

Simple hydrogeological calculations

(These are not specific to, or required in, the Remedial Targets Methodology)

Parameter	symbol	unit	justification
Hydraulic conductivity	K	8.10E-05 m/s	
Hydraulic gradient	i	9.80E-03 unitless	
Effective porosity of aquifer	n	1.82E-01 fraction	
Thickness of saturated aquifer	b	1.90E+02 m	
Width of aquifer perpendicular to flow	w	1.00E+01 m	
Distance to receptor	x	1.50E+03 m	
Density of stratum	ρ	1.70E+00 g/cm ³	
Soil-water partition co-efficient	Kd	3.16E+04 l/kg	
Retardation factor of pollutant	R	295378.5836	

Groundwater flow velocity	v(GW)	4.36E-06 m/s	3.77E-01 m/day	1.38E+02 m/year
Time for groundwater to reach receptor	t(GW)	3.44E+08 seconds	3.98E+03 days	1.09E+01 years
Rate of groundwater flow through aquifer	Q	1.51E-03 m ³ /s	1.30E+02 m ³ /day	4.76E+04 m ³ /year
Contaminant flow velocity	v(contam)	1.48E-11 m/s	1.28E-06 m/day	4.66E-04 m/year
Time for contaminant to reach receptor	t(contam)	1.02E+14 seconds	1.18E+09 days	3.22E+06 years

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Hydraulic conductivity	K	8.10E-05 m/s	
Hydraulic gradient	i	9.80E-03 unitless	
Effective porosity of aquifer	n	1.82E-01 fraction	
Thickness of saturated aquifer	b	1.90E+02 m	
Width of aquifer perpendicular to flow	w	1.00E+01 m	
Distance to receptor	x	1.50E+03 m	
Density of stratum	ρ	1.70E+00 g/cm ³	
Soil-water partition co-efficient	Kd	0.00E+00 l/kg	
Retardation factor of pollutant	R	1	

Groundwater flow velocity	v(GW)	4.36E-06 m/s	3.77E-01 m/day	1.38E+02 m/year
Time for groundwater to reach receptor	t(GW)	3.44E+08 seconds	3.98E+03 days	1.09E+01 years
Rate of groundwater flow through aquifer	Q	1.51E-03 m ³ /s	1.30E+02 m ³ /day	4.76E+04 m ³ /year
Contaminant flow velocity	v(contam)	4.36E-06 m/s	3.77E-01 m/day	1.38E+02 m/year
Time for contaminant to reach receptor	t(contam)	3.44E+08 seconds	3.98E+03 days	1.09E+01 years

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Parameter	symbol	unit	justification
Hydraulic conductivity	K	8.10E-05 m/s	
Hydraulic gradient	i	7.00E-03 unitless	
Effective porosity of aquifer	n	1.82E-01 fraction	
Thickness of saturated aquifer	b	5.60E+01 m	
Width of aquifer perpendicular to flow	w	8.00E+01 m	
Distance to receptor	x	8.50E+02 m	
Density of stratum	ρ	1.70E+00 g/cm ³	
Soil-water partition co-efficient	Kd	0.00E+00 l/kg	
Retardation factor of pollutant	R	1	

Groundwater flow velocity	v(GW)	3.12E-06 m/s	2.69E-01 m/day	9.82E+01 m/year
Time for groundwater to reach receptor	t(GW)	2.73E+08 seconds	3.16E+03 da s	
Rate of groundwater flow through aquifer	Q	2.54E-03 m ³ /s	2.19E+02 m ³ /day	8.01E+04 m ³ /year
			3.16E+03 days	8.65E+00 years

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Hydraulic conductivity	K	8.10E-05 m/s	
Hydraulic gradient	i	9.80E-03 unitless	
Effective porosity of aquifer	n	1.82E-01 fraction	
Thickness of saturated aquifer	b	2.10E+01 m	
Width of aquifer perpendicular to flow	w	8.00E+01 m	
Distance to receptor	x	1.70E+03 m	
Density of stratum	ρ	1.70E+00 g/cm ³	
Soil-water partition co-efficient	Kd	0.00E+00 l/kg	
Retardation factor of pollutant	R	1	

Groundwater flow velocity	v(GW)	4.36E-06 m/s	3.77E-01 m/day	1.38E+02 m/year
Time for groundwater to reach receptor	t(GW)	3.90E+08 seconds	4.51E+03 days	1.24E+01 years
Rate of groundwater flow through aquifer	Q	1.33E-03 m ³ /s	1.15E+02 m ³ /day	4.21E+04 m ³ /year
Contaminant flow velocity	v(contam)	4.36E-06 m/s	3.77E-01 m/day	1.38E+02 m/year
Time for contaminant to reach receptor	t(contam)	3.90E+08 seconds	4.51E+03 days	1.24E+01 years