

DATA ENTRY SHEET
Chloroform
Adult Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	
			Chemical	
67663			8.00E-05	Chloroform

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	9	350

END

CHEMICAL PROPERTIES SHEET
Chloroform
Adult Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
1.04E-01	1.00E-05	3.66E-03	25	6,988	334.32	536.40	5.3E-06	3.0E-01	119.38

END

INTERMEDIATE CALCULATIONS SHEET
Chloroform
Adult Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	4.00E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_V^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,471	2.70E-03	1.13E-01	1.78E-04	8.11E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	4.00E-01	1.25	8.33E+01	8.11E-03	5.00E+03	8.35E+08	9.03E-04	3.61E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.3E-06	3.0E-01

END

RESULTS SHEET
Chloroform
Adult Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.4E-10	3.5E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Carbon Tetrachloride
Adult Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
56235			5.40E-04	Carbon tetrachloride

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	9	350

END

DATA ENTRY SHEET
Carbon Tetrachloride
Adult Average Exposure for CTP-SGP-35

CHEMICAL PROPERTIES SHEET
Carbon Tetrachloride
Adult Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	3.03E-02	25	7,127	349.90	556.60	4.2E-05	4.0E-02	153.82

END

INTERMEDIATE CALCULATIONS SHEET
Carbon Tetrachloride
Adult Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{fe} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{rg} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	3.48E+00	3.39E+04

Area of enclosed space below grade, A_E (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,778	2.21E-02	9.26E-01	1.78E-04	6.08E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	3.48E+00	1.25	8.33E+01	6.08E-03	5.00E+03	7.89E+11	7.45E-04	2.59E-03

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
4.2E-05	4.0E-02

END

RESULTS SHEET
Carbon Tetrachloride
Adult Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.3E-08	1.9E-05

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Tetrachloroethene
Adult Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
127184			1.20E-04	Tetrachloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	9	350

END

CHEMICAL PROPERTIES SHEET
Tetrachloroethene
Adult Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET
Tetrachloroethene
Adult Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.33E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,472	1.25E-02	5.23E-01	1.78E-04	5.62E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^1)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.33E-01	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	7.04E-04	5.87E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.9E-06	3.5E-02

END

RESULTS SHEET
Tetrachloroethene
Adult Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
4.3E-10	4.8E-06

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Trichloroethene
Adult Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
79016			1.50E-04	Trichloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	9	350

END

CHEMICAL PROPERTIES SHEET
 Trichloroethene
 Adult Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

INTERMEDIATE CALCULATIONS SHEET
Trichloroethene
Adult Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{le} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. (µg/m ³)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.25E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm·m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm·s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,458	7.29E-03	3.05E-01	1.78E-04	6.16E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m ³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m ³)
15	8.25E-01	1.25	8.33E+01	6.16E-03	5.00E+03	5.57E+11	7.52E-04	6.20E-04

Unit risk factor, URF (µg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)
2.0E-06	6.0E-01

END

RESULTS SHEET
Trichloroethene
Adult Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.5E-10	3.0E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Chloroform
Adult Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
67663			8.00E-05	Chloroform

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	24	350

END

CHEMICAL PROPERTIES SHEET
Chloroform
Adult Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
1.04E-01	1.00E-05	3.66E-03	25	6,988	334.32	536.40	5.3E-06	3.0E-01	119.38

END

INTERMEDIATE CALCULATIONS SHEET
Chloroform
Adult Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{ie} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	4.00E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,471	2.70E-03	1.13E-01	1.78E-04	8.11E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe')$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	4.00E-01	1.25	8.33E+01	8.11E-03	5.00E+03	8.35E+08	9.03E-04	3.61E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.3E-06	3.0E-01

END

RESULTS SHEET
Chloroform
Adult Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
6.3E-10	9.2E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Carbon Tetrachloride
Adult Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
56235			5.40E-04	Carbon tetrachloride

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	24	350

END

CHEMICAL PROPERTIES SHEET
Carbon Tetrachloride
Adult Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	3.03E-02	25	7,127	349.90	556.60	4.2E-05	4.0E-02	153.82

END

INTERMEDIATE CALCULATIONS SHEET
Carbon Tetrachloride
Adult Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	3.48E+00	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,778	2.21E-02	9.26E-01	1.78E-04	6.08E-03	167.88

Convection path length, L_o (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe')$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	3.48E+00	1.25	8.33E+01	6.08E-03	5.00E+03	7.89E+11	7.45E-04	2.59E-03

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
4.2E-05	4.0E-02

END

RESULTS SHEET
Carbon Tetrachloride
Adult Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.6E-08	5.0E-05

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Tetrachloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
127184			1.20E-04	Tetrachloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	24	350

END

CHEMICAL PROPERTIES SHEET
Tetrachloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET
Tetrachloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.33E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,472	1.25E-02	5.23E-01	1.78E-04	5.62E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.33E-01	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	7.04E-04	5.87E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.9E-06	3.5E-02

END

RESULTS SHEET
Tetrachloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.1E-09	1.3E-05

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Trichloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data			
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)
			Chemical
79016			1.50E-04
			Trichloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	24	350

END

CHEMICAL PROPERTIES SHEET
 Trichloroethene
 Adult Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

INTERMEDIATE CALCULATIONS SHEET
Trichloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. (µg/m ³)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.25E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,458	7.29E-03	3.05E-01	1.78E-04	6.16E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m ³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m ³)
15	8.25E-01	1.25	8.33E+01	6.16E-03	5.00E+03	5.57E+11	7.52E-04	6.20E-04

Unit risk factor, URF (µg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)
2.0E-06	6.0E-01

END

RESULTS SHEET
Trichloroethene
Adult Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
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4.1E-10	7.9E-07
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MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Chloroform
Child Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
67663			8.00E-05	Chloroform

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
 Chloroform
 Child Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
1.04E-01	1.00E-05	3.66E-03	25	6,988	334.32	536.40	5.3E-06	3.0E-01	119.38

END

INTERMEDIATE CALCULATIONS SHEET
Chloroform
Child Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	4.00E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,471	2.70E-03	1.13E-01	1.78E-04	8.11E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	4.00E-01	1.25	8.33E+01	8.11E-03	5.00E+03	8.35E+08	9.03E-04	3.61E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.3E-06	3.0E-01

END

RESULTS SHEET
Chloroform
Child Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.6E-10	2.3E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Carbon Tetrachloride
Child Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
56235			5.40E-04	Carbon tetrachloride

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
Carbon Tetrachloride
Child Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	3.03E-02	25	7,127	349.90	556.60	4.2E-05	4.0E-02	153.82

END

INTERMEDIATE CALCULATIONS SHEET
Carbon Tetrachloride
Child Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. (µg/m ³)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	3.48E+00	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm·m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_V^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,778	2.21E-02	9.26E-01	1.78E-04	6.08E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m ³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m ³)
15	3.48E+00	1.25	8.33E+01	6.08E-03	5.00E+03	7.89E+11	7.45E-04	2.59E-03

Unit risk factor, URF (µg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)
4.2E-05	4.0E-02

END

RESULTS SHEET
Carbon Tetrachloride
Child Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
8.9E-09	1.2E-05

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Tetrachloroethene
Child Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_p ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
127184			1.20E-04	Tetrachloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
Tetrachloroethene
Child Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET
Tetrachloroethene
Child Average Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{ie} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{rg} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.33E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_{eff}^v (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,472	1.25E-02	5.23E-01	1.78E-04	5.62E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.33E-01	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	7.04E-04	5.87E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.9E-06	3.5E-02

END

RESULTS SHEET
Tetrachloroethene
Child Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.8E-10	3.2E-06

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Trichloroethene
Child Average Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
79016			1.50E-04	Trichloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
 Trichloroethene
 Child Average Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

INTERMEDIATE CALCULATIONS SHEET
Trichloroethene
Child Average Exposure for CTP-SGP-35

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.25E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,458	7.29E-03	3.05E-01	1.78E-04	6.16E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.25E-01	1.25	8.33E+01	6.16E-03	5.00E+03	5.57E+11	7.52E-04	6.20E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
2.0E-06	6.0E-01

END

RESULTS SHEET
Trichloroethene
Child Average Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.0E-10	2.0E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Chloroform
Child Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
67663			8.00E-05	Chloroform

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
 Chloroform
 Child Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
1.04E-01	1.00E-05	3.66E-03	25	6,988	334.32	536.40	5.3E-06	3.0E-01	119.38

END

INTERMEDIATE CALCULATIONS SHEET
Chloroform
Child Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{1e} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{rg} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	4.00E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_{eff}^V (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,471	2.70E-03	1.13E-01	1.78E-04	8.11E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	4.00E-01	1.25	8.33E+01	8.11E-03	5.00E+03	8.35E+08	9.03E-04	3.61E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.3E-06	3.0E-01

END

RESULTS SHEET
Chloroform
Child Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.6E-10	2.3E-07

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Carbon Tetrachloride
Child Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
56235			5.40E-04	Carbon tetrachloride

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
Carbon Tetrachloride
Child Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_c ($^\circ\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.80E-02	8.80E-06	3.03E-02	25	7,127	349.90	556.60	4.2E-05	4.0E-02	153.82

END

INTERMEDIATE CALCULATIONS SHEET
Carbon Tetrachloride
Child Reasonable Maximum Exposure for CTP-SGP-35

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{ie} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	3.48E+00	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	7,778	2.21E-02	9.26E-01	1.78E-04	6.08E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D^{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	3.48E+00	1.25	8.33E+01	6.08E-03	5.00E+03	7.89E+11	7.45E-04	2.59E-03

Unit risk factor, URF ($\mu\text{g}/\text{m}^3\text{-y}^{-1}$)	Reference conc., RfC (mg/m ³)
4.2E-05	4.0E-02

END

RESULTS SHEET
Carbon Tetrachloride
Child Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
8.9E-09	1.2E-05

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Tetrachloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184			1.20E-04	Tetrachloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
Tetrachloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	5.9E-06	3.5E-02	165.83

END

INTERMEDIATE CALCULATIONS SHEET
Tetrachloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{Te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{rs} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.33E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	9,472	1.25E-02	5.23E-01	1.78E-04	5.62E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^1)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.33E-01	1.25	8.33E+01	5.62E-03	5.00E+03	7.73E+12	7.04E-04	5.87E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m ³)
5.9E-06	3.5E-02

END

RESULTS SHEET
Tetrachloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.8E-10	3.2E-06

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET
Trichloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 1/21/05)

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
79016			1.50E-04	Trichloroethylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	182.88	18			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	6	350

END

CHEMICAL PROPERTIES SHEET
 Trichloroethene
 Child Reasonable Maximum Exposure for CTP-SGP-35

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
7.90E-02	9.10E-06	1.03E-02	25	7,505	360.36	544.20	2.0E-06	6.0E-01	131.39

END

INTERMEDIATE CALCULATIONS SHEET
Trichloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{te} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm ³ /s)
167.88	0.280	#N/A	#N/A	#N/A	1.00E-08	4,000	8.25E-01	3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,Ts}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{Ts} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H'_{Ts} (unitless)	Vapor viscosity at ave. soil temperature, μ_{Ts} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm ² /s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,458	7.29E-03	3.05E-01	1.78E-04	6.16E-03	167.88

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	8.25E-01	1.25	8.33E+01	6.16E-03	5.00E+03	5.57E+11	7.52E-04	6.20E-04

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RFC (mg/m ³)
2.0E-06	6.0E-01

END

RESULTS SHEET
Trichloroethene
Child Reasonable Maximum Exposure for CTP-SGP-35

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.0E-10	2.0E-07

MESSAGE SUMMARY BELOW:

END