E-04	1.35E-04	3.57E-05
Zinc	7440-66-6	2.30E-02	6.15E-04	1.11E-02	1.19E-02	3.72E-03	4.30E-02	4.50E-02	1.19E-02
Zirconium	7440-67-7	1.26E-03	3.38E-05	6.09E-04	6.55E-04	2.05E-04	2.37E-03	2.48E-03	6.55E-04
Non-metals and Anions									
Ammonia/Ammonium	7664-41-7	1.17E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03
Bromide	24959-67-9	1.50E-02	3.45E-04	2.77E-03	2.98E-03	1.86E-04	1.08E-02	1.13E-02	2.98E-03
Chloride	16887-00-6	4.79E-02	1.10E-03	8.86E-03	9.52E-03	5.95E-04	3.44E-02	3.60E-02	9.52E-03
Cyanide	57-12-5	1.33E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03
Fluoride	16984-48-8	8.99E-02	2.07E-03	1.66E-02	1.79E-02	1.12E-03	6.45E-02	6.75E-02	1.79E-02
Hydroxide	14280-30-9	NA	NA	NA	NA	NA	NA	NA	NA
Iodine	7553-56-2	4.19E-03	9.66E-05	7.75E-04	8.33E-04	5.21E-05	3.01E-03	3.15E-03	8.33E-04
Nitrate	14797-55-8	4.49E-02	1.04E-03	8.31E-03	8.93E-03	5.58E-04	3.23E-02	3.38E-02	8.93E-03
Nitrite	14797-65-0	4.49E-02	1.04E-03	8.31E-03	8.93E-03	5.58E-04	3.23E-02	3.38E-02	8.93E-03
Phosphate	14265-44-2	3.30E-02	7.59E-04	6.09E-03	6.55E-03	4.09E-04	2.37E-02	2.48E-02	6.55E-03
Phosphorus	7723-14-0	3.30E-02	7.59E-04	6.09E-03	6.55E-03	4.09E-04	2.37E-02	2.48E-02	6.55E-03
Sulfate	14808-79-8	5.99E-02	1.38E-03	1.11E-02	1.19E-02	7.44E-04	4.30E-02	4.50E-02	1.19E-02
Total Sulfur	63705-05-5	5.99E-02	1.38E-03	1.11E-02	1.19E-02	7.44E-04	4.30E-02	4.50E-02	1.19E-02
Criteria Pollutants									
Carbon monoxide	630-08-0	1.17E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Nitrogen dioxide	10102-44-0	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05
Ozone	10028-15-6	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	NA	2.23E-02	1.95E-02	2.85E-02	4.79E-04	1.31E-04	5.13E-05
Radionuclides								
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	NA	2.50E-03	2.50E-03	3.66E-03	6.14E-05	1.67E-05	6.58E-06
Americium-241	14596-10-2	NA	3.50E-06	3.50E-06	5.12E-06	8.60E-08	2.34E-08	9.21E-09
Americium-243	14993-75-0	NA	3.50E-06	3.50E-06	5.12E-06	8.60E-08	2.34E-08	9.21E-09
Antimony-125	14234-35-6	NA	1.00E-03	1.00E-03	1.46E-03	2.46E-05	6.70E-06	2.63E-06
Barium-137m	13981-97-0	NA	1.50E-04	1.50E-04	2.19E-04	3.69E-06	1.00E-06	3.95E-07
Cadmium-113m	14336-66-4	NA	1.20E-04	1.20E-04	1.76E-04	2.95E-06	8.04E-07	3.16E-07
Carbon-14	14762-75-5	NA	NA	NA	NA	NA	NA	NA
Cesium-134	13967-70-9	NA	2.00E-02	2.00E-02	2.93E-02	4.92E-04	1.34E-04	5.26E-05
Cesium-137	10045-97-3	NA	2.00E-02	2.00E-02	2.93E-02	4.92E-04	1.34E-04	5.26E-05
Cobalt-60	10198-40-0	NA	2.00E-02	2.00E-02	2.93E-02	4.92E-04	1.34E-04	5.26E-05
Curium-242	15510-73-3	NA	3.50E-06	3.50E-06	5.12E-06	8.60E-08	2.34E-08	9.21E-09
Curium-243	15757-87-6	NA	3.50E-06	3.50E-06	5.12E-06	8.60E-08	2.34E-08	9.21E-09
Curium-244	13981-15-2	NA	3.50E-06	3.50E-06	5.12E-06	8.60E-08	2.34E-08	9.21E-09
Europium-152	14683-23-9	NA	5.00E-03	5.00E-03	7.32E-03	1.23E-04	3.35E-05	1.32E-05
Europium-154	15585-10-1	NA	5.00E-03	5.00E-03	7.32E-03	1.23E-04	3.35E-05	1.32E-05
Europium-155	14391-16-3	NA	5.00E-03	5.00E-03	7.32E-03	1.23E-04	3.35E-05	1.32E-05
Iodine-129	15046-84-1	NA	7.00E-03	7.00E-03	1.02E-02	1.72E-04	4.69E-05	1.84E-05
Neptunium-237	13994-20-2	NA	5.50E-03	5.50E-03	8.05E-03	1.35E-04	3.68E-05	1.45E-05
Nickel-59	14336-70-0	NA	6.00E-03	6.00E-03	8.78E-03	1.47E-04	4.02E-05	1.58E-05
Nickel-63	13981-37-8	NA	6.00E-03	6.00E-03	8.78E-03	1.47E-04	4.02E-05	1.58E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Nitrogen dioxide	10102-44-0	1.17E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03
Ozone	10028-15-6	1.17E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03
Particulate matter	No CAS #	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur dioxide	7446-09-5	1.17E-02	2.69E-04	2.16E-03	2.32E-03	1.45E-04	8.39E-03	8.78E-03	2.32E-03
Radionuclides									
All radionuclides combined (rad/d)	No CAS #	NA	NA	NA	NA	NA	NA	NA	NA
Actinium-227	14952-40-0	1.50E-03	3.45E-05	2.77E-04	2.98E-04	1.86E-05	1.08E-03	1.13E-03	2.98E-04
Americium-241	14596-10-2	2.10E-06	4.83E-08	3.88E-07	4.17E-07	2.60E-08	1.51E-06	1.58E-06	4.17E-07
Americium-243	14993-75-0	2.10E-06	4.83E-08	3.88E-07	4.17E-07	2.60E-08	1.51E-06	1.58E-06	4.17E-07
Antimony-125	14234-35-6	5.99E-04	1.38E-05	1.11E-04	1.19E-04	7.44E-06	4.30E-04	4.50E-04	1.19E-04
Barium-137m	13981-97-0	8.99E-05	2.07E-06	1.66E-05	1.79E-05	1.12E-06	6.45E-05	6.75E-05	1.79E-05
Cadmium-113m	14336-66-4	7.19E-05	1.66E-06	1.33E-05	1.43E-05	8.93E-07	5.16E-05	5.40E-05	1.43E-05
Carbon-14	14762-75-5	NA	NA	NA	NA	NA	NA	NA	NA
Cesium-134	13967-70-9	1.20E-02	2.76E-04	2.22E-03	2.38E-03	1.49E-04	8.60E-03	9.00E-03	2.38E-03
Cesium-137	10045-97-3	1.20E-02	2.76E-04	2.22E-03	2.38E-03	1.49E-04	8.60E-03	9.00E-03	2.38E-03
Cobalt-60	10198-40-0	1.20E-02	2.76E-04	2.22E-03	2.38E-03	1.49E-04	8.60E-03	9.00E-03	2.38E-03
Curium-242	15510-73-3	2.10E-06	4.83E-08	3.88E-07	4.17E-07	2.60E-08	1.51E-06	1.58E-06	4.17E-07
Curium-243	15757-87-6	2.10E-06	4.83E-08	3.88E-07	4.17E-07	2.60E-08	1.51E-06	1.58E-06	4.17E-07
Curium-244	13981-15-2	2.10E-06	4.83E-08	3.88E-07	4.17E-07	2.60E-08	1.51E-06	1.58E-06	4.17E-07
Europium-152	14683-23-9	3.00E-03	6.90E-05	5.54E-04	5.95E-04	3.72E-05	2.15E-03	2.25E-03	5.95E-04
Europium-154	15585-10-1	3.00E-03	6.90E-05	5.54E-04	5.95E-04	3.72E-05	2.15E-03	2.25E-03	5.95E-04
Europium-155	14391-16-3	3.00E-03	6.90E-05	5.54E-04	5.95E-04	3.72E-05	2.15E-03	2.25E-03	5.95E-04
Iodine-129	15046-84-1	4.19E-03	9.66E-05	7.75E-04	8.33E-04	5.21E-05	3.01E-03	3.15E-03	8.33E-04
Neptunium-237	13994-20-2	3.30E-03	7.59E-05	6.09E-04	6.55E-04	4.09E-05	2.37E-03	2.48E-03	6.55E-04
Nickel-59	14336-70-0	3.60E-03	8.28E-05	6.65E-04	7.14E-04	4.46E-05	2.58E-03	2.70E-03	7.14E-04
Nickel-63	13981-37-8	3.60E-03	8.28E-05	6.65E-04	7.14E-04	4.46E-05	2.58E-03	2.70E-03	7.14E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Niobium-93m	7440-03-1[g]	NA	2.50E-01	2.50E-01	3.66E-01	6.14E-03	1.67E-03	6.58E-04
Plutonium-238	13981-16-3	NA	5.00E-07	5.00E-07	7.32E-07	1.23E-08	3.35E-09	1.32E-09
Plutonium-239	15117-48-3	NA	5.00E-07	5.00E-07	7.32E-07	1.23E-08	3.35E-09	1.32E-09
Plutonium-240	14119-33-6	NA	5.00E-07	5.00E-07	7.32E-07	1.23E-08	3.35E-09	1.32E-09
Plutonium-241	14119-32-5	NA	5.00E-07	5.00E-07	7.32E-07	1.23E-08	3.35E-09	1.32E-09
Plutonium-242	13982-10-0	NA	5.00E-07	5.00E-07	7.32E-07	1.23E-08	3.35E-09	1.32E-09
Protactinium-231	14331-85-2	NA	1.00E-05	1.00E-05	1.46E-05	2.46E-07	6.70E-08	2.63E-08
Radium-226	13982-63-3	NA	2.50E-04	2.50E-04	3.66E-04	6.14E-06	1.67E-06	6.58E-07
Radium-228	15262-20-1	NA	2.50E-04	2.50E-04	3.66E-04	6.14E-06	1.67E-06	6.58E-07
Ruthenium-106	13967-48-1	NA	2.00E-03	2.00E-03	2.93E-03	4.92E-05	1.34E-05	5.26E-06
Samarium-151	15715-94-3	NA	5.00E-03	5.00E-03	7.32E-03	1.23E-04	3.35E-05	1.32E-05
Selenium-79	15758-45-9	NA	1.50E-02	1.50E-02	2.19E-02	3.69E-04	1.00E-04	3.95E-05
Strontium-90	10098-97-2	NA	3.00E-04	3.00E-04	4.39E-04	7.37E-06	2.01E-06	7.90E-07
Technetium-99	14133-76-7	NA	8.50E-03	8.50E-03	1.24E-02	2.09E-04	5.69E-05	2.24E-05
Thorium-229	15594-54-4	NA	6.00E-06	6.00E-06	8.78E-06	1.47E-07	4.02E-08	1.58E-08
Thorium-232	7440-29-1	NA	6.00E-06	6.00E-06	8.78E-06	1.47E-07	4.02E-08	1.58E-08
Tin-126	15832-50-5	NA	8.00E-02	8.00E-02	1.17E-01	1.97E-03	5.36E-04	2.11E-04
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Uranium-233	13968-55-3	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Uranium-234	13966-29-5	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Uranium-235	15117-96-1	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Uranium-236	13982-70-2	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Uranium-238	7440-61-1	NA	2.00E-04	2.00E-04	2.93E-04	4.92E-06	1.34E-06	5.26E-07
Yttrium-90	10098-91-6	NA	3.00E-04	3.00E-04	4.39E-04	7.37E-06	2.01E-06	7.90E-07
Zirconium-93	15751-77-6	NA	5.50E-03	5.50E-03	8.05E-03	1.35E-04	3.68E-05	1.45E-05

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_p) ([mg/kg tissue]/[mg/kg food])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Niobium-93m	7440-03-1[g]	1.50E-01	3.45E-03	2.77E-02	2.98E-02	1.86E-03	1.08E-01	1.13E-01	2.98E-02
Plutonium-238	13981-16-3	3.00E-07	6.90E-09	5.54E-08	5.95E-08	3.72E-09	2.15E-07	2.25E-07	5.95E-08
Plutonium-239	15117-48-3	3.00E-07	6.90E-09	5.54E-08	5.95E-08	3.72E-09	2.15E-07	2.25E-07	5.95E-08
Plutonium-240	14119-33-6	3.00E-07	6.90E-09	5.54E-08	5.95E-08	3.72E-09	2.15E-07	2.25E-07	5.95E-08
Plutonium-241	14119-32-5	3.00E-07	6.90E-09	5.54E-08	5.95E-08	3.72E-09	2.15E-07	2.25E-07	5.95E-08
Plutonium-242	13982-10-0	3.00E-07	6.90E-09	5.54E-08	5.95E-08	3.72E-09	2.15E-07	2.25E-07	5.95E-08
Protactinium-231	14331-85-2	5.99E-06	1.38E-07	1.11E-06	1.19E-06	7.44E-08	4.30E-06	4.50E-06	1.19E-06
Radium-226	13982-63-3	1.50E-04	3.45E-06	2.77E-05	2.98E-05	1.86E-06	1.08E-04	1.13E-04	2.98E-05
Radium-228	15262-20-1	1.50E-04	3.45E-06	2.77E-05	2.98E-05	1.86E-06	1.08E-04	1.13E-04	2.98E-05
Ruthenium-106	13967-48-1	1.20E-03	2.76E-05	2.22E-04	2.38E-04	1.49E-05	8.60E-04	9.00E-04	2.38E-04
Samarium-151	15715-94-3	3.00E-03	6.90E-05	5.54E-04	5.95E-04	3.72E-05	2.15E-03	2.25E-03	5.95E-04
Selenium-79	15758-45-9	8.99E-03	2.07E-04	1.66E-03	1.79E-03	1.12E-04	6.45E-03	6.75E-03	1.79E-03
Strontium-90	10098-97-2	1.80E-04	4.14E-06	3.32E-05	3.57E-05	2.23E-06	1.29E-04	1.35E-04	3.57E-05
Technetium-99	14133-76-7	5.09E-03	1.17E-04	9.42E-04	1.01E-03	6.32E-05	3.66E-03	3.83E-03	1.01E-03
Thorium-229	15594-54-4	3.60E-06	8.28E-08	6.65E-07	7.14E-07	4.46E-08	2.58E-06	2.70E-06	7.14E-07
Thorium-232	7440-29-1	3.60E-06	8.28E-08	6.65E-07	7.14E-07	4.46E-08	2.58E-06	2.70E-06	7.14E-07
Tin-126	15832-50-5	4.79E-02	1.10E-03	8.86E-03	9.52E-03	5.95E-04	3.44E-02	3.60E-02	9.52E-03
Tritium	10028-17-8	NA	NA	NA	NA	NA	NA	NA	NA
Uranium-232	14158-29-3	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Uranium-233	13968-55-3	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Uranium-234	13966-29-5	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Uranium-235	15117-96-1	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Uranium-236	13982-70-2	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Uranium-238	7440-61-1	1.20E-04	2.76E-06	2.22E-05	2.38E-05	1.49E-06	8.60E-05	9.00E-05	2.38E-05
Yttrium-90	10098-91-6	1.80E-04	4.14E-06	3.32E-05	3.57E-05	2.23E-06	1.29E-04	1.35E-04	3.57E-05
Zirconium-93	15751-77-6	3.30E-03	7.59E-05	6.09E-04	6.55E-04	4.09E-05	2.37E-03	2.48E-03	6.55E-04

Table C2-3 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Food by Mammals and Birds

Notes/Sources

NA = Not applicable.

[a] From Appendix B, Table B-1.

[b] Ingestion-to-tissue transfer factor (mg/kgBW per mg/d); from Table C2-1.

[c] Bird Ba is the same as Mammal Ba multiplied by 0.8 for organic COPCs, and the same as Mammal Ba for inorganic COPCs and ROPCs.

[d] $Ba \times IR_F \times BW$ for each receptor, where IR_F is the daily food ingestion rate (kg/kgBW/d) and BW is the body weight (kg) of the receptor (Risk Assessment Work Plan section 8.1.3.3).

[e] Values for Aroclor-1254 were used for polychlorinated biphenyl mixtures.

[f] Values for Cr(VI) were used for calculations.

[g] Chemical Abstracts Service Registry number for niobium metal.

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Organic Compounds								
Aromatic Halogenated Hydrocarbons								
2,3,4,6-Tetrachlorophenol	58-90-2	4.30	5.02E-04	4.02E-04	1.47E-03	5.96E-06	0.00E+00	4.91E-06
4-Chloro-3-methylphenol	59-50-7	3.10	3.16E-05	2.53E-05	9.25E-05	3.76E-07	0.00E+00	3.09E-07
Aromatic Nonhalogenated Hydrocarbons								
2-Nitrotoluene	88-72-2	2.30	5.01E-06	4.01E-06	1.47E-05	5.95E-08	0.00E+00	4.90E-08
4-Nitrobiphenyl	92-93-3	3.77	1.48E-04	1.18E-04	4.33E-04	1.76E-06	0.00E+00	1.45E-06
Benzaldehyde	100-52-7	1.48	7.54E-07	6.03E-07	2.20E-06	8.95E-09	0.00E+00	7.37E-09
Benzene	71-43-2	2.14	3.44E-06	2.75E-06	1.01E-05	4.09E-08	0.00E+00	3.36E-08
Benzyl alcohol	100-51-6	1.10	3.16E-07	2.53E-07	9.26E-07	3.76E-09	0.00E+00	3.09E-09
Ethyl benzene	100-41-4	3.12	3.34E-05	2.67E-05	9.78E-05	3.97E-07	0.00E+00	3.27E-07
m-Xylene	108-38-3	3.20	3.99E-05	3.20E-05	1.17E-04	4.74E-07	0.00E+00	3.90E-07
o-Xylene	95-47-6	3.13	3.39E-05	2.71E-05	9.92E-05	4.03E-07	0.00E+00	3.32E-07
p-Xylene	106-42-3	3.17	3.72E-05	2.97E-05	1.09E-04	4.42E-07	0.00E+00	3.63E-07
Styrene	100-42-5	2.93	2.13E-05	1.71E-05	6.24E-05	2.53E-07	0.00E+00	2.08E-07
Toluene	108-88-3	2.67	1.17E-05	9.34E-06	3.42E-05	1.39E-07	0.00E+00	1.14E-07
Non-aromatic Nonhalogenated Hydrocarbons								
1,2-Epoxybutane	106-88-7	0.86	1.82E-07	1.46E-07	5.32E-07	2.16E-09	0.00E+00	1.78E-09
1,3-Butadiene	106-99-0	1.99	2.45E-06	1.96E-06	7.18E-06	2.92E-08	0.00E+00	2.40E-08
1,4-Dioxane	123-91-1	-0.27	1.36E-08	1.09E-08	3.97E-08	1.61E-10	0.00E+00	1.33E-10
1-Methylpropyl alcohol	78-92-2	0.61	1.02E-07	8.19E-08	2.99E-07	1.22E-09	0.00E+00	1.00E-09
1-Nitropropane	108-03-2	0.87	1.86E-07	1.49E-07	5.45E-07	2.21E-09	0.00E+00	1.82E-09
2,2,4-Trimethylpentane	540-84-1	5.02	2.63E-03	2.10E-03	7.70E-03	3.12E-05	0.00E+00	2.57E-05
2-Butanone	78-93-3	0.28	4.80E-08	3.84E-08	1.40E-07	5.70E-10	0.00E+00	4.69E-10
2-Butenaldehyde (2-Butenal)	4170-30-3	0.55	8.91E-08	7.13E-08	2.61E-07	1.06E-09	0.00E+00	8.71E-10
2-Ethoxyethanol	110-80-5	-0.10	2.00E-08	1.60E-08	5.84E-08	2.37E-10	0.00E+00	1.95E-10

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Organic Compounds									
Aromatic Halogenated Hydrocarbons									
2,3,4,6-Tetrachlorophenol	58-90-2	4.93E-04	6.63E-06	2.42E-05	6.57E-05	2.82E-06	4.32E-05	5.42E-05	4.69E-05
4-Chloro-3-methylphenol	59-50-7	3.10E-05	4.17E-07	1.52E-06	4.14E-06	1.77E-07	2.72E-06	3.42E-06	2.96E-06
Aromatic Nonhalogenated Hydrocarbons									
2-Nitrotoluene	88-72-2	4.92E-06	6.62E-08	2.41E-07	6.56E-07	2.81E-08	4.31E-07	5.41E-07	4.69E-07
4-Nitrobiphenyl	92-93-3	1.45E-04	1.95E-06	7.12E-06	1.94E-05	8.30E-07	1.27E-05	1.60E-05	1.38E-05
Benzaldehyde	100-52-7	7.40E-07	9.95E-09	3.63E-08	9.87E-08	4.23E-09	6.48E-08	8.14E-08	7.05E-08
Benzene	71-43-2	3.38E-06	4.54E-08	1.65E-07	4.50E-07	1.93E-08	2.96E-07	3.72E-07	3.22E-07
Benzyl alcohol	100-51-6	3.11E-07	4.18E-09	1.52E-08	4.14E-08	1.78E-09	2.72E-08	3.42E-08	2.96E-08
Ethyl benzene	100-41-4	3.28E-05	4.41E-07	1.61E-06	4.37E-06	1.87E-07	2.87E-06	3.61E-06	3.12E-06
m-Xylene	108-38-3	3.92E-05	5.27E-07	1.92E-06	5.23E-06	2.24E-07	3.44E-06	4.31E-06	3.73E-06
o-Xylene	95-47-6	3.33E-05	4.48E-07	1.63E-06	4.44E-06	1.90E-07	2.92E-06	3.66E-06	3.17E-06
p-Xylene	106-42-3	3.65E-05	4.91E-07	1.79E-06	4.87E-06	2.09E-07	3.20E-06	4.01E-06	3.48E-06
Styrene	100-42-5	2.09E-05	2.82E-07	1.03E-06	2.79E-06	1.20E-07	1.83E-06	2.30E-06	1.99E-06
Toluene	108-88-3	1.15E-05	1.54E-07	5.62E-07	1.53E-06	6.55E-08	1.00E-06	1.26E-06	1.09E-06
Non-aromatic Nonhalogenated Hydrocarbons									
1,2-Epoxybutane	106-88-7	1.79E-07	2.40E-09	8.75E-09	2.38E-08	1.02E-09	1.57E-08	1.97E-08	1.70E-08
1,3-Butadiene	106-99-0	2.41E-06	3.24E-08	1.18E-07	3.21E-07	1.38E-08	2.11E-07	2.65E-07	2.30E-07
1,4-Dioxane	123-91-1	1.33E-08	1.79E-10	6.53E-10	1.78E-09	7.61E-11	1.17E-09	1.46E-09	1.27E-09
1-Methylpropyl alcohol	78-92-2	1.00E-07	1.35E-09	4.92E-09	1.34E-08	5.74E-10	8.80E-09	1.11E-08	9.57E-09
1-Nitropropane	108-03-2	1.83E-07	2.46E-09	8.96E-09	2.44E-08	1.04E-09	1.60E-08	2.01E-08	1.74E-08
2,2,4-Trimethylpentane	540-84-1	2.58E-03	3.47E-05	1.27E-04	3.44E-04	1.48E-05	2.26E-04	2.84E-04	2.46E-04
2-Butanone	78-93-3	4.71E-08	6.33E-10	2.31E-09	6.28E-09	2.69E-10	4.13E-09	5.18E-09	4.49E-09
2-Butenaldehyde (2-Butenal)	4170-30-3	8.75E-08	1.18E-09	4.29E-09	1.17E-08	5.00E-10	7.67E-09	9.62E-09	8.33E-09
2-Ethoxyethanol	110-80-5	1.96E-08	2.63E-10	9.60E-10	2.61E-09	1.12E-10	1.72E-09	2.15E-09	1.87E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
2-Heptanone	110-43-0	1.98	2.40E-06	1.92E-06	7.02E-06	2.85E-08	0.00E+00	2.35E-08
2-Hexanone	591-78-6	1.38	6.03E-07	4.82E-07	1.76E-06	7.16E-09	0.00E+00	5.89E-09
2-Methoxyethanol	109-86-4	-0.77	4.27E-09	3.41E-09	1.25E-08	5.07E-11	0.00E+00	4.17E-11
2-Methyl-2-propanol	75-65-0	0.35	5.62E-08	4.50E-08	1.65E-07	6.68E-10	0.00E+00	5.50E-10
2-Methyl-2-propenenitrile	126-98-7	0.54	8.72E-08	6.97E-08	2.55E-07	1.04E-09	0.00E+00	8.52E-10
2-Methylaziridine	75-55-8	-0.60	6.31E-09	5.05E-09	1.85E-08	7.50E-11	0.00E+00	6.17E-11
2-Methylpropyl alcohol	78-83-1	0.76	1.45E-07	1.16E-07	4.23E-07	1.72E-09	0.00E+00	1.41E-09
2-Pentanone	107-87-9	0.91	2.04E-07	1.63E-07	5.97E-07	2.43E-09	0.00E+00	2.00E-09
2-Propanone (Acetone)	67-64-1	-0.22	1.51E-08	1.21E-08	4.42E-08	1.79E-10	0.00E+00	1.48E-10
2-Propene-1-ol	107-18-6	0.17	3.72E-08	2.97E-08	1.09E-07	4.41E-10	0.00E+00	3.63E-10
2-Propyl alcohol	67-63-0	0.05	2.82E-08	2.25E-08	8.25E-08	3.35E-10	0.00E+00	2.76E-10
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	0.99	2.45E-07	1.96E-07	7.18E-07	2.92E-09	0.00E+00	2.40E-09
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	1.19	3.89E-07	3.11E-07	1.14E-06	4.62E-09	0.00E+00	3.81E-09
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.72	1.32E-06	1.05E-06	3.86E-06	1.57E-08	0.00E+00	1.29E-08
Acetaldehyde	75-07-0	-0.22	1.51E-08	1.21E-08	4.42E-08	1.80E-10	0.00E+00	1.48E-10
Acetamide	60-35-5	-1.26	1.38E-09	1.10E-09	4.04E-09	1.64E-11	0.00E+00	1.35E-11
Acetic acid	64-19-7	-0.17	1.70E-08	1.36E-08	4.97E-08	2.02E-10	0.00E+00	1.66E-10
Acetic acid ethyl ester	141-78-6	0.73	1.35E-07	1.08E-07	3.95E-07	1.60E-09	0.00E+00	1.32E-09
Acetic acid n-butyl ester	123-86-4	1.73	1.35E-06	1.08E-06	3.95E-06	1.60E-08	0.00E+00	1.32E-08
Acetonitrile	75-05-8	-0.34	1.15E-08	9.18E-09	3.36E-08	1.36E-10	0.00E+00	1.12E-10
Acrolein	107-02-8	-0.01	2.46E-08	1.97E-08	7.20E-08	2.92E-10	0.00E+00	2.41E-10

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
2-Heptanone	110-43-0	2.36E-06	3.17E-08	1.15E-07	3.14E-07	1.35E-08	2.06E-07	2.59E-07	2.24E-07
2-Hexanone	591-78-6	5.92E-07	7.95E-09	2.90E-08	7.89E-08	3.38E-09	5.18E-08	6.51E-08	5.63E-08
2-Methoxyethanol	109-86-4	4.19E-09	5.63E-11	2.05E-10	5.59E-10	2.39E-11	3.67E-10	4.61E-10	3.99E-10
2-Methyl-2-propanol	75-65-0	5.52E-08	7.42E-10	2.71E-09	7.36E-09	3.15E-10	4.84E-09	6.07E-09	5.26E-09
2-Methyl-2-propenenitrile	126-98-7	8.56E-08	1.15E-09	4.19E-09	1.14E-08	4.89E-10	7.50E-09	9.41E-09	8.15E-09
2-Methylaziridine	75-55-8	6.19E-09	8.33E-11	3.04E-10	8.26E-10	3.54E-11	5.43E-10	6.81E-10	5.90E-10
2-Methylpropyl alcohol	78-83-1	1.42E-07	1.91E-09	6.95E-09	1.89E-08	8.11E-10	1.24E-08	1.56E-08	1.35E-08
2-Pentanone	107-87-9	2.00E-07	2.70E-09	9.82E-09	2.67E-08	1.15E-09	1.76E-08	2.21E-08	1.91E-08
2-Propanone (Acetone)	67-64-1	1.48E-08	1.99E-10	7.26E-10	1.98E-09	8.47E-11	1.30E-09	1.63E-09	1.41E-09
2-Propene-1-ol	107-18-6	3.65E-08	4.90E-10	1.79E-09	4.87E-09	2.08E-10	3.20E-09	4.01E-09	3.47E-09
2-Propyl alcohol	67-63-0	2.77E-08	3.72E-10	1.36E-09	3.69E-09	1.58E-10	2.42E-09	3.04E-09	2.64E-09
3-Heptanone	106-35-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-1-butanol	123-51-3	No data	No data	No data	No data	No data	No data	No data	No data
3-Methyl-2-butanone	563-80-4	No data	No data	No data	No data	No data	No data	No data	No data
3-Pentanone	96-22-0	2.41E-07	3.24E-09	1.18E-08	3.21E-08	1.38E-09	2.11E-08	2.65E-08	2.30E-08
4-Heptanone	123-19-3	No data	No data	No data	No data	No data	No data	No data	No data
4-Methyl-2-pentanone	108-10-1	3.82E-07	5.14E-09	1.87E-08	5.10E-08	2.18E-09	3.35E-08	4.20E-08	3.64E-08
4-Methyl-3-penten-2-one	141-79-7	No data	No data	No data	No data	No data	No data	No data	No data
5-Methyl-2-hexanone	110-12-3	1.29E-06	1.74E-08	6.34E-08	1.73E-07	7.40E-09	1.13E-07	1.42E-07	1.23E-07
Acetaldehyde	75-07-0	1.48E-08	2.00E-10	7.27E-10	1.98E-09	8.48E-11	1.30E-09	1.63E-09	1.41E-09
Acetamide	60-35-5	1.36E-09	1.82E-11	6.64E-11	1.81E-10	7.74E-12	1.19E-10	1.49E-10	1.29E-10
Acetic acid	64-19-7	1.67E-08	2.24E-10	8.17E-10	2.22E-09	9.53E-11	1.46E-09	1.83E-09	1.59E-09
Acetic acid ethyl ester	141-78-6	1.32E-07	1.78E-09	6.49E-09	1.77E-08	7.57E-10	1.16E-08	1.46E-08	1.26E-08
Acetic acid n-butyl ester	123-86-4	1.32E-06	1.78E-08	6.49E-08	1.77E-07	7.57E-09	1.16E-07	1.46E-07	1.26E-07
Acetonitrile	75-05-8	1.13E-08	1.52E-10	5.52E-10	1.50E-09	6.44E-11	9.88E-10	1.24E-09	1.07E-09
Acrolein	107-02-8	2.42E-08	3.25E-10	1.18E-09	3.22E-09	1.38E-10	2.12E-09	2.66E-09	2.30E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Acrylonitrile	107-13-1	0.25	4.47E-08	3.58E-08	1.31E-07	5.31E-10	0.00E+00	4.37E-10
Bis(isopropyl)ether	108-20-3	1.56	9.12E-07	7.30E-07	2.67E-06	1.08E-08	0.00E+00	8.92E-09
Butane	106-97-8	2.89	1.95E-05	1.56E-05	5.71E-05	2.32E-07	0.00E+00	1.91E-07
Carbon disulfide	75-15-0	2.00	2.51E-06	2.01E-06	7.35E-06	2.98E-08	0.00E+00	2.46E-08
Cyanogen	460-19-5	0.07	2.95E-08	2.36E-08	8.64E-08	3.51E-10	0.00E+00	2.89E-10
Cyclohexane	110-82-7	3.44	6.92E-05	5.53E-05	2.02E-04	8.22E-07	0.00E+00	6.76E-07
Cyclohexanone	108-94-1	0.81	1.62E-07	1.30E-07	4.75E-07	1.93E-09	0.00E+00	1.59E-09
Cyclohexene	110-83-8	2.86	1.82E-05	1.46E-05	5.32E-05	2.16E-07	0.00E+00	1.78E-07
Cyclopentane	287-92-3	3.00	2.51E-05	2.01E-05	7.35E-05	2.98E-07	0.00E+00	2.46E-07
Ethyl alcohol	64-17-5	-0.31	1.23E-08	9.84E-09	3.60E-08	1.46E-10	0.00E+00	1.20E-10
Ethyl ether	60-29-7	0.89	1.95E-07	1.56E-07	5.71E-07	2.32E-09	0.00E+00	1.91E-09
Ethyl methacrylate	97-63-2	1.59	9.77E-07	7.82E-07	2.86E-06	1.16E-08	0.00E+00	9.55E-09
Formaldehyde	50-00-0	0.34	5.56E-08	4.45E-08	1.63E-07	6.60E-10	0.00E+00	5.44E-10
Formamide	75-12-7	-1.51	7.76E-10	6.21E-10	2.27E-09	9.22E-12	0.00E+00	7.59E-12
Formic acid	64-18-6	-0.54	7.28E-09	5.83E-09	2.13E-08	8.65E-11	0.00E+00	7.12E-11
Formic acid, methyl ester	107-31-3	-0.26	1.37E-08	1.09E-08	4.00E-08	1.62E-10	0.00E+00	1.34E-10
Glycidylaldehyde	765-34-4	-0.12	1.91E-08	1.52E-08	5.58E-08	2.26E-10	0.00E+00	1.86E-10
Methyl acetate	79-20-9	0.46	7.24E-08	5.79E-08	2.12E-07	8.60E-10	0.00E+00	7.08E-10
Methyl alcohol	67-56-1	-0.71	4.90E-09	3.92E-09	1.43E-08	5.82E-11	0.00E+00	4.79E-11
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	0.79	1.55E-07	1.24E-07	4.53E-07	1.84E-09	0.00E+00	1.51E-09
Methyl tert-butyl ether	1634-04-4	0.94	2.19E-07	1.75E-07	6.40E-07	2.60E-09	0.00E+00	2.14E-09
Methylacetylene	74-99-7	0.94	2.19E-07	1.75E-07	6.40E-07	2.60E-09	0.00E+00	2.14E-09
Methylcyclohexane	108-87-2	4.10	3.16E-04	2.53E-04	9.25E-04	3.76E-06	0.00E+00	3.09E-06
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	0.88	1.91E-07	1.52E-07	5.58E-07	2.26E-09	0.00E+00	1.86E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Acrylonitrile	107-13-1	4.39E-08	5.90E-10	2.15E-09	5.85E-09	2.51E-10	3.85E-09	4.83E-09	4.18E-09
Bis(isopropyl)ether	108-20-3	8.95E-07	1.20E-08	4.39E-08	1.19E-07	5.12E-09	7.85E-08	9.85E-08	8.53E-08
Butane	106-97-8	1.91E-05	2.57E-07	9.38E-07	2.55E-06	1.09E-07	1.68E-06	2.11E-06	1.82E-06
Carbon disulfide	75-15-0	2.47E-06	3.32E-08	1.21E-07	3.29E-07	1.41E-08	2.16E-07	2.71E-07	2.35E-07
Cyanogen	460-19-5	2.90E-08	3.90E-10	1.42E-09	3.86E-09	1.66E-10	2.54E-09	3.19E-09	2.76E-09
Cyclohexane	110-82-7	6.79E-05	9.13E-07	3.33E-06	9.06E-06	3.88E-07	5.95E-06	7.47E-06	6.47E-06
Cyclohexanone	108-94-1	1.59E-07	2.14E-09	7.80E-09	2.12E-08	9.10E-10	1.40E-08	1.75E-08	1.52E-08
Cyclohexene	110-83-8	1.79E-05	2.40E-07	8.75E-07	2.38E-06	1.02E-07	1.57E-06	1.97E-06	1.70E-06
Cyclopentane	287-92-3	2.47E-05	3.32E-07	1.21E-06	3.29E-06	1.41E-07	2.16E-06	2.71E-06	2.35E-06
Ethyl alcohol	64-17-5	1.21E-08	1.62E-10	5.92E-10	1.61E-09	6.90E-11	1.06E-09	1.33E-09	1.15E-09
Ethyl ether	60-29-7	1.91E-07	2.57E-09	9.38E-09	2.55E-08	1.09E-09	1.68E-08	2.11E-08	1.82E-08
Ethyl methacrylate	97-63-2	9.59E-07	1.29E-08	4.70E-08	1.28E-07	5.48E-09	8.41E-08	1.06E-07	9.14E-08
Formaldehyde	50-00-0	5.46E-08	7.34E-10	2.67E-09	7.28E-09	3.12E-10	4.78E-09	6.00E-09	5.20E-09
Formamide	75-12-7	7.62E-10	1.02E-11	3.73E-11	1.02E-10	4.35E-12	6.68E-11	8.38E-11	7.26E-11
Formic acid	64-18-6	7.15E-09	9.62E-11	3.50E-10	9.54E-10	4.09E-11	6.27E-10	7.87E-10	6.81E-10
Formic acid, methyl ester	107-31-3	1.34E-08	1.81E-10	6.58E-10	1.79E-09	7.67E-11	1.18E-09	1.48E-09	1.28E-09
Glycidylaldehyde	765-34-4	1.87E-08	2.52E-10	9.17E-10	2.50E-09	1.07E-10	1.64E-09	2.06E-09	1.78E-09
Methyl acetate	79-20-9	7.11E-08	9.56E-10	3.48E-09	9.48E-09	4.06E-10	6.23E-09	7.82E-09	6.77E-09
Methyl alcohol	67-56-1	4.81E-09	6.47E-11	2.36E-10	6.41E-10	2.75E-11	4.21E-10	5.29E-10	4.58E-10
Methyl isocyanate	624-83-9	No data	No data	No data	No data	No data	No data	No data	No data
Methyl methacrylate	80-62-6	1.52E-07	2.04E-09	7.45E-09	2.03E-08	8.69E-10	1.33E-08	1.67E-08	1.45E-08
Methyl tert-butyl ether	1634-04-4	2.15E-07	2.89E-09	1.05E-08	2.86E-08	1.23E-09	1.88E-08	2.36E-08	2.05E-08
Methylacetylene	74-99-7	2.15E-07	2.89E-09	1.05E-08	2.86E-08	1.23E-09	1.88E-08	2.36E-08	2.05E-08
Methylcyclohexane	108-87-2	3.10E-04	4.17E-06	1.52E-05	4.14E-05	1.77E-06	2.72E-05	3.42E-05	2.96E-05
N,N-Dimethylacetamide	127-19-5	No data	No data	No data	No data	No data	No data	No data	No data
n-Butyl alcohol	71-36-3	1.87E-07	2.52E-09	9.17E-09	2.50E-08	1.07E-09	1.64E-08	2.06E-08	1.78E-08

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
n-Heptane	142-82-5	4.66	1.15E-03	9.19E-04	3.36E-03	1.36E-05	0.00E+00	1.12E-05
n-Hexane	110-54-3	4.11	3.24E-04	2.59E-04	9.47E-04	3.84E-06	0.00E+00	3.16E-06
Nitromethane	75-52-5	-0.35	1.12E-08	8.98E-09	3.28E-08	1.33E-10	0.00E+00	1.10E-10
n-Nonane	111-84-2	5.65	1.12E-02	8.98E-03	3.28E-02	1.33E-04	0.00E+00	1.10E-04
n-Octane	111-65-9	4.00	2.51E-04	2.01E-04	7.35E-04	2.98E-06	0.00E+00	2.46E-06
n-Pentane	109-66-0	3.21	4.07E-05	3.26E-05	1.19E-04	4.84E-07	0.00E+00	3.98E-07
n-Propionaldehyde	123-38-6	0.59	9.77E-08	7.82E-08	2.86E-07	1.16E-09	0.00E+00	9.55E-10
n-Propyl alcohol	71-23-8	0.25	4.47E-08	3.57E-08	1.31E-07	5.31E-10	0.00E+00	4.37E-10
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	-0.30	1.26E-08	1.01E-08	3.68E-08	1.49E-10	0.00E+00	1.23E-10
p-Cymene	99-87-6	4.10	3.16E-04	2.53E-04	9.25E-04	3.76E-06	0.00E+00	3.09E-06
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	-0.38	1.05E-08	8.38E-09	3.06E-08	1.24E-10	0.00E+00	1.02E-10
Propionic acid	79-09-4	0.33	5.37E-08	4.30E-08	1.57E-07	6.38E-10	0.00E+00	5.25E-10
Propionitrile	107-12-0	0.16	3.63E-08	2.90E-08	1.06E-07	4.31E-10	0.00E+00	3.55E-10
Propylene glycol monomethyl ether	107-98-2	-0.49	8.13E-09	6.50E-09	2.38E-08	9.66E-11	0.00E+00	7.95E-11
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	1.45	7.08E-07	5.66E-07	2.07E-06	8.41E-09	0.00E+00	6.92E-09
Trimethylamine	75-50-3	0.16	3.63E-08	2.90E-08	1.06E-07	4.31E-10	0.00E+00	3.55E-10
Vinyl acetate	108-05-4	0.70	1.26E-07	1.00E-07	3.67E-07	1.49E-09	0.00E+00	1.23E-09
Non-aromatic Halogenated Hydrocarbons								
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	3.41	6.46E-05	5.17E-05	1.89E-04	7.67E-07	0.00E+00	6.31E-07
1,1,1,2-Tetrachloroethane	630-20-6	2.63	1.07E-05	8.58E-06	3.14E-05	1.27E-07	0.00E+00	1.05E-07
1,1,1-Trichloroethane	71-55-6	2.42	6.63E-06	5.31E-06	1.94E-05	7.88E-08	0.00E+00	6.48E-08
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	3.73	1.35E-04	1.08E-04	3.95E-04	1.60E-06	0.00E+00	1.32E-06
1,1,2,2-Tetrachloroethane	79-34-5	4.64	1.11E-03	8.84E-04	3.23E-03	1.31E-05	0.00E+00	1.08E-05

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
n-Heptane	142-82-5	1.13E-03	1.52E-05	5.52E-05	1.50E-04	6.44E-06	9.88E-05	1.24E-04	1.07E-04
n-Hexane	110-54-3	3.18E-04	4.27E-06	1.56E-05	4.24E-05	1.82E-06	2.78E-05	3.49E-05	3.03E-05
Nitromethane	75-52-5	1.10E-08	1.48E-10	5.40E-10	1.47E-09	6.29E-11	9.65E-10	1.21E-09	1.05E-09
n-Nonane	111-84-2	1.10E-02	1.48E-04	5.40E-04	1.47E-03	6.29E-05	9.65E-04	1.21E-03	1.05E-03
n-Octane	111-65-9	2.47E-04	3.32E-06	1.21E-05	3.29E-05	1.41E-06	2.16E-05	2.71E-05	2.35E-05
n-Pentane	109-66-0	4.00E-05	5.38E-07	1.96E-06	5.33E-06	2.29E-07	3.51E-06	4.40E-06	3.81E-06
n-Propionaldehyde	123-38-6	9.59E-08	1.29E-09	4.70E-09	1.28E-08	5.48E-10	8.41E-09	1.06E-08	9.14E-09
n-Propyl alcohol	71-23-8	4.39E-08	5.90E-10	2.15E-09	5.85E-09	2.51E-10	3.84E-09	4.82E-09	4.18E-09
n-Valeraldehyde	110-62-3	No data	No data	No data	No data	No data	No data	No data	No data
Oxirane	75-21-8	1.24E-08	1.66E-10	6.05E-10	1.65E-09	7.06E-11	1.08E-09	1.36E-09	1.18E-09
p-Cymene	99-87-6	3.10E-04	4.17E-06	1.52E-05	4.14E-05	1.77E-06	2.72E-05	3.42E-05	2.96E-05
Phosgene	75-44-5	No data	No data	No data	No data	No data	No data	No data	No data
Propargyl alcohol	107-19-7	1.03E-08	1.38E-10	5.04E-10	1.37E-09	5.87E-11	9.01E-10	1.13E-09	9.79E-10
Propionic acid	79-09-4	5.27E-08	7.09E-10	2.58E-09	7.03E-09	3.01E-10	4.62E-09	5.80E-09	5.02E-09
Propionitrile	107-12-0	3.56E-08	4.79E-10	1.75E-09	4.75E-09	2.04E-10	3.12E-09	3.92E-09	3.39E-09
Propylene glycol monomethyl ether	107-98-2	7.98E-09	1.07E-10	3.91E-10	1.06E-09	4.56E-11	6.99E-10	8.78E-10	7.60E-10
p-tert-Butyltoluene	98-51-1	No data	No data	No data	No data	No data	No data	No data	No data
Triethylamine	121-44-8	6.95E-07	9.34E-09	3.41E-08	9.27E-08	3.97E-09	6.09E-08	7.65E-08	6.62E-08
Trimethylamine	75-50-3	3.56E-08	4.79E-10	1.75E-09	4.75E-09	2.04E-10	3.12E-09	3.92E-09	3.39E-09
Vinyl acetate	108-05-4	1.23E-07	1.66E-09	6.04E-09	1.64E-08	7.05E-10	1.08E-08	1.36E-08	1.17E-08
Non-aromatic Halogenated Hydrocarbons									
1,1,1,2-Tetrachloro-2,2-difluoroethane	76-11-9	6.34E-05	8.52E-07	3.11E-06	8.45E-06	3.62E-07	5.56E-06	6.97E-06	6.04E-06
1,1,1,2-Tetrachloroethane	630-20-6	1.05E-05	1.42E-07	5.16E-07	1.40E-06	6.02E-08	9.23E-07	1.16E-06	1.00E-06
1,1,1-Trichloroethane	71-55-6	6.51E-06	8.75E-08	3.19E-07	8.68E-07	3.72E-08	5.71E-07	7.16E-07	6.20E-07
1,1,2,2-Tetrachloro-1,2-difluoroethane	76-12-0	1.32E-04	1.78E-06	6.49E-06	1.77E-05	7.57E-07	1.16E-05	1.46E-05	1.26E-05
1,1,2,2-Tetrachloroethane	79-34-5	1.09E-03	1.46E-05	5.32E-05	1.45E-04	6.20E-06	9.51E-05	1.19E-04	1.03E-04

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,1,2,2-Tetrachloroethene	127-18-4	2.55	8.82E-06	7.05E-06	2.58E-05	1.05E-07	0.00E+00	8.62E-08
1,1,2-Trichloroethane	79-00-5	2.10	3.14E-06	2.51E-06	9.19E-06	3.73E-08	0.00E+00	3.07E-08
1,1,2-Trichloroethylene	79-01-6	2.43	6.81E-06	5.45E-06	1.99E-05	8.09E-08	0.00E+00	6.65E-08
1,1-Dichloroethane	75-34-3	1.79	1.56E-06	1.25E-06	4.56E-06	1.85E-08	0.00E+00	1.52E-08
1,1-Dichloroethene	75-35-4	2.12	3.32E-06	2.65E-06	9.70E-06	3.94E-08	0.00E+00	3.24E-08
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.16	3.63E-05	2.90E-05	1.06E-04	4.31E-07	0.00E+00	3.55E-07
1,2,3-Trichloropropane	96-18-4	2.25	4.47E-06	3.58E-06	1.31E-05	5.31E-08	0.00E+00	4.37E-08
1,2-Dibromo-3-chloropropane	96-12-8	2.34	5.50E-06	4.40E-06	1.61E-05	6.53E-08	0.00E+00	5.38E-08
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	2.82	1.66E-05	1.33E-05	4.86E-05	1.97E-07	0.00E+00	1.62E-07
1,2-Dichloroethane	107-06-2	1.46	7.28E-07	5.83E-07	2.13E-06	8.65E-09	0.00E+00	7.12E-09
1,2-Dichloroethylene	540-59-0	2.09	3.09E-06	2.47E-06	9.04E-06	3.67E-08	0.00E+00	3.02E-08
1,2-Dichloropropane	78-87-5	2.25	4.47E-06	3.58E-06	1.31E-05	5.31E-08	0.00E+00	4.37E-08
1,3-Dichloropropene	542-75-6	1.75	1.41E-06	1.13E-06	4.12E-06	1.67E-08	0.00E+00	1.38E-08
1,4-Dichloro-2-butene	764-41-0	0.87	1.87E-07	1.50E-07	5.48E-07	2.23E-09	0.00E+00	1.83E-09
1-Chloroethene	75-01-4	1.15	3.52E-07	2.81E-07	1.03E-06	4.18E-09	0.00E+00	3.44E-09
2,2-Dichloropropionic acid	75-99-0	1.68	1.20E-06	9.62E-07	3.52E-06	1.43E-08	0.00E+00	1.18E-08
2-Chloropropane	75-29-6	1.90	2.00E-06	1.60E-06	5.84E-06	2.37E-08	0.00E+00	1.95E-08
3-Chloropropene (Allyl chloride)	107-05-1	1.93	2.14E-06	1.71E-06	6.26E-06	2.54E-08	0.00E+00	2.09E-08
Bromochloromethane	74-97-5	1.41	6.46E-07	5.17E-07	1.89E-06	7.67E-09	0.00E+00	6.31E-09
Bromodichloromethane	75-27-4	2.03	2.66E-06	2.13E-06	7.79E-06	3.16E-08	0.00E+00	2.60E-08
Bromoethene	593-60-2	1.07	2.93E-07	2.34E-07	8.57E-07	3.48E-09	0.00E+00	2.86E-09
Bromoform	75-25-2	2.35	5.63E-06	4.50E-06	1.65E-05	6.68E-08	0.00E+00	5.50E-08
Bromomethane	74-83-9	1.11	3.27E-07	2.61E-07	9.55E-07	3.88E-09	0.00E+00	3.19E-09
Carbon tetrachloride	56-23-5	2.72	1.31E-05	1.05E-05	3.83E-05	1.55E-07	0.00E+00	1.28E-07
Chlorodibromomethane	124-48-1	2.18	3.77E-06	3.01E-06	1.10E-05	4.48E-08	0.00E+00	3.68E-08
Chlorodifluoromethane	75-45-6	1.08	3.01E-07	2.41E-07	8.82E-07	3.58E-09	0.00E+00	2.95E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,1,2,2-Tetrachloroethene	127-18-4	8.66E-06	1.16E-07	4.24E-07	1.15E-06	4.95E-08	7.59E-07	9.52E-07	8.24E-07
1,1,2-Trichloroethane	79-00-5	3.08E-06	4.14E-08	1.51E-07	4.11E-07	1.76E-08	2.70E-07	3.39E-07	2.94E-07
1,1,2-Trichloroethylene	79-01-6	6.68E-06	8.99E-08	3.27E-07	8.91E-07	3.82E-08	5.86E-07	7.35E-07	6.36E-07
1,1-Dichloroethane	75-34-3	1.53E-06	2.06E-08	7.49E-08	2.04E-07	8.74E-09	1.34E-07	1.68E-07	1.46E-07
1,1-Dichloroethene	75-35-4	3.26E-06	4.38E-08	1.60E-07	4.34E-07	1.86E-08	2.85E-07	3.58E-07	3.10E-07
1,2,2-Trichloro-1,1,2-trifluoroethane	76-13-1	3.56E-05	4.79E-07	1.75E-06	4.75E-06	2.04E-07	3.12E-06	3.92E-06	3.39E-06
1,2,3-Trichloropropane	96-18-4	4.39E-06	5.90E-08	2.15E-07	5.85E-07	2.51E-08	3.85E-07	4.83E-07	4.18E-07
1,2-Dibromo-3-chloropropane	96-12-8	5.40E-06	7.26E-08	2.65E-07	7.20E-07	3.09E-08	4.73E-07	5.94E-07	5.14E-07
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	1.63E-05	2.19E-07	7.98E-07	2.17E-06	9.31E-08	1.43E-06	1.79E-06	1.55E-06
1,2-Dichloroethane	107-06-2	7.15E-07	9.62E-09	3.50E-08	9.54E-08	4.09E-09	6.27E-08	7.87E-08	6.81E-08
1,2-Dichloroethylene	540-59-0	3.03E-06	4.08E-08	1.49E-07	4.05E-07	1.73E-08	2.66E-07	3.34E-07	2.89E-07
1,2-Dichloropropane	78-87-5	4.39E-06	5.90E-08	2.15E-07	5.85E-07	2.51E-08	3.85E-07	4.83E-07	4.18E-07
1,3-Dichloropropene	542-75-6	1.38E-06	1.86E-08	6.77E-08	1.84E-07	7.89E-09	1.21E-07	1.52E-07	1.32E-07
1,4-Dichloro-2-butene	764-41-0	1.84E-07	2.47E-09	9.01E-09	2.45E-08	1.05E-09	1.61E-08	2.02E-08	1.75E-08
1-Chloroethene	75-01-4	3.45E-07	4.64E-09	1.69E-08	4.60E-08	1.97E-09	3.03E-08	3.80E-08	3.29E-08
2,2-Dichloropropionic acid	75-99-0	1.18E-06	1.59E-08	5.78E-08	1.57E-07	6.74E-09	1.03E-07	1.30E-07	1.12E-07
2-Chloropropane	75-29-6	1.96E-06	2.63E-08	9.60E-08	2.61E-07	1.12E-08	1.72E-07	2.15E-07	1.87E-07
3-Chloropropene (Allyl chloride)	107-05-1	2.10E-06	2.82E-08	1.03E-07	2.80E-07	1.20E-08	1.84E-07	2.31E-07	2.00E-07
Bromochloromethane	74-97-5	6.34E-07	8.52E-09	3.11E-08	8.45E-08	3.62E-09	5.56E-08	6.97E-08	6.04E-08
Bromodichloromethane	75-27-4	2.61E-06	3.51E-08	1.28E-07	3.49E-07	1.49E-08	2.29E-07	2.88E-07	2.49E-07
Bromoethene	593-60-2	2.87E-07	3.86E-09	1.41E-08	3.83E-08	1.64E-09	2.52E-08	3.16E-08	2.74E-08
Bromoform	75-25-2	5.52E-06	7.43E-08	2.71E-07	7.37E-07	3.16E-08	4.84E-07	6.08E-07	5.26E-07
Bromomethane	74-83-9	3.21E-07	4.31E-09	1.57E-08	4.28E-08	1.83E-09	2.81E-08	3.53E-08	3.05E-08
Carbon tetrachloride	56-23-5	1.28E-05	1.73E-07	6.30E-07	1.71E-06	7.34E-08	1.13E-06	1.41E-06	1.22E-06
Chlorodibromomethane	124-48-1	3.70E-06	4.97E-08	1.81E-07	4.93E-07	2.11E-08	3.24E-07	4.07E-07	3.52E-07
Chlorodifluoromethane	75-45-6	2.96E-07	3.98E-09	1.45E-08	3.95E-08	1.69E-09	2.59E-08	3.26E-08	2.82E-08

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Chloroethane	75-00-3	3.10	3.16E-05	2.53E-05	9.26E-05	3.76E-07	0.00E+00	3.09E-07
Chloroform	67-66-3	1.95	2.24E-06	1.79E-06	6.55E-06	2.66E-08	0.00E+00	2.19E-08
Chloromethane	74-87-3	0.90	2.01E-07	1.61E-07	5.88E-07	2.39E-09	0.00E+00	1.96E-09
Chloropentafluoroethane	76-15-3	2.10	3.16E-06	2.53E-06	9.25E-06	3.76E-08	0.00E+00	3.09E-08
cis-1,2-Dichloroethene	156-59-2	1.98	2.41E-06	1.93E-06	7.06E-06	2.86E-08	0.00E+00	2.36E-08
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	-0.29	1.29E-08	1.03E-08	3.77E-08	1.53E-10	0.00E+00	1.26E-10
Cyanogen chloride	506-77-4	-0.38	1.05E-08	8.38E-09	3.06E-08	1.24E-10	0.00E+00	1.02E-10
Dichlorodifluoromethane	75-71-8	2.16	3.62E-06	2.89E-06	1.06E-05	4.30E-08	0.00E+00	3.54E-08
Dichlorofluoromethane	75-43-4	1.55	8.91E-07	7.13E-07	2.61E-06	1.06E-08	0.00E+00	8.71E-09
Dichloromethane	75-09-2	1.26	4.52E-07	3.62E-07	1.32E-06	5.37E-09	0.00E+00	4.42E-09
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.69	1.23E-06	9.84E-07	3.60E-06	1.46E-08	0.00E+00	1.20E-08
Methylene bromide	74-95-3	1.62	1.05E-06	8.38E-07	3.06E-06	1.24E-08	0.00E+00	1.02E-08
Pentachloroethane	76-01-7	3.05	2.82E-05	2.25E-05	8.25E-05	3.35E-07	0.00E+00	2.76E-07
trans-1,2-Dichloroethylene	156-60-5	1.98	2.41E-06	1.93E-06	7.06E-06	2.86E-08	0.00E+00	2.36E-08
trans-1,3-Dichloropropene	10061-02-6	2.06	2.88E-06	2.31E-06	8.44E-06	3.43E-08	0.00E+00	2.82E-08
Trichloroacetic acid	76-03-9	1.33	5.37E-07	4.30E-07	1.57E-06	6.38E-09	0.00E+00	5.25E-09
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	2.53	8.54E-06	6.83E-06	2.50E-05	1.01E-07	0.00E+00	8.35E-08
Trifluorobromomethane	75-63-8	1.86	1.82E-06	1.46E-06	5.32E-06	2.16E-08	0.00E+00	1.78E-08
Dioxin and Furan Compounds (PCDDs/PCDFs)								
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	8.20	2.77E-03	2.22E-03	8.11E-03	3.29E-05	0.00E+00	2.71E-05
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	7.92	5.98E-04	4.78E-04	1.75E-03	7.10E-06	0.00E+00	5.84E-06
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	7.92	2.12E-02	1.69E-02	6.19E-02	2.51E-04	0.00E+00	2.07E-04

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Chloroethane	75-00-3	3.11E-05	4.18E-07	1.52E-06	4.14E-06	1.78E-07	2.72E-06	3.42E-06	2.96E-06
Chloroform	67-66-3	2.20E-06	2.96E-08	1.08E-07	2.93E-07	1.26E-08	1.93E-07	2.42E-07	2.09E-07
Chloromethane	74-87-3	1.97E-07	2.65E-09	9.67E-09	2.63E-08	1.13E-09	1.73E-08	2.17E-08	1.88E-08
Chloropentafluoroethane	76-15-3	3.10E-06	4.17E-08	1.52E-07	4.14E-07	1.77E-08	2.72E-07	3.42E-07	2.96E-07
cis-1,2-Dichloroethene	156-59-2	2.37E-06	3.18E-08	1.16E-07	3.16E-07	1.35E-08	2.07E-07	2.60E-07	2.25E-07
cis-1,3-Dichloropropene	10061-01-5	No data	No data	No data	No data	No data	No data	No data	No data
Cyanogen bromide	506-68-3	1.26E-08	1.70E-10	6.20E-10	1.69E-09	7.23E-11	1.11E-09	1.39E-09	1.20E-09
Cyanogen chloride	506-77-4	1.03E-08	1.38E-10	5.04E-10	1.37E-09	5.87E-11	9.01E-10	1.13E-09	9.79E-10
Dichlorodifluoromethane	75-71-8	3.55E-06	4.77E-08	1.74E-07	4.74E-07	2.03E-08	3.11E-07	3.91E-07	3.38E-07
Dichlorofluoromethane	75-43-4	8.75E-07	1.18E-08	4.29E-08	1.17E-07	5.00E-09	7.67E-08	9.63E-08	8.33E-08
Dichloromethane	75-09-2	4.44E-07	5.97E-09	2.18E-08	5.92E-08	2.54E-09	3.89E-08	4.88E-08	4.23E-08
Difluorodibromomethane	75-61-6	No data	No data	No data	No data	No data	No data	No data	No data
Hexafluoroacetone	684-16-2	No data	No data	No data	No data	No data	No data	No data	No data
Iodomethane	74-88-4	1.21E-06	1.62E-08	5.92E-08	1.61E-07	6.90E-09	1.06E-07	1.33E-07	1.15E-07
Methylene bromide	74-95-3	1.03E-06	1.38E-08	5.04E-08	1.37E-07	5.88E-09	9.01E-08	1.13E-07	9.79E-08
Pentachloroethane	76-01-7	2.77E-05	3.72E-07	1.36E-06	3.69E-06	1.58E-07	2.42E-06	3.04E-06	2.64E-06
trans-1,2-Dichloroethylene	156-60-5	2.37E-06	3.18E-08	1.16E-07	3.16E-07	1.35E-08	2.07E-07	2.60E-07	2.25E-07
trans-1,3-Dichloropropene	10061-02-6	2.83E-06	3.81E-08	1.39E-07	3.78E-07	1.62E-08	2.48E-07	3.11E-07	2.70E-07
Trichloroacetic acid	76-03-9	5.27E-07	7.09E-09	2.58E-08	7.03E-08	3.01E-09	4.62E-08	5.80E-08	5.02E-08
Trichlorofluoroethane	27154-33-2	No data	No data	No data	No data	No data	No data	No data	No data
Trichlorofluoromethane	75-69-4	8.38E-06	1.13E-07	4.11E-07	1.12E-06	4.79E-08	7.35E-07	9.22E-07	7.99E-07
Trifluorobromomethane	75-63-8	1.79E-06	2.40E-08	8.75E-08	2.38E-07	1.02E-08	1.57E-07	1.97E-07	1.70E-07
Dioxin and Furan Compounds (PCDDs/PCDFs)									
1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	35822-46-9	2.72E-03	3.66E-05	1.33E-04	3.63E-04	1.56E-05	2.39E-04	2.99E-04	2.59E-04
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	5.87E-04	7.89E-06	2.87E-05	7.83E-05	3.35E-06	5.14E-05	6.45E-05	5.59E-05
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	2.08E-02	2.79E-04	1.02E-03	2.77E-03	1.19E-04	1.82E-03	2.29E-03	1.98E-03

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	7.79	1.68E-02	1.35E-02	4.92E-02	2.00E-04	0.00E+00	1.64E-04
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	7.25	4.13E-03	3.30E-03	1.21E-02	4.90E-05	0.00E+00	4.04E-05
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	7.25	6.52E-03	5.22E-03	1.91E-02	7.74E-05	0.00E+00	6.37E-05
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	7.25	1.03E-02	8.26E-03	3.02E-02	1.23E-04	0.00E+00	1.01E-04
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.25	7.61E-03	6.08E-03	2.23E-02	9.03E-05	0.00E+00	7.43E-05
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	7.25	3.42E-02	2.74E-02	1.00E-01	4.07E-04	0.00E+00	3.35E-04
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	6.64	5.00E-02	4.00E-02	1.46E-01	5.93E-04	0.00E+00	4.88E-04
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	6.79	1.20E-02	9.56E-03	3.50E-02	1.42E-04	0.00E+00	1.17E-04
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	7.25	3.64E-02	2.91E-02	1.07E-01	4.32E-04	0.00E+00	3.56E-04
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	6.92	8.70E-02	6.96E-02	2.54E-01	1.03E-03	0.00E+00	8.50E-04
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	6.64	5.43E-02	4.35E-02	1.59E-01	6.45E-04	0.00E+00	5.31E-04
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	6.53	4.34E-02	3.47E-02	1.27E-01	5.16E-04	0.00E+00	4.24E-04
Dibenzofuran	132-64-9	4.33	5.37E-04	4.30E-04	1.57E-03	6.38E-06	0.00E+00	5.25E-06
Octachlorodibenzo(p)dioxin	3268-87-9	7.59	6.52E-04	5.22E-04	1.91E-03	7.74E-06	0.00E+00	6.37E-06
Octachlorodibenzofuran	39001-02-0	8.78	8.70E-04	6.96E-04	2.54E-03	1.03E-05	0.00E+00	8.50E-06
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)								
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	7.08	3.02E-01	2.42E-01	8.84E-01	3.59E-03	0.00E+00	2.95E-03
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	7.12	3.31E-01	2.65E-01	9.69E-01	3.93E-03	0.00E+00	3.24E-03
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	39227-28-6	1.65E-02	2.22E-04	8.09E-04	2.20E-03	9.44E-05	1.45E-03	1.82E-03	1.57E-03
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	4.05E-03	5.45E-05	1.99E-04	5.41E-04	2.32E-05	3.55E-04	4.46E-04	3.86E-04
1,2,3,6,7,8-Hexachlorodibenzo(p)dioxin	57653-85-7	6.40E-03	8.61E-05	3.14E-04	8.54E-04	3.66E-05	5.61E-04	7.04E-04	6.10E-04
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	1.01E-02	1.36E-04	4.96E-04	1.35E-03	5.79E-05	8.88E-04	1.11E-03	9.65E-04
1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	19408-74-3	7.47E-03	1.00E-04	3.66E-04	9.96E-04	4.27E-05	6.54E-04	8.21E-04	7.11E-04
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	3.36E-02	4.52E-04	1.65E-03	4.48E-03	1.92E-04	2.95E-03	3.70E-03	3.20E-03
1,2,3,7,8-Pentachlorodibenzo(p)dioxin	40321-76-4	4.90E-02	6.59E-04	2.40E-03	6.54E-03	2.80E-04	4.30E-03	5.39E-03	4.67E-03
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	1.17E-02	1.58E-04	5.75E-04	1.56E-03	6.70E-05	1.03E-03	1.29E-03	1.12E-03
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	3.57E-02	4.81E-04	1.75E-03	4.77E-03	2.04E-04	3.13E-03	3.93E-03	3.40E-03
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	8.54E-02	1.15E-03	4.18E-03	1.14E-02	4.88E-04	7.48E-03	9.39E-03	8.13E-03
2,3,7,8-Tetrachlorodibenzo(p)dioxin	1746-01-6	5.33E-02	7.17E-04	2.61E-03	7.11E-03	3.05E-04	4.67E-03	5.87E-03	5.08E-03
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	4.26E-02	5.73E-04	2.09E-03	5.68E-03	2.43E-04	3.73E-03	4.69E-03	4.06E-03
Dibenzofuran	132-64-9	5.27E-04	7.09E-06	2.58E-05	7.03E-05	3.01E-06	4.62E-05	5.80E-05	5.02E-05
Octachlorodibenzo(p)dioxin	3268-87-9	6.40E-04	8.61E-06	3.14E-05	8.54E-05	3.66E-06	5.61E-05	7.04E-05	6.10E-05
Octachlorodibenzofuran	39001-02-0	8.54E-04	1.15E-05	4.18E-05	1.14E-04	4.88E-06	7.48E-05	9.39E-05	8.13E-05
Total dioxins and dibenzofurans	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated Biphenyls (PCBs)									
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	2.96E-01	3.99E-03	1.45E-02	3.95E-02	1.69E-03	2.60E-02	3.26E-02	2.82E-02
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	3.25E-01	4.37E-03	1.59E-02	4.34E-02	1.86E-03	2.85E-02	3.58E-02	3.10E-02
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	No data	No data	No data	No data	No data	No data	No data	No data
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	No data	No data	No data	No data	No data	No data	No data	No data
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	No data	No data	No data	No data	No data	No data	No data	No data
2',3,4,4',5-Pentachlorobiphenyl	65510-44-3	No data	No data	No data	No data	No data	No data	No data	No data

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	7.12	3.31E-01	2.65E-01	9.69E-01	3.93E-03	0.00E+00	3.24E-03
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	7.41	6.43E-01	5.14E-01	1.88E+00	7.63E-03	0.00E+00	6.28E-03
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	6.29	4.90E-02	3.92E-02	1.43E-01	5.82E-04	0.00E+00	4.79E-04
Phthalates								
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	5.20	4.02E-03	3.22E-03	1.18E-02	4.78E-05	0.00E+00	3.93E-05
Butylbenzyl phthalate	85-68-7	4.41	6.51E-04	5.20E-04	1.90E-03	7.73E-06	0.00E+00	6.36E-06
Dibutyl phthalate	84-74-2	4.72	1.32E-03	1.05E-03	3.86E-03	1.57E-05	0.00E+00	1.29E-05
Diethyl phthalate	84-66-2	4.44	6.86E-04	5.49E-04	2.01E-03	8.15E-06	0.00E+00	6.70E-06
Dimethyl phthalate	131-11-3	1.63	1.08E-06	8.64E-07	3.16E-06	1.28E-08	0.00E+00	1.06E-08
n-Dioctyl phthalate	117-84-0	9.33	5.37E+01	4.29E+01	1.57E+02	6.38E-01	0.00E+00	5.25E-01
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)								
2-Chloronaphthalene	91-58-7	4.07	2.94E-04	2.35E-04	8.60E-04	3.49E-06	0.00E+00	2.87E-06
2-Methyl naphthalene	91-57-6	3.86	1.82E-04	1.46E-04	5.32E-04	2.16E-06	0.00E+00	1.78E-06
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	3.96	2.32E-04	1.85E-04	6.78E-04	2.75E-06	0.00E+00	2.26E-06
Acenaphthylene	208-96-8	4.07	2.95E-04	2.36E-04	8.64E-04	3.51E-06	0.00E+00	2.89E-06
Anthracene	120-12-7	4.47	7.41E-04	5.93E-04	2.17E-03	8.80E-06	0.00E+00	7.24E-06
Fluorene	86-73-7	4.17	3.72E-04	2.98E-04	1.09E-03	4.42E-06	0.00E+00	3.64E-06
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	3.37	5.93E-05	4.74E-05	1.73E-04	7.04E-07	0.00E+00	5.80E-07
Phenanthrene	85-01-8	4.55	8.92E-04	7.13E-04	2.61E-03	1.06E-05	0.00E+00	8.72E-06
Pyrene	129-00-0	5.00	2.51E-03	2.01E-03	7.35E-03	2.98E-05	0.00E+00	2.46E-05

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	3.25E-01	4.37E-03	1.59E-02	4.34E-02	1.86E-03	2.85E-02	3.58E-02	3.10E-02
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	6.31E-01	8.48E-03	3.09E-02	8.42E-02	3.61E-03	5.53E-02	6.94E-02	6.01E-02
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	No data	No data	No data	No data	No data	No data	No data	No data
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	No data	No data	No data	No data	No data	No data	No data	No data
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	No data	No data	No data	No data	No data	No data	No data	No data
Polychlorinated biphenyls (PCBs)[e]	1336-36-3	4.81E-02	6.47E-04	2.36E-03	6.41E-03	2.75E-04	4.21E-03	5.29E-03	4.58E-03
Phthalates									
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	3.95E-03	5.31E-05	1.93E-04	5.26E-04	2.26E-05	3.46E-04	4.34E-04	3.76E-04
Butylbenzyl phthalate	85-68-7	6.39E-04	8.59E-06	3.13E-05	8.52E-05	3.65E-06	5.60E-05	7.03E-05	6.08E-05
Dibutyl phthalate	84-74-2	1.29E-03	1.74E-05	6.34E-05	1.73E-04	7.40E-06	1.13E-04	1.42E-04	1.23E-04
Diethyl phthalate	84-66-2	6.73E-04	9.05E-06	3.30E-05	8.98E-05	3.85E-06	5.90E-05	7.41E-05	6.41E-05
Dimethyl phthalate	131-11-3	1.06E-06	1.43E-08	5.20E-08	1.41E-07	6.06E-09	9.29E-08	1.17E-07	1.01E-07
n-Dioctyl phthalate	117-84-0	5.27E+01	7.08E-01	2.58E+00	7.03E+00	3.01E-01	4.62E+00	5.80E+00	5.02E+00
Light Polycyclic Aromatic Hydrocarbons (molecular weight <200 g/mole)									
2-Chloronaphthalene	91-58-7	2.89E-04	3.88E-06	1.41E-05	3.85E-05	1.65E-06	2.53E-05	3.17E-05	2.75E-05
2-Methyl naphthalene	91-57-6	1.79E-04	2.40E-06	8.75E-06	2.38E-05	1.02E-06	1.57E-05	1.97E-05	1.70E-05
5-Nitroacenaphthene	602-87-9	No data	No data	No data	No data	No data	No data	No data	No data
Acenaphthene	83-32-9	2.27E-04	3.06E-06	1.11E-05	3.03E-05	1.30E-06	1.99E-05	2.50E-05	2.17E-05
Acenaphthylene	208-96-8	2.90E-04	3.90E-06	1.42E-05	3.86E-05	1.66E-06	2.54E-05	3.19E-05	2.76E-05
Anthracene	120-12-7	7.27E-04	9.78E-06	3.56E-05	9.70E-05	4.16E-06	6.38E-05	8.00E-05	6.93E-05
Fluorene	86-73-7	3.65E-04	4.91E-06	1.79E-05	4.87E-05	2.09E-06	3.20E-05	4.02E-05	3.48E-05
Indene	95-13-6	No data	No data	No data	No data	No data	No data	No data	No data
Naphthalene	91-20-3	5.82E-05	7.83E-07	2.85E-06	7.76E-06	3.33E-07	5.10E-06	6.40E-06	5.54E-06
Phenanthrene	85-01-8	8.75E-04	1.18E-05	4.29E-05	1.17E-04	5.00E-06	7.67E-05	9.63E-05	8.34E-05
Pyrene	129-00-0	2.47E-03	3.32E-05	1.21E-04	3.29E-04	1.41E-05	2.16E-04	2.71E-04	2.35E-04

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)								
3-Methylcholanthrene	56-49-5	7.11	3.24E-01	2.59E-01	9.47E-01	3.84E-03	0.00E+00	3.16E-03
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	5.68	1.20E-02	9.62E-03	3.52E-02	1.43E-04	0.00E+00	1.18E-04
Benzo[a]pyrene	50-32-8	6.13	2.74E-02	2.20E-02	8.03E-02	3.26E-04	0.00E+00	2.68E-04
Benzo(a,i)pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data
Benzo(b)fluoranthene	205-99-2	6.20	4.00E-02	3.20E-02	1.17E-01	4.75E-04	0.00E+00	3.91E-04
Benzo(e)pyrene	192-97-2	7.40	6.31E-01	5.05E-01	1.85E+00	7.49E-03	0.00E+00	6.17E-03
Benzo(g,h,i)perylene	191-24-2	7.10	3.16E-01	2.53E-01	9.25E-01	3.76E-03	0.00E+00	3.09E-03
Benzo(j)fluoranthene	205-82-3	6.44	6.92E-02	5.53E-02	2.02E-01	8.22E-04	0.00E+00	6.76E-04
Benzo(k)fluoranthene	207-08-9	6.19	3.98E-02	3.18E-02	1.16E-01	4.73E-04	0.00E+00	3.89E-04
Chrysene	218-01-9	5.74	1.38E-02	1.11E-02	4.04E-02	1.64E-04	0.00E+00	1.35E-04
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	6.55	8.86E-02	7.09E-02	2.59E-01	1.05E-03	0.00E+00	8.66E-04
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	7.29	4.90E-01	3.92E-01	1.43E+00	5.82E-03	0.00E+00	4.79E-03
Fluoranthene	206-44-0	5.08	3.04E-03	2.43E-03	8.89E-03	3.61E-05	0.00E+00	2.97E-05
Hexachloronaphthalene	1335-87-1	7.59	9.77E-01	7.82E-01	2.86E+00	1.16E-02	0.00E+00	9.55E-03
Indeno[1,2,3-cd]pyrene	193-39-5	6.91	2.07E-01	1.66E-01	6.05E-01	2.46E-03	0.00E+00	2.02E-03
Octachloronaphthalene	2234-13-1	6.42	6.61E-02	5.29E-02	1.93E-01	7.85E-04	0.00E+00	6.46E-04
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Heavy Polycyclic Aromatic Hydrocarbons (molecular weight >200 g/mole)									
3-Methylcholanthrene	56-49-5	3.18E-01	4.27E-03	1.56E-02	4.24E-02	1.82E-03	2.78E-02	3.49E-02	3.03E-02
5-Methylchrysene	3697-24-3	No data	No data	No data	No data	No data	No data	No data	No data
Benzo[a]anthracene	56-55-3	1.18E-02	1.59E-04	5.78E-04	1.57E-03	6.74E-05	1.03E-03	1.30E-03	1.12E-03
Benzo[a]pyrene	50-32-8	2.69E-02	3.62E-04	1.32E-03	3.59E-03	1.54E-04	2.36E-03	2.96E-03	2.57E-03
Benzo(a,i)pyrene	191-30-0	No data	No data	No data	No data	No data	No data	No data	No data
Benzo(b)fluoranthene	205-99-2	3.93E-02	5.28E-04	1.93E-03	5.24E-03	2.25E-04	3.44E-03	4.32E-03	3.74E-03
Benzo(e)pyrene	192-97-2	6.19E-01	8.33E-03	3.04E-02	8.26E-02	3.54E-03	5.43E-02	6.81E-02	5.90E-02
Benzo(g,h,i)perylene	191-24-2	3.10E-01	4.17E-03	1.52E-02	4.14E-02	1.77E-03	2.72E-02	3.42E-02	2.96E-02
Benzo(j)fluoranthene	205-82-3	6.79E-02	9.13E-04	3.33E-03	9.06E-03	3.88E-04	5.95E-03	7.47E-03	6.47E-03
Benzo(k)fluoranthene	207-08-9	3.91E-02	5.25E-04	1.92E-03	5.21E-03	2.23E-04	3.43E-03	4.30E-03	3.72E-03
Chrysene	218-01-9	1.36E-02	1.82E-04	6.65E-04	1.81E-03	7.75E-05	1.19E-03	1.49E-03	1.29E-03
Dibenz[a,h]acridine	226-36-8	No data	No data	No data	No data	No data	No data	No data	No data
Dibenz[a,h]anthracene	53-70-3	8.70E-02	1.17E-03	4.26E-03	1.16E-02	4.97E-04	7.62E-03	9.57E-03	8.28E-03
Dibenz[a,j]acridine	224-42-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]fluoranthene	5385-75-1	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,e]pyrene	192-65-4	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]fluoranthene	No CAS #	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,h]pyrene	189-64-0	No data	No data	No data	No data	No data	No data	No data	No data
Dibenzo[a,i]pyrene	189-55-9	4.81E-01	6.47E-03	2.36E-02	6.41E-02	2.75E-03	4.21E-02	5.29E-02	4.58E-02
Fluoranthene	206-44-0	2.98E-03	4.01E-05	1.46E-04	3.98E-04	1.71E-05	2.62E-04	3.28E-04	2.84E-04
Hexachloronaphthalene	1335-87-1	9.59E-01	1.29E-02	4.70E-02	1.28E-01	5.48E-03	8.41E-02	1.06E-01	9.14E-02
Indeno[1,2,3-cd]pyrene	193-39-5	2.03E-01	2.73E-03	9.95E-03	2.71E-02	1.16E-03	1.78E-02	2.23E-02	1.93E-02
Octachloronaphthalene	2234-13-1	6.49E-02	8.73E-04	3.18E-03	8.66E-03	3.71E-04	5.69E-03	7.14E-03	6.18E-03
Pentachloronaphthalene	1321-64-8	No data	No data	No data	No data	No data	No data	No data	No data
Tetrachloronaphthalene	1335-88-2	No data	No data	No data	No data	No data	No data	No data	No data

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow}[a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)								
1,2,3-Trichlorobenzene	87-61-6	4.05	2.79E-04	2.23E-04	8.16E-04	3.31E-06	0.00E+00	2.73E-06
1,2,4-Trichlorobenzene	120-82-1	3.99	2.44E-04	1.96E-04	7.15E-04	2.90E-06	0.00E+00	2.39E-06
1,2,4-Trimethyl benzene	95-63-6	3.65	1.12E-04	8.98E-05	3.28E-04	1.33E-06	0.00E+00	1.10E-06
1,2-Dichlorobenzene	95-50-1	3.45	7.01E-05	5.61E-05	2.05E-04	8.32E-07	0.00E+00	6.85E-07
1,3,5-Trimethyl benzene	108-67-8	3.42	6.61E-05	5.29E-05	1.93E-04	7.85E-07	0.00E+00	6.46E-07
1,3-Dichlorobenzene	541-73-1	3.53	8.52E-05	6.81E-05	2.49E-04	1.01E-06	0.00E+00	8.32E-07
1,3-Dinitrobenzene	99-65-0	1.49	7.79E-07	6.23E-07	2.28E-06	9.25E-09	0.00E+00	7.62E-09
1,4-Dichlorobenzene	106-46-7	3.41	6.48E-05	5.18E-05	1.90E-04	7.70E-07	0.00E+00	6.34E-07
1,4-Dinitrobenzene	100-25-4	1.50	7.94E-07	6.35E-07	2.32E-06	9.44E-09	0.00E+00	7.77E-09
2,4,5-Trichlorophenol	95-95-4	3.87	1.86E-04	1.49E-04	5.45E-04	2.21E-06	0.00E+00	1.82E-06
2,4,6-Trichlorophenol	88-06-2	3.71	1.29E-04	1.03E-04	3.79E-04	1.54E-06	0.00E+00	1.26E-06
2,4-Dichlorophenol	120-83-2	3.04	2.74E-05	2.19E-05	8.01E-05	3.25E-07	0.00E+00	2.68E-07
2,4-Dimethylphenol	105-67-9	2.36	5.75E-06	4.60E-06	1.68E-05	6.83E-08	0.00E+00	5.62E-08
2,4-Dinitrophenol	51-28-5	1.52	8.29E-07	6.63E-07	2.43E-06	9.85E-09	0.00E+00	8.10E-09
2,4-Dinitrotoluene	121-14-2	2.00	2.49E-06	1.99E-06	7.29E-06	2.96E-08	0.00E+00	2.43E-08
2,6-Dinitrotoluene	606-20-2	1.89	1.93E-06	1.55E-06	5.65E-06	2.30E-08	0.00E+00	1.89E-08
2-Chlorophenol	95-57-8	2.16	3.64E-06	2.91E-06	1.07E-05	4.33E-08	0.00E+00	3.56E-08
2-Chlorotoluene	95-49-8	3.54	8.64E-05	6.91E-05	2.53E-04	1.03E-06	0.00E+00	8.44E-07
2-Nitrophenol	88-75-5	1.79	1.55E-06	1.24E-06	4.53E-06	1.84E-08	0.00E+00	1.52E-08
4,6-Dinitro-o-cresol	534-52-1	2.12	3.31E-06	2.65E-06	9.69E-06	3.93E-08	0.00E+00	3.24E-08
4-Chlorotoluene	106-43-4	3.33	5.37E-05	4.30E-05	1.57E-04	6.38E-07	0.00E+00	5.25E-07
4-Nitrophenol	100-02-7	1.91	2.04E-06	1.63E-06	5.98E-06	2.43E-08	0.00E+00	2.00E-08
alpha-Methylstyrene	98-83-9	3.46	7.30E-05	5.84E-05	2.14E-04	8.68E-07	0.00E+00	7.14E-07
Aniline	62-53-3	0.98	2.40E-07	1.92E-07	7.02E-07	2.85E-09	0.00E+00	2.35E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Trichloronaphthalene	1321-65-9	No data	No data	No data	No data	No data	No data	No data	No data
Light Substituted Benzene Compounds (molecular weight <200 g/mole)									
1,2,3-Trichlorobenzene	87-61-6	2.74E-04	3.68E-06	1.34E-05	3.65E-05	1.56E-06	2.40E-05	3.01E-05	2.61E-05
1,2,4-Trichlorobenzene	120-82-1	2.40E-04	3.23E-06	1.18E-05	3.20E-05	1.37E-06	2.10E-05	2.64E-05	2.29E-05
1,2,4-Trimethyl benzene	95-63-6	1.10E-04	1.48E-06	5.40E-06	1.47E-05	6.29E-07	9.65E-06	1.21E-05	1.05E-05
1,2-Dichlorobenzene	95-50-1	6.88E-05	9.25E-07	3.37E-06	9.18E-06	3.93E-07	6.03E-06	7.57E-06	6.55E-06
1,3,5-Trimethyl benzene	108-67-8	6.49E-05	8.72E-07	3.18E-06	8.65E-06	3.71E-07	5.68E-06	7.13E-06	6.18E-06
1,3-Dichlorobenzene	541-73-1	8.36E-05	1.12E-06	4.10E-06	1.12E-05	4.78E-07	7.33E-06	9.20E-06	7.96E-06
1,3-Dinitrobenzene	99-65-0	7.65E-07	1.03E-08	3.75E-08	1.02E-07	4.37E-09	6.70E-08	8.41E-08	7.28E-08
1,4-Dichlorobenzene	106-46-7	6.36E-05	8.55E-07	3.12E-06	8.49E-06	3.64E-07	5.58E-06	7.00E-06	6.06E-06
1,4-Dinitrobenzene	100-25-4	7.80E-07	1.05E-08	3.82E-08	1.04E-07	4.46E-09	6.83E-08	8.58E-08	7.43E-08
2,4,5-Trichlorophenol	95-95-4	1.83E-04	2.46E-06	8.95E-06	2.44E-05	1.04E-06	1.60E-05	2.01E-05	1.74E-05
2,4,6-Trichlorophenol	88-06-2	1.27E-04	1.71E-06	6.22E-06	1.69E-05	7.26E-07	1.11E-05	1.40E-05	1.21E-05
2,4-Dichlorophenol	120-83-2	2.69E-05	3.61E-07	1.32E-06	3.59E-06	1.54E-07	2.36E-06	2.96E-06	2.56E-06
2,4-Dimethylphenol	105-67-9	5.65E-06	7.59E-08	2.77E-07	7.53E-07	3.23E-08	4.95E-07	6.21E-07	5.38E-07
2,4-Dinitrophenol	51-28-5	8.14E-07	1.09E-08	3.99E-08	1.09E-07	4.65E-09	7.13E-08	8.95E-08	7.75E-08
2,4-Dinitrotoluene	121-14-2	2.45E-06	3.29E-08	1.20E-07	3.26E-07	1.40E-08	2.14E-07	2.69E-07	2.33E-07
2,6-Dinitrotoluene	606-20-2	1.90E-06	2.55E-08	9.30E-08	2.53E-07	1.08E-08	1.66E-07	2.09E-07	1.81E-07
2-Chlorophenol	95-57-8	3.58E-06	4.81E-08	1.75E-07	4.77E-07	2.04E-08	3.13E-07	3.93E-07	3.41E-07
2-Chlorotoluene	95-49-8	8.48E-05	1.14E-06	4.15E-06	1.13E-05	4.84E-07	7.43E-06	9.33E-06	8.07E-06
2-Nitrophenol	88-75-5	1.52E-06	2.05E-08	7.46E-08	2.03E-07	8.69E-09	1.33E-07	1.67E-07	1.45E-07
4,6-Dinitro-o-cresol	534-52-1	3.25E-06	4.37E-08	1.59E-07	4.34E-07	1.86E-08	2.85E-07	3.58E-07	3.10E-07
4-Chlorotoluene	106-43-4	5.27E-05	7.09E-07	2.58E-06	7.03E-06	3.01E-07	4.62E-06	5.80E-06	5.02E-06
4-Nitrophenol	100-02-7	2.00E-06	2.70E-08	9.82E-08	2.67E-07	1.15E-08	1.76E-07	2.21E-07	1.91E-07
alpha-Methylstyrene	98-83-9	7.17E-05	9.64E-07	3.51E-06	9.56E-06	4.10E-07	6.28E-06	7.89E-06	6.83E-06
Aniline	62-53-3	2.36E-07	3.17E-09	1.15E-08	3.14E-08	1.35E-09	2.06E-08	2.59E-08	2.24E-08

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Benzotrichloride	98-07-7	2.92	2.09E-05	1.67E-05	6.11E-05	2.48E-07	0.00E+00	2.04E-07
Benzyl chloride	100-44-7	2.30	5.01E-06	4.01E-06	1.47E-05	5.95E-08	0.00E+00	4.90E-08
Bromobenzene	108-86-1	2.99	2.45E-05	1.96E-05	7.18E-05	2.92E-07	0.00E+00	2.40E-07
Chlorobenzene	108-90-7	2.79	1.55E-05	1.24E-05	4.53E-05	1.84E-07	0.00E+00	1.51E-07
Cumene	98-82-8	3.61	1.03E-04	8.24E-05	3.01E-04	1.22E-06	0.00E+00	1.01E-06
m-Cresol	108-39-4	1.96	2.29E-06	1.83E-06	6.69E-06	2.72E-08	0.00E+00	2.23E-08
n-Butyl benzene	104-51-8	4.28	4.79E-04	3.83E-04	1.40E-03	5.69E-06	0.00E+00	4.68E-06
Nitrobenzene	98-95-3	1.83	1.71E-06	1.37E-06	5.01E-06	2.03E-08	0.00E+00	1.67E-08
n-Propyl benzene	103-65-1	3.69	1.23E-04	9.84E-05	3.60E-04	1.46E-06	0.00E+00	1.20E-06
o-Cresol	95-48-7	2.02	2.64E-06	2.11E-06	7.72E-06	3.13E-08	0.00E+00	2.58E-08
o-Dinitrobenzene	528-29-0	1.69	1.23E-06	9.84E-07	3.60E-06	1.46E-08	0.00E+00	1.20E-08
o-Nitroaniline	88-74-4	1.85	1.78E-06	1.42E-06	5.20E-06	2.11E-08	0.00E+00	1.74E-08
o-Toluidine	95-53-4	1.34	5.50E-07	4.40E-07	1.61E-06	6.53E-09	0.00E+00	5.38E-09
p-Chloroaniline	106-47-8	1.87	1.86E-06	1.49E-06	5.44E-06	2.21E-08	0.00E+00	1.82E-08
p-Cresol	106-44-5	1.94	2.19E-06	1.75E-06	6.39E-06	2.60E-08	0.00E+00	2.14E-08
Phenol	108-95-2	1.48	7.54E-07	6.03E-07	2.20E-06	8.95E-09	0.00E+00	7.37E-09
p-Nitrochlorobenzene	100-00-5	2.39	6.17E-06	4.93E-06	1.80E-05	7.32E-08	0.00E+00	6.03E-08
p-Toluidine	106-49-0	1.40	6.31E-07	5.05E-07	1.85E-06	7.49E-09	0.00E+00	6.17E-09
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	4.11	3.24E-04	2.59E-04	9.47E-04	3.84E-06	0.00E+00	3.16E-06
Toluene-2,6-diamine	823-40-5	0.16	3.63E-08	2.90E-08	1.06E-07	4.31E-10	0.00E+00	3.55E-10
Trimethyl benzene	25551-13-7	3.42	6.61E-05	5.29E-05	1.93E-04	7.85E-07	0.00E+00	6.46E-07
Other Light Semivolatile Compounds (molecular weight <200 g/mole)								
1,1'-Biphenyl	92-52-4	3.90	2.00E-04	1.60E-04	5.84E-04	2.37E-06	0.00E+00	1.95E-06
1,1-Dimethylhydrazine	57-14-7	-1.19	1.62E-09	1.30E-09	4.75E-09	1.93E-11	0.00E+00	1.59E-11
1,2-Dimethylhydrazine	540-73-8	-1.37	1.08E-09	8.61E-10	3.15E-09	1.28E-11	0.00E+00	1.05E-11

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Benzotrichloride	98-07-7	2.05E-05	2.76E-07	1.01E-06	2.74E-06	1.17E-07	1.80E-06	2.26E-06	1.95E-06
Benzyl chloride	100-44-7	4.92E-06	6.61E-08	2.41E-07	6.56E-07	2.81E-08	4.31E-07	5.41E-07	4.68E-07
Bromobenzene	108-86-1	2.41E-05	3.24E-07	1.18E-06	3.21E-06	1.38E-07	2.11E-06	2.65E-06	2.30E-06
Chlorobenzene	108-90-7	1.52E-05	2.04E-07	7.44E-07	2.03E-06	8.68E-08	1.33E-06	1.67E-06	1.45E-06
Cumene	98-82-8	1.01E-04	1.36E-06	4.95E-06	1.35E-05	5.78E-07	8.86E-06	1.11E-05	9.63E-06
m-Cresol	108-39-4	2.24E-06	3.02E-08	1.10E-07	2.99E-07	1.28E-08	1.97E-07	2.47E-07	2.14E-07
n-Butyl benzene	104-51-8	4.70E-04	6.32E-06	2.30E-05	6.27E-05	2.69E-06	4.12E-05	5.17E-05	4.48E-05
Nitrobenzene	98-95-3	1.68E-06	2.26E-08	8.23E-08	2.24E-07	9.60E-09	1.47E-07	1.85E-07	1.60E-07
n-Propyl benzene	103-65-1	1.21E-04	1.62E-06	5.92E-06	1.61E-05	6.90E-07	1.06E-05	1.33E-05	1.15E-05
o-Cresol	95-48-7	2.59E-06	3.48E-08	1.27E-07	3.45E-07	1.48E-08	2.27E-07	2.85E-07	2.47E-07
o-Dinitrobenzene	528-29-0	1.21E-06	1.62E-08	5.92E-08	1.61E-07	6.90E-09	1.06E-07	1.33E-07	1.15E-07
o-Nitroaniline	88-74-4	1.75E-06	2.35E-08	8.56E-08	2.33E-07	9.98E-09	1.53E-07	1.92E-07	1.66E-07
o-Toluidine	95-53-4	5.40E-07	7.26E-09	2.65E-08	7.20E-08	3.09E-09	4.73E-08	5.94E-08	5.14E-08
p-Chloroaniline	106-47-8	1.82E-06	2.45E-08	8.94E-08	2.43E-07	1.04E-08	1.60E-07	2.01E-07	1.74E-07
p-Cresol	106-44-5	2.15E-06	2.88E-08	1.05E-07	2.86E-07	1.23E-08	1.88E-07	2.36E-07	2.04E-07
Phenol	108-95-2	7.40E-07	9.95E-09	3.63E-08	9.87E-08	4.23E-09	6.48E-08	8.14E-08	7.05E-08
p-Nitrochlorobenzene	100-00-5	6.05E-06	8.14E-08	2.97E-07	8.07E-07	3.46E-08	5.31E-07	6.66E-07	5.77E-07
p-Toluidine	106-49-0	6.19E-07	8.33E-09	3.04E-08	8.26E-08	3.54E-09	5.43E-08	6.81E-08	5.90E-08
sec-Butyl benzene	135-98-8	No data	No data	No data	No data	No data	No data	No data	No data
tert-Butyl benzene	98-06-6	3.18E-04	4.27E-06	1.56E-05	4.24E-05	1.82E-06	2.78E-05	3.49E-05	3.03E-05
Toluene-2,6-diamine	823-40-5	3.56E-08	4.79E-10	1.75E-09	4.75E-09	2.04E-10	3.12E-09	3.92E-09	3.39E-09
Trimethyl benzene	25551-13-7	6.49E-05	8.72E-07	3.18E-06	8.65E-06	3.71E-07	5.68E-06	7.14E-06	6.18E-06
Other Light Semivolatile Compounds (molecular weight <200 g/mole)									
1,1'-Biphenyl	92-52-4	1.96E-04	2.63E-06	9.60E-06	2.61E-05	1.12E-06	1.72E-05	2.15E-05	1.87E-05
1,1-Dimethylhydrazine	57-14-7	1.59E-09	2.14E-11	7.80E-11	2.12E-10	9.10E-12	1.40E-10	1.75E-10	1.52E-10
1,2-Dimethylhydrazine	540-73-8	1.06E-09	1.42E-11	5.18E-11	1.41E-10	6.04E-12	9.26E-11	1.16E-10	1.01E-10

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
1,2-Diphenylhydrazine	122-66-7	2.94	2.19E-05	1.75E-05	6.40E-05	2.60E-07	0.00E+00	2.14E-07
1,3-Propane sultone	1120-71-4	-0.52	7.53E-09	6.03E-09	2.20E-08	8.95E-11	0.00E+00	7.36E-11
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	1.93	2.14E-06	1.71E-06	6.26E-06	2.54E-08	0.00E+00	2.09E-08
2-Propenoic acid	79-10-7	0.43	6.76E-08	5.41E-08	1.98E-07	8.03E-10	0.00E+00	6.61E-10
4,4'-Methylenedianiline	101-77-9	1.59	9.77E-07	7.82E-07	2.86E-06	1.16E-08	0.00E+00	9.55E-09
Acetophenone	98-86-2	1.64	1.10E-06	8.78E-07	3.21E-06	1.30E-08	0.00E+00	1.07E-08
Benzoic acid	65-85-0	1.87	1.86E-06	1.49E-06	5.45E-06	2.21E-08	0.00E+00	1.82E-08
bis(2-Chloroethoxy)methane	111-91-1	1.30	5.01E-07	4.01E-07	1.47E-06	5.95E-09	0.00E+00	4.90E-09
bis(2-Chloroethyl) ether	111-44-4	1.30	5.02E-07	4.02E-07	1.47E-06	5.97E-09	0.00E+00	4.91E-09
Chlorocyclopentadiene	41851-50-7	2.43	6.76E-06	5.41E-06	1.98E-05	8.03E-08	0.00E+00	6.61E-08
Cyclohexanol	108-93-0	1.23	4.27E-07	3.41E-07	1.25E-06	5.07E-09	0.00E+00	4.17E-09
Dichloroisopropyl ether	108-60-1	2.58	9.55E-06	7.64E-06	2.79E-05	1.13E-07	0.00E+00	9.34E-08
Dichloromethyl ether	542-88-1	0.58	9.55E-08	7.64E-08	2.79E-07	1.13E-09	0.00E+00	9.34E-10
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	0.16	3.63E-08	2.90E-08	1.06E-07	4.31E-10	0.00E+00	3.55E-10
Dimethylaniline	121-69-7	2.31	5.13E-06	4.10E-06	1.50E-05	6.09E-08	0.00E+00	5.01E-08
Di-n-propylnitrosamine	621-64-7	1.38	6.03E-07	4.82E-07	1.76E-06	7.16E-09	0.00E+00	5.89E-09
Diphenyl ether	101-84-8	4.21	4.07E-04	3.26E-04	1.19E-03	4.84E-06	0.00E+00	3.98E-06
Epichlorohydrin	106-89-8	0.25	4.47E-08	3.58E-08	1.31E-07	5.31E-10	0.00E+00	4.37E-10
Ethyl carbamate (Urethane)	51-79-6	-0.15	1.78E-08	1.42E-08	5.20E-08	2.11E-10	0.00E+00	1.74E-10
Ethyl methanesulfonate	62-50-0	0.05	2.81E-08	2.25E-08	8.23E-08	3.34E-10	0.00E+00	2.75E-10
Ethylene dibromide	106-93-4	1.75	1.41E-06	1.13E-06	4.13E-06	1.68E-08	0.00E+00	1.38E-08
Ethylene glycol	107-21-1	-1.36	1.10E-09	8.77E-10	3.21E-09	1.30E-11	0.00E+00	1.07E-11
Ethylene glycol monobutyl ether	111-76-2	0.83	1.70E-07	1.36E-07	4.97E-07	2.02E-09	0.00E+00	1.66E-09
Ethylene glycol monoethyl ether acetate	111-15-9	0.59	9.77E-08	7.82E-08	2.86E-07	1.16E-09	0.00E+00	9.55E-10

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
1,2-Diphenylhydrazine	122-66-7	2.15E-05	2.89E-07	1.05E-06	2.86E-06	1.23E-07	1.88E-06	2.36E-06	2.05E-06
1,3-Propane sultone	1120-71-4	7.40E-09	9.94E-11	3.62E-10	9.86E-10	4.23E-11	6.48E-10	8.14E-10	7.04E-10
2,4-Toluene diisocyanate	584-84-9	No data	No data	No data	No data	No data	No data	No data	No data
2-Chloroacetophenone	532-27-4	2.10E-06	2.82E-08	1.03E-07	2.80E-07	1.20E-08	1.84E-07	2.31E-07	2.00E-07
2-Propenoic acid	79-10-7	6.64E-08	8.92E-10	3.25E-09	8.85E-09	3.79E-10	5.82E-09	7.30E-09	6.32E-09
4,4'-Methylenedianiline	101-77-9	9.59E-07	1.29E-08	4.70E-08	1.28E-07	5.48E-09	8.41E-08	1.06E-07	9.14E-08
Acetophenone	98-86-2	1.08E-06	1.45E-08	5.28E-08	1.44E-07	6.16E-09	9.44E-08	1.19E-07	1.03E-07
Benzoic acid	65-85-0	1.83E-06	2.46E-08	8.96E-08	2.44E-07	1.04E-08	1.60E-07	2.01E-07	1.74E-07
bis(2-Chloroethoxy)methane	111-91-1	4.92E-07	6.62E-09	2.41E-08	6.56E-08	2.81E-09	4.31E-08	5.41E-08	4.69E-08
bis(2-Chloroethyl) ether	111-44-4	4.93E-07	6.63E-09	2.42E-08	6.58E-08	2.82E-09	4.32E-08	5.43E-08	4.70E-08
Chlorocyclopentadiene	41851-50-7	6.64E-06	8.92E-08	3.25E-07	8.85E-07	3.79E-08	5.82E-07	7.30E-07	6.32E-07
Cyclohexanol	108-93-0	4.19E-07	5.63E-09	2.05E-08	5.59E-08	2.39E-09	3.67E-08	4.61E-08	3.99E-08
Dichloroisopropyl ether	108-60-1	9.38E-06	1.26E-07	4.59E-07	1.25E-06	5.36E-08	8.22E-07	1.03E-06	8.93E-07
Dichloromethyl ether	542-88-1	9.38E-08	1.26E-09	4.59E-09	1.25E-08	5.36E-10	8.22E-09	1.03E-08	8.93E-09
Dichloropentadiene	61626-71-9	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl sulfate	77-78-1	3.56E-08	4.79E-10	1.75E-09	4.75E-09	2.04E-10	3.12E-09	3.92E-09	3.39E-09
Dimethylaniline	121-69-7	5.04E-06	6.77E-08	2.47E-07	6.72E-07	2.88E-08	4.41E-07	5.54E-07	4.80E-07
Di-n-propylnitrosamine	621-64-7	5.92E-07	7.96E-09	2.90E-08	7.89E-08	3.38E-09	5.19E-08	6.51E-08	5.64E-08
Diphenyl ether	101-84-8	4.00E-04	5.38E-06	1.96E-05	5.33E-05	2.29E-06	3.51E-05	4.40E-05	3.81E-05
Epichlorohydrin	106-89-8	4.39E-08	5.90E-10	2.15E-09	5.85E-09	2.51E-10	3.85E-09	4.83E-09	4.18E-09
Ethyl carbamate (Urethane)	51-79-6	1.75E-08	2.35E-10	8.55E-10	2.33E-09	9.98E-11	1.53E-09	1.92E-09	1.66E-09
Ethyl methanesulfonate	62-50-0	2.76E-08	3.71E-10	1.35E-09	3.68E-09	1.58E-10	2.42E-09	3.04E-09	2.63E-09
Ethylene dibromide	106-93-4	1.39E-06	1.86E-08	6.79E-08	1.85E-07	7.92E-09	1.21E-07	1.52E-07	1.32E-07
Ethylene glycol	107-21-1	1.08E-09	1.45E-11	5.27E-11	1.44E-10	6.15E-12	9.43E-11	1.18E-10	1.03E-10
Ethylene glycol monobutyl ether	111-76-2	1.67E-07	2.24E-09	8.17E-09	2.22E-08	9.53E-10	1.46E-08	1.83E-08	1.59E-08
Ethylene glycol monoethyl ether acetate	111-15-9	9.59E-08	1.29E-09	4.70E-09	1.28E-08	5.48E-10	8.41E-09	1.06E-08	9.14E-09

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Ethylene thiourea	96-45-7	-0.66	5.50E-09	4.40E-09	1.61E-08	6.53E-11	0.00E+00	5.37E-11
Furfural	98-01-1	0.96	2.29E-07	1.83E-07	6.70E-07	2.72E-09	0.00E+00	2.24E-09
Maleic hydrazide	123-33-1	-0.84	3.63E-09	2.90E-09	1.06E-08	4.31E-11	0.00E+00	3.55E-11
Malononitrile	109-77-3	-0.60	6.31E-09	5.05E-09	1.85E-08	7.49E-11	0.00E+00	6.17E-11
Methyl styrene (mixed isomers)	25013-15-4	3.48	7.59E-05	6.07E-05	2.22E-04	9.01E-07	0.00E+00	7.42E-07
Methylhydrazine	60-34-4	-1.05	2.24E-09	1.79E-09	6.55E-09	2.66E-11	0.00E+00	2.19E-11
N,N-Diphenylamine	122-39-4	3.50	7.94E-05	6.35E-05	2.32E-04	9.44E-07	0.00E+00	7.77E-07
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	2.41	6.46E-06	5.16E-06	1.89E-05	7.67E-08	0.00E+00	6.31E-08
N-Nitrosomorpholine	59-89-2	0.98	2.40E-07	1.92E-07	7.03E-07	2.85E-09	0.00E+00	2.35E-09
N-Nitroso-N,N-dimethylamine	62-75-9	-0.57	6.76E-09	5.41E-09	1.98E-08	8.03E-11	0.00E+00	6.61E-11
o-Anisidine	90-04-0	1.18	3.80E-07	3.04E-07	1.11E-06	4.52E-09	0.00E+00	3.72E-09
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	-0.60	6.28E-09	5.02E-09	1.84E-08	7.46E-11	0.00E+00	6.14E-11
p-Phthalic acid	100-21-0	2.00	2.51E-06	2.01E-06	7.35E-06	2.98E-08	0.00E+00	2.46E-08
Pyridine	110-86-1	0.67	1.18E-07	9.40E-08	3.44E-07	1.40E-09	0.00E+00	1.15E-09
Quinoline	91-22-5	2.03	2.69E-06	2.15E-06	7.88E-06	3.20E-08	0.00E+00	2.63E-08
Quinone	106-51-4	0.20	3.98E-08	3.18E-08	1.16E-07	4.73E-10	0.00E+00	3.89E-10
Safrole	94-59-7	2.66	1.15E-05	9.18E-06	3.36E-05	1.36E-07	0.00E+00	1.12E-07
Tetrahydrofuran	109-99-9	0.45	7.03E-08	5.63E-08	2.06E-07	8.35E-10	0.00E+00	6.88E-10
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)								
1,2,4,5-Tetrachlorobenzene	95-94-3	4.64	1.10E-03	8.76E-04	3.20E-03	1.30E-05	0.00E+00	1.07E-05
1,3,5-Trinitrobenzene	99-35-4	1.18	3.79E-07	3.03E-07	1.11E-06	4.51E-09	0.00E+00	3.71E-09
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	4.17	3.72E-04	2.97E-04	1.09E-03	4.41E-06	0.00E+00	3.63E-06
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	4.54	8.71E-04	6.97E-04	2.55E-03	1.03E-05	0.00E+00	8.51E-06
2-sec-Butyl-4,6-dinitrophenol	88-85-7	3.56	9.12E-05	7.30E-05	2.67E-04	1.08E-06	0.00E+00	8.92E-07

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Ethylene thiourea	96-45-7	5.40E-09	7.25E-11	2.64E-10	7.20E-10	3.08E-11	4.73E-10	5.94E-10	5.14E-10
Furfural	98-01-1	2.25E-07	3.02E-09	1.10E-08	3.00E-08	1.29E-09	1.97E-08	2.47E-08	2.14E-08
Maleic hydrazide	123-33-1	3.56E-09	4.79E-11	1.75E-10	4.75E-10	2.04E-11	3.12E-10	3.92E-10	3.39E-10
Malononitrile	109-77-3	6.19E-09	8.33E-11	3.04E-10	8.26E-10	3.54E-11	5.43E-10	6.81E-10	5.90E-10
Methyl styrene (mixed isomers)	25013-15-4	7.45E-05	1.00E-06	3.65E-06	9.93E-06	4.26E-07	6.53E-06	8.19E-06	7.09E-06
Methylhydrazine	60-34-4	2.20E-09	2.96E-11	1.08E-10	2.93E-10	1.26E-11	1.93E-10	2.42E-10	2.09E-10
N,N-Diphenylamine	122-39-4	7.80E-05	1.05E-06	3.82E-06	1.04E-05	4.46E-07	6.83E-06	8.58E-06	7.43E-06
Nitric acid, propyl ester	627-13-4	No data	No data	No data	No data	No data	No data	No data	No data
N-Nitrosodi-n-butylamine	924-16-3	6.34E-06	8.52E-08	3.11E-07	8.45E-07	3.62E-08	5.55E-07	6.97E-07	6.04E-07
N-Nitrosomorpholine	59-89-2	2.36E-07	3.17E-09	1.16E-08	3.14E-08	1.35E-09	2.07E-08	2.59E-08	2.25E-08
N-Nitroso-N,N-dimethylamine	62-75-9	6.64E-09	8.92E-11	3.25E-10	8.85E-10	3.79E-11	5.82E-10	7.30E-10	6.32E-10
o-Anisidine	90-04-0	3.73E-07	5.02E-09	1.83E-08	4.98E-08	2.13E-09	3.27E-08	4.11E-08	3.55E-08
Oxalic acid	144-62-7	No data	No data	No data	No data	No data	No data	No data	No data
Phthalic anhydride	85-44-9	6.17E-09	8.29E-11	3.02E-10	8.22E-10	3.52E-11	5.40E-10	6.78E-10	5.87E-10
p-Phthalic acid	100-21-0	2.47E-06	3.32E-08	1.21E-07	3.29E-07	1.41E-08	2.16E-07	2.71E-07	2.35E-07
Pyridine	110-86-1	1.15E-07	1.55E-09	5.66E-09	1.54E-08	6.59E-10	1.01E-08	1.27E-08	1.10E-08
Quinoline	91-22-5	2.64E-06	3.55E-08	1.29E-07	3.52E-07	1.51E-08	2.32E-07	2.91E-07	2.52E-07
Quinone	106-51-4	3.91E-08	5.26E-10	1.92E-09	5.21E-09	2.23E-10	3.43E-09	4.30E-09	3.72E-09
Safrole	94-59-7	1.13E-05	1.52E-07	5.52E-07	1.50E-06	6.44E-08	9.88E-07	1.24E-06	1.07E-06
Tetrahydrofuran	109-99-9	6.90E-08	9.28E-10	3.38E-09	9.21E-09	3.95E-10	6.05E-09	7.60E-09	6.58E-09
Other Heavy Semivolatile Compounds (molecular weight >200 g/mole)									
1,2,4,5-Tetrachlorobenzene	95-94-3	1.08E-03	1.45E-05	5.27E-05	1.43E-04	6.14E-06	9.42E-05	1.18E-04	1.02E-04
1,3,5-Trinitrobenzene	99-35-4	3.72E-07	5.01E-09	1.82E-08	4.97E-08	2.13E-09	3.26E-08	4.10E-08	3.55E-08
2,6-Bis(tert-butyl)-4-methylphenol	128-37-0	3.65E-04	4.90E-06	1.79E-05	4.87E-05	2.08E-06	3.20E-05	4.01E-05	3.47E-05
2-Cyclohexyl-4,6-dinitrophenol	131-89-5	8.55E-04	1.15E-05	4.19E-05	1.14E-04	4.89E-06	7.49E-05	9.41E-05	8.14E-05
2-sec-Butyl-4,6-dinitrophenol	88-85-7	8.95E-05	1.20E-06	4.39E-06	1.19E-05	5.12E-07	7.85E-06	9.85E-06	8.53E-06

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
3,3'-Dichlorobenzidine	91-94-1	3.58	9.44E-05	7.56E-05	2.76E-04	1.12E-06	0.00E+00	9.23E-07
3,3'-Dimethoxybenzidine	119-90-4	1.81	1.62E-06	1.30E-06	4.75E-06	1.93E-08	0.00E+00	1.59E-08
4-Bromophenylphenyl ether	101-55-3	5.04	2.76E-03	2.21E-03	8.08E-03	3.28E-05	0.00E+00	2.70E-05
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	3.82	1.66E-04	1.33E-04	4.86E-04	1.97E-06	0.00E+00	1.62E-06
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	2.35	5.62E-06	4.50E-06	1.65E-05	6.68E-08	0.00E+00	5.50E-08
Chlorobenzilate	510-15-6	4.38	6.03E-04	4.82E-04	1.76E-03	7.16E-06	0.00E+00	5.89E-06
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	4.58	9.55E-04	7.64E-04	2.79E-03	1.13E-05	0.00E+00	9.34E-06
Hexachlorobenzene	118-74-1	5.50	7.99E-03	6.39E-03	2.34E-02	9.49E-05	0.00E+00	7.81E-05
Hexachlorobutadiene	87-68-3	4.73	1.35E-03	1.08E-03	3.96E-03	1.61E-05	0.00E+00	1.32E-05
Hexachlorocyclopentadiene	77-47-4	4.91	2.03E-03	1.62E-03	5.94E-03	2.41E-05	0.00E+00	1.98E-05
Hexachloroethane	67-72-1	3.98	2.43E-04	1.94E-04	7.10E-04	2.88E-06	0.00E+00	2.37E-06
Hexachlorophene	70-30-4	7.54	8.72E-01	6.98E-01	2.55E+00	1.04E-02	0.00E+00	8.52E-03
Hexamethylene-1,5-diisocyanate	822-06-0	3.20	3.98E-05	3.18E-05	1.16E-04	4.73E-07	0.00E+00	3.89E-07
Mirex	2385-85-5	6.89	1.95E-01	1.56E-01	5.71E-01	2.32E-03	0.00E+00	1.91E-03
Nitrofen	1836-75-5	5.53	8.51E-03	6.81E-03	2.49E-02	1.01E-04	0.00E+00	8.32E-05
Pentachlorobenzene	608-93-5	5.09	3.08E-03	2.46E-03	9.01E-03	3.66E-05	0.00E+00	3.01E-05
Pentachloronitrobenzene	82-68-8	4.64	1.10E-03	8.81E-04	3.22E-03	1.31E-05	0.00E+00	1.08E-05
Pentachlorophenol	87-86-5	5.08	3.01E-03	2.41E-03	8.82E-03	3.58E-05	0.00E+00	2.95E-05
Picric acid	88-89-1	2.03	2.69E-06	2.15E-06	7.88E-06	3.20E-08	0.00E+00	2.63E-08
Pronamide	23950-58-5	3.51	8.14E-05	6.51E-05	2.38E-04	9.67E-07	0.00E+00	7.96E-07
Strychnine	57-24-9	1.93	2.14E-06	1.71E-06	6.25E-06	2.54E-08	0.00E+00	2.09E-08
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	4.00	2.51E-04	2.01E-04	7.35E-04	2.98E-06	0.00E+00	2.46E-06

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
3,3'-Dichlorobenzidine	91-94-1	9.27E-05	1.25E-06	4.54E-06	1.24E-05	5.30E-07	8.13E-06	1.02E-05	8.83E-06
3,3'-Dimethoxybenzidine	119-90-4	1.59E-06	2.14E-08	7.81E-08	2.12E-07	9.10E-09	1.40E-07	1.75E-07	1.52E-07
4-Bromophenylphenyl ether	101-55-3	2.71E-03	3.64E-05	1.33E-04	3.61E-04	1.55E-05	2.37E-04	2.98E-04	2.58E-04
Ammonium perfluorooctanoate	3825-26-1	No data	No data	No data	No data	No data	No data	No data	No data
Azobenzene	103-33-3	1.63E-04	2.19E-06	7.98E-06	2.17E-05	9.31E-07	1.43E-05	1.79E-05	1.55E-05
Bis(3-tert-butyl-4-hydroxy-6-methyl-phenyl)sulfide	96-69-5	No data	No data	No data	No data	No data	No data	No data	No data
Captan	133-06-2	5.52E-06	7.42E-08	2.71E-07	7.36E-07	3.15E-08	4.84E-07	6.07E-07	5.26E-07
Chlorobenzilate	510-15-6	5.92E-04	7.96E-06	2.90E-05	7.89E-05	3.38E-06	5.19E-05	6.51E-05	5.64E-05
Dibutylphosphate	107-66-4	No data	No data	No data	No data	No data	No data	No data	No data
Dimethyl aminoazobenzene	60-11-7	9.38E-04	1.26E-05	4.59E-05	1.25E-04	5.36E-06	8.22E-05	1.03E-04	8.93E-05
Hexachlorobenzene	118-74-1	7.84E-03	1.05E-04	3.84E-04	1.05E-03	4.48E-05	6.87E-04	8.63E-04	7.47E-04
Hexachlorobutadiene	87-68-3	1.33E-03	1.78E-05	6.50E-05	1.77E-04	7.59E-06	1.16E-04	1.46E-04	1.26E-04
Hexachlorocyclopentadiene	77-47-4	1.99E-03	2.68E-05	9.77E-05	2.66E-04	1.14E-05	1.75E-04	2.19E-04	1.90E-04
Hexachloroethane	67-72-1	2.38E-04	3.20E-06	1.17E-05	3.18E-05	1.36E-06	2.09E-05	2.62E-05	2.27E-05
Hexachlorophene	70-30-4	8.56E-01	1.15E-02	4.20E-02	1.14E-01	4.89E-03	7.50E-02	9.42E-02	8.15E-02
Hexamethylene-1,5-diisocyanate	822-06-0	3.91E-05	5.26E-07	1.92E-06	5.21E-06	2.23E-07	3.43E-06	4.30E-06	3.72E-06
Mirex	2385-85-5	1.91E-01	2.57E-03	9.38E-03	2.55E-02	1.09E-03	1.68E-02	2.11E-02	1.82E-02
Nitrofen	1836-75-5	8.36E-03	1.12E-04	4.09E-04	1.11E-03	4.77E-05	7.32E-04	9.19E-04	7.96E-04
Pentachlorobenzene	608-93-5	3.02E-03	4.07E-05	1.48E-04	4.03E-04	1.73E-05	2.65E-04	3.33E-04	2.88E-04
Pentachloronitrobenzene	82-68-8	1.08E-03	1.45E-05	5.30E-05	1.44E-04	6.18E-06	9.47E-05	1.19E-04	1.03E-04
Pentachlorophenol	87-86-5	2.96E-03	3.98E-05	1.45E-04	3.95E-04	1.69E-05	2.59E-04	3.26E-04	2.82E-04
Picric acid	88-89-1	2.64E-06	3.55E-08	1.29E-07	3.52E-07	1.51E-08	2.32E-07	2.91E-07	2.52E-07
Pronamide	23950-58-5	7.99E-05	1.07E-06	3.92E-06	1.07E-05	4.57E-07	7.00E-06	8.79E-06	7.61E-06
Strychnine	57-24-9	2.10E-06	2.82E-08	1.03E-07	2.80E-07	1.20E-08	1.84E-07	2.31E-07	2.00E-07
Terphenyls	26140-60-3	No data	No data	No data	No data	No data	No data	No data	No data
Tributyl phosphate	126-73-8	2.47E-04	3.32E-06	1.21E-05	3.29E-05	1.41E-06	2.16E-05	2.71E-05	2.35E-05

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Trifluralin	1582-09-8	5.34	5.50E-03	4.40E-03	1.61E-02	6.53E-05	0.00E+00	5.37E-05
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides								
2,4,5-T	93-76-5	3.36	5.75E-05	4.60E-05	1.68E-04	6.84E-07	0.00E+00	5.63E-07
2,4-D and esters	94-75-7	2.81	1.62E-05	1.30E-05	4.75E-05	1.93E-07	0.00E+00	1.59E-07
4,4'-DDD	72-54-8	6.12	3.32E-02	2.66E-02	9.71E-02	3.94E-04	0.00E+00	3.25E-04
4,4'-DDE	72-55-9	6.26	4.54E-02	3.63E-02	1.33E-01	5.39E-04	0.00E+00	4.44E-04
4,4'-DDT	50-29-3	6.07	2.95E-02	2.36E-02	8.63E-02	3.50E-04	0.00E+00	2.88E-04
Aldrin	309-00-2	6.18	3.79E-02	3.03E-02	1.11E-01	4.51E-04	0.00E+00	3.71E-04
alpha-BHC	319-84-6	3.80	1.58E-04	1.27E-04	4.63E-04	1.88E-06	0.00E+00	1.55E-06
beta-BHC	319-85-7	3.83	1.71E-04	1.37E-04	5.01E-04	2.03E-06	0.00E+00	1.67E-06
Chlordane	57-74-9	5.94	2.18E-02	1.74E-02	6.36E-02	2.58E-04	0.00E+00	2.13E-04
Delta-BHC	319-86-8	4.14	3.47E-04	2.77E-04	1.01E-03	4.12E-06	0.00E+00	3.39E-06
Dieldrin	60-57-1	5.27	4.67E-03	3.74E-03	1.37E-02	5.55E-05	0.00E+00	4.57E-05
Endothall	145-73-3	-0.87	3.39E-09	2.71E-09	9.91E-09	4.02E-11	0.00E+00	3.31E-11
Endrin	72-20-8	4.89	1.96E-03	1.57E-03	5.73E-03	2.32E-05	0.00E+00	1.91E-05
gamma-BHC (Lindane)	58-89-9	3.72	1.32E-04	1.05E-04	3.86E-04	1.57E-06	0.00E+00	1.29E-06
Heptachlor	76-44-8	5.02	2.60E-03	2.08E-03	7.62E-03	3.09E-05	0.00E+00	2.54E-05
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	4.53	8.44E-04	6.75E-04	2.47E-03	1.00E-05	0.00E+00	8.25E-06
Silvex (2,4,5-TP)	93-72-1	3.80	1.58E-04	1.27E-04	4.64E-04	1.88E-06	0.00E+00	1.55E-06
Toxaphene	8001-35-2	5.50	7.94E-03	6.35E-03	2.32E-02	9.44E-05	0.00E+00	7.77E-05
Inorganic Chemicals and Compounds								
Metals								
Aluminum	7429-90-5	NA	1.50E-03	1.50E-03	4.39E-03	2.23E-05	0.00E+00	1.83E-05
Antimony	7440-36-0	NA	1.00E-03	1.00E-03	2.93E-03	1.48E-05	0.00E+00	1.22E-05

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Trifluralin	1582-09-8	5.40E-03	7.25E-05	2.64E-04	7.20E-04	3.08E-05	4.73E-04	5.94E-04	5.14E-04
Triphenylamine	603-34-9	No data	No data	No data	No data	No data	No data	No data	No data
Herbicides and Organochlorinated Pesticides									
2,4,5-T	93-76-5	5.65E-05	7.60E-07	2.77E-06	7.54E-06	3.23E-07	4.95E-06	6.21E-06	5.38E-06
2,4-D and esters	94-75-7	1.59E-05	2.14E-07	7.80E-07	2.12E-06	9.10E-08	1.40E-06	1.75E-06	1.52E-06
4,4'-DDD	72-54-8	3.26E-02	4.38E-04	1.60E-03	4.35E-03	1.86E-04	2.86E-03	3.59E-03	3.10E-03
4,4'-DDE	72-55-9	4.45E-02	5.99E-04	2.18E-03	5.94E-03	2.55E-04	3.90E-03	4.90E-03	4.24E-03
4,4'-DDT	50-29-3	2.90E-02	3.89E-04	1.42E-03	3.86E-03	1.65E-04	2.54E-03	3.19E-03	2.76E-03
Aldrin	309-00-2	3.72E-02	5.01E-04	1.82E-03	4.97E-03	2.13E-04	3.26E-03	4.10E-03	3.55E-03
alpha-BHC	319-84-6	1.55E-04	2.09E-06	7.61E-06	2.07E-05	8.88E-07	1.36E-05	1.71E-05	1.48E-05
beta-BHC	319-85-7	1.68E-04	2.26E-06	8.23E-06	2.24E-05	9.60E-07	1.47E-05	1.85E-05	1.60E-05
Chlordane	57-74-9	2.14E-02	2.87E-04	1.05E-03	2.85E-03	1.22E-04	1.87E-03	2.35E-03	2.03E-03
Delta-BHC	319-86-8	3.40E-04	4.58E-06	1.67E-05	4.54E-05	1.95E-06	2.98E-05	3.74E-05	3.24E-05
Dieldrin	60-57-1	4.59E-03	6.17E-05	2.25E-04	6.12E-04	2.62E-05	4.02E-04	5.05E-04	4.37E-04
Endothall	145-73-3	3.33E-09	4.47E-11	1.63E-10	4.44E-10	1.90E-11	2.92E-10	3.66E-10	3.17E-10
Endrin	72-20-8	1.92E-03	2.58E-05	9.41E-05	2.56E-04	1.10E-05	1.68E-04	2.11E-04	1.83E-04
gamma-BHC (Lindane)	58-89-9	1.29E-04	1.74E-06	6.34E-06	1.73E-05	7.40E-07	1.13E-05	1.42E-05	1.23E-05
Heptachlor	76-44-8	2.56E-03	3.44E-05	1.25E-04	3.41E-04	1.46E-05	2.24E-04	2.81E-04	2.43E-04
Isodrin	465-73-6	No data	No data	No data	No data	No data	No data	No data	No data
Methoxychlor	72-43-5	8.29E-04	1.11E-05	4.06E-05	1.11E-04	4.73E-06	7.26E-05	9.12E-05	7.89E-05
Silvex (2,4,5-TP)	93-72-1	1.56E-04	2.09E-06	7.62E-06	2.08E-05	8.89E-07	1.36E-05	1.71E-05	1.48E-05
Toxaphene	8001-35-2	7.80E-03	1.05E-04	3.82E-04	1.04E-03	4.46E-05	6.83E-04	8.58E-04	7.43E-04
Inorganic Chemicals and Compounds									
Metals									
Aluminum	7429-90-5	1.47E-03	2.48E-05	9.02E-05	2.46E-04	1.05E-05	1.61E-04	2.03E-04	1.40E-04
Antimony	7440-36-0	9.82E-04	1.65E-05	6.01E-05	1.64E-04	7.01E-06	1.08E-04	1.35E-04	9.35E-05

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Arsenic	7440-38-2	NA	2.00E-03	2.00E-03	5.85E-03	2.97E-05	0.00E+00	2.44E-05
Barium	7440-39-3	NA	1.50E-04	1.50E-04	4.39E-04	2.23E-06	0.00E+00	1.83E-06
Beryllium	7440-41-7	NA	1.00E-03	1.00E-03	2.93E-03	1.48E-05	0.00E+00	1.22E-05
Bismuth	7440-69-9	NA	4.00E-04	4.00E-04	1.17E-03	5.94E-06	0.00E+00	4.89E-06
Boron	7440-42-8	NA	8.00E-04	8.00E-04	2.34E-03	1.19E-05	0.00E+00	9.78E-06
Cadmium	7440-43-9	NA	3.40E-03	3.40E-03	9.95E-03	5.05E-05	0.00E+00	4.15E-05
Calcium	7440-70-2	NA	7.00E-04	7.00E-04	2.05E-03	1.04E-05	0.00E+00	8.55E-06
Chromium[f]	18540-29-9	NA	5.51E-03	5.51E-03	1.61E-02	8.18E-05	0.00E+00	6.73E-05
Cobalt	7440-48-4	NA	2.00E-02	2.00E-02	5.85E-02	2.97E-04	0.00E+00	2.44E-04
Copper	7440-50-8	NA	1.00E-02	1.00E-02	2.93E-02	1.48E-04	0.00E+00	1.22E-04
Iron	7439-89-6	NA	2.00E-02	2.00E-02	5.85E-02	2.97E-04	0.00E+00	2.44E-04
Lead	7439-92-1	NA	3.00E-04	3.00E-04	8.78E-04	4.45E-06	0.00E+00	3.67E-06
Lithium	7439-93-2	NA	1.00E-02	1.00E-02	2.93E-02	1.48E-04	0.00E+00	1.22E-04
Magnesium	7439-95-4	NA	5.00E-03	5.00E-03	1.46E-02	7.42E-05	0.00E+00	6.11E-05
Manganese	7439-96-5	NA	4.00E-04	4.00E-04	1.17E-03	5.94E-06	0.00E+00	4.89E-06
Mercury	7439-97-6	NA	NA	No data	No data	No data	No data	No data
Mercury - Hg+2	7487-94-7	NA	5.21E-03	5.21E-03	1.52E-02	7.73E-05	0.00E+00	6.36E-05
Methylmercury	22967-92-6	NA	7.81E-04	7.81E-04	2.28E-03	1.16E-05	0.00E+00	9.54E-06
Molybdenum	7439-98-7	NA	6.00E-03	6.00E-03	1.76E-02	8.91E-05	0.00E+00	7.33E-05
Nickel	7440-02-0	NA	6.00E-03	6.00E-03	1.76E-02	8.91E-05	0.00E+00	7.33E-05
Potassium	7440-09-7	NA	2.00E-02	2.00E-02	5.85E-02	2.97E-04	0.00E+00	2.44E-04
Rhodium	7440-16-6	NA	2.00E-03	2.00E-03	5.85E-03	2.97E-05	0.00E+00	2.44E-05
Selenium	7782-49-2	NA	1.90E-03	1.90E-03	5.56E-03	2.82E-05	0.00E+00	2.32E-05
Silicon	7440-21-3	NA	4.00E-05	4.00E-05	1.17E-04	5.94E-07	0.00E+00	4.89E-07
Silver	7440-22-4	NA	3.00E-03	3.00E-03	8.78E-03	4.45E-05	0.00E+00	3.67E-05
Sodium	7440-23-5	NA	5.50E-02	5.50E-02	1.61E-01	8.17E-04	0.00E+00	6.72E-04

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])							
		Coyote[d]	Burrowing Owl[d]	Red-tailed Hawk[d]	Canada Goose[d]	Spotted Sandpiper[d]	Great Blue Heron[d]	Bald Eagle[d]	Mink[d]
Arsenic	7440-38-2	1.96E-03	3.30E-05	1.20E-04	3.27E-04	1.40E-05	2.15E-04	2.70E-04	1.87E-04
Barium	7440-39-3	1.47E-04	2.48E-06	9.02E-06	2.46E-05	1.05E-06	1.61E-05	2.03E-05	1.40E-05
Beryllium	7440-41-7	9.82E-04	1.65E-05	6.01E-05	1.64E-04	7.01E-06	1.08E-04	1.35E-04	9.35E-05
Bismuth	7440-69-9	3.93E-04	6.60E-06	2.41E-05	6.55E-05	2.81E-06	4.30E-05	5.40E-05	3.74E-05
Boron	7440-42-8	7.85E-04	1.32E-05	4.81E-05	1.31E-04	5.61E-06	8.60E-05	1.08E-04	7.48E-05
Cadmium	7440-43-9	3.34E-03	5.61E-05	2.04E-04	5.57E-04	2.38E-05	3.66E-04	4.59E-04	3.18E-04
Calcium	7440-70-2	6.87E-04	1.16E-05	4.21E-05	1.15E-04	4.91E-06	7.53E-05	9.45E-05	6.55E-05
Chromium[f]	18540-29-9	5.41E-03	9.09E-05	3.31E-04	9.02E-04	3.86E-05	5.93E-04	7.44E-04	5.15E-04
Cobalt	7440-48-4	1.96E-02	3.30E-04	1.20E-03	3.27E-03	1.40E-04	2.15E-03	2.70E-03	1.87E-03
Copper	7440-50-8	9.82E-03	1.65E-04	6.01E-04	1.64E-03	7.01E-05	1.08E-03	1.35E-03	9.35E-04
Iron	7439-89-6	1.96E-02	3.30E-04	1.20E-03	3.27E-03	1.40E-04	2.15E-03	2.70E-03	1.87E-03
Lead	7439-92-1	2.95E-04	4.95E-06	1.80E-05	4.91E-05	2.10E-06	3.23E-05	4.05E-05	2.81E-05
Lithium	7439-93-2	9.82E-03	1.65E-04	6.01E-04	1.64E-03	7.01E-05	1.08E-03	1.35E-03	9.35E-04
Magnesium	7439-95-4	4.91E-03	8.25E-05	3.01E-04	8.18E-04	3.51E-05	5.38E-04	6.75E-04	4.68E-04
Manganese	7439-96-5	3.93E-04	6.60E-06	2.41E-05	6.55E-05	2.81E-06	4.30E-05	5.40E-05	3.74E-05
Mercury	7439-97-6	No data	No data	No data	No data	No data	No data	No data	No data
Mercury - Hg+2	7487-94-7	5.11E-03	8.59E-05	3.13E-04	8.52E-04	3.65E-05	5.60E-04	7.03E-04	4.87E-04
Methylmercury	22967-92-6	7.67E-04	1.29E-05	4.70E-05	1.28E-04	5.48E-06	8.40E-05	1.05E-04	7.30E-05
Molybdenum	7439-98-7	5.89E-03	9.90E-05	3.61E-04	9.82E-04	4.21E-05	6.45E-04	8.10E-04	5.61E-04
Nickel	7440-02-0	5.89E-03	9.90E-05	3.61E-04	9.82E-04	4.21E-05	6.45E-04	8.10E-04	5.61E-04
Potassium	7440-09-7	1.96E-02	3.30E-04	1.20E-03	3.27E-03	1.40E-04	2.15E-03	2.70E-03	1.87E-03
Rhodium	7440-16-6	1.96E-03	3.30E-05	1.20E-04	3.27E-04	1.40E-05	2.15E-04	2.70E-04	1.87E-04
Selenium	7782-49-2	1.87E-03	3.14E-05	1.14E-04	3.11E-04	1.33E-05	2.04E-04	2.57E-04	1.78E-04
Silicon	7440-21-3	3.93E-05	6.60E-07	2.41E-06	6.55E-06	2.81E-07	4.30E-06	5.40E-06	3.74E-06
Silver	7440-22-4	2.95E-03	4.95E-05	1.80E-04	4.91E-04	2.10E-05	3.23E-04	4.05E-04	2.81E-04
Sodium	7440-23-5	5.40E-02	9.08E-04	3.31E-03	9.00E-03	3.86E-04	5.92E-03	7.43E-03	5.14E-03

Table C2-4 Bioaccumulation Factors for Accumulation of COPCs and ROPCs from Water by Mammals and Birds

Constituent of Potential Concern	CAS Registry Number	Log K_{ow} [a]	Mammal Ba[b] ([mg/kg tissue] / [mg ingested /day])	Bird Ba[c] ([mg/kg tissue] / [mg ingested /day])	Bioaccumulation Factor (BAF-T_w) ([mg/kg tissue]/[mg/L water])			
					Mule Deer[d]	Mourning Dove[d]	Great Basin Pocket Mouse[d]	Western Meadow-lark[d]
Strontium	7440-24-6	NA	3.00E-04	3.00E-04	8.78E-04	4.45E-06	0.00E+00	3.67E-06
Tantalum	7440-25-7	NA	6.00E-04	6.00E-04	1.76E-03	8.91E-06	0.00E+00	7.33E-06
Thallium	7440-28-0	NA	4.00E-02	4.00E-02	1.17E-01	5.94E-04	0.00E+00	4.89E-04
Tin	7440-31-5	NA	8.00E-02	8.00E-02	2.34E-01	1.19E-03	0.00E+00	9.78E-04
Tungsten	7440-33-7	NA	4.50E-02	4.50E-02	1.32E-01	6.68E-04	0.00E+00	5.50E-04
Uranium	7440-61-1	NA	2.00E-04	2.00E-04	5.85E-04	2.97E-06	0.00E+00	2.44E-06
Vanadium	7440-62-2	NA	2.50E-03	2.50E-03	7.32E-03	3.71E-05	0.00E+00	3.06E-05
Yttrium	7440-65-5	NA	3.00E-04	3.00E-04	8.78E-04	4.45E-06	0.00E+00	3.67E-06
Zinc	7440-66-6	NA	1.00E-01	1.00E-01	2.93E-01	1.48E-03	0.00E+00	1.22E-03
Zirconium	7440-67-7	NA	5.50E-03	5.50E-03	1.61E-02	8.17E-05	0.00E+00	6.72E-05
Non-metals and Anions								
Ammonia/Ammonium	7664-41-7	NA	1.95E-02	1.95E-02	5.71E-02	2.90E-04	0.00E+00	2.38E-04
Bromide	24959-67-9	NA	2.50E-02	2.50E-02	7.32E-02	3.71E-04	0.00E+00	3.06E-04
Chloride	16887-00-6	NA	8.00E-02	8.00E-02	2.34E-01	1.19E-03	0.00E+00	9.78E-04
Cyanide	57-12-5	NA	1.95E-02	1.95E-02	5.71E-02	2.90E-04	0.00E+00	2.38E-04
Fluoride	16984-48-8	NA	1.50E-01	1.50E-01	4.39E-01	2.23E-03	0.00E+00	1.83E-03
Hydroxide	14280-30-9	NA	NA	NA	No data	No data	No data	No data
Iodine	7553-56-2	NA	7.00E-03	7.00E-03	2.05E-02	1.04E-04	0.00E+00	8.55E-05
Nitrate	14797-55-8	NA	7.50E-02	7.50E-02	2.19E-01	1.11E-03	0.00E+00	9.17E-04
Nitrite	14797-65-0	NA	7.50E-02	7.50E-02	2.19E-01	1.11E-03	0.00E+00	9.17E-04
Phosphate	14265-44-2	NA	5.50E-02	5.50E-02	1.61E-01	8.17E-04	0.00E+00	6.72E-04
Phosphorus	7723-14-0	NA	5.50E-02	5.50E-02	1.61E-01	8.17E-04	0.00E+00	6.72E-04
Sulfate	14808-79-8	NA	1.00E-01	1.00E-01	2.93E-01	1.48E-03	0.00E+00	1.22E-03
Total Sulfur	63705-05-5	NA	1.00E-01	1.00E-01	2.93E-01	1.48E-03	0.00E+00	1.22E-03
Criteria Pollutants								
Carbon monoxide	630-08-0	NA	1.95E-02	1.95E-02	5.71E-02	2.90E-04	0.00E+00	2.38E-04