

Calculation Settings

Number of iterations: 1001  
Results calculated using sampled PDFs  
Full Calculation

Clay Liner:  
Unretarded values used for simulation  
No Biodegradation

Unsaturated Pathway:  
Retarded values used for simulation  
Biodegradation

Saturated Vertical Pathway:  
No Vertical Pathway

Aquifer Pathway:  
Retarded values used for simulation  
No Biodegradation

Timeslices at: 30, 100, 300, 1000

Decline in Contaminant Concentration in Leachate

|                        |              |
|------------------------|--------------|
| Iron                   | Non-Volatile |
| c (kg/l): 0            | m (kg/l): 0  |
| Manganese              | Non-Volatile |
| c (kg/l): 0            | m (kg/l): 0  |
| Phenols                | Volatile     |
| Half life (years): 0.3 |              |

Contaminant Half-lives (years)

|                      |                |
|----------------------|----------------|
| Unsaturated Pathway: |                |
| Iron                 | SINGLE(1e+009) |
| Manganese            | SINGLE(1e+009) |
| Phenols              | SINGLE(0.3)    |

Background Concentrations of Contaminants

Justification for Contaminant Properties  
Unjustified value

All units in milligrams per litre

Phase: Phase 1

Infiltration Information

|                                                     |             |
|-----------------------------------------------------|-------------|
| Cap design infiltration (mm/year):                  | SINGLE(100) |
| Infiltration to waste (mm/year):                    | SINGLE(487) |
| End of filling (years from start of waste deposit): | 10          |

Justification for Specified Infiltration  
Unjustified   value

Duration of management control (years from the start of waste disposal): 10

Cell dimensions

|                                                         |                              |
|---------------------------------------------------------|------------------------------|
| Cell width (m):                                         | 80                           |
| Cell length (m):                                        | 120                          |
| Cell top area (ha):                                     | 1.08                         |
| Cell base area (ha):                                    | 0.96                         |
| Number of cells:                                        | 1                            |
| Total base area (ha):                                   | 0.96                         |
| Total top area (ha):                                    | 1.08                         |
| Head of Leachate when surface water breakout occurs (m) | SINGLE(17)                   |
| Waste porosity (fraction)                               | TRIANGULAR(0.639,0.64,0.642) |
| Final waste thickness (m):                              | SINGLE(20)                   |
| Field capacity (fraction):                              | TRIANGULAR(0.2,0.3,0.35)     |
| Waste dry density (kg/l)                                | TRIANGULAR(1.58,1.59,1.6)    |

Justification for Landfill Geometry  
Unjustified   value

Source concentrations of contaminants

All units in milligrams per litre

Declining source term

|           |                                                                                            |
|-----------|--------------------------------------------------------------------------------------------|
| Iron      | LOGTRIANGULAR(0.1,0.226,0.45)<br><i>Data are spot measurements of Leachate Quality</i>     |
| Manganese | LOGTRIANGULAR(0.0025,0.025,0.13)<br><i>Data are spot measurements of Leachate Quality</i>  |
| Phenols   | LOGTRIANGULAR(0.002,0.0073,0.047)<br><i>Data are spot measurements of Leachate Quality</i> |

Justification for Species Concentration in Leachate  
Unjustified   value

Drainage Information

|                              |             |
|------------------------------|-------------|
| Fixed Head.                  |             |
| Head on EBS is given as (m): | SINGLE(0.1) |

Justification for Specified Head  
Unjustified   value

Barrier Information

There is no barrier

Justification for Engineered Barrier Type  
Unjustified   value

HWR pathway parameters

Modelled as unsaturated pathway

Pathway length (m): UNIFORM(3,6)

Flow Model: porous medium

Pathway moisture content (fraction): SINGLE(0.24)

Pathway Density (kg/l): SINGLE(1.86)

Justification for Unsat Zone Geometry

Unjustified   value

Pathway hydraulic conductivity values (m/s): SINGLE(1e-007)

Justification for Unsat Zone Hydraulics Properties

Unjustified   value

Pathway longitudinal dispersivity (m): SINGLE(0.5)

Justification for Unsat Zone Dispersion Properties

Unjustified   value

Retardation parameters for HWR pathway

Modelled as unsaturated pathway

Uncertainty in Kd (l/kg):

Iron LOGUNIFORM(1,40000)

Manganese LOGUNIFORM(3,810)

Phenols UNIFORM(7,117)

Justification for Kd Values by Species

Unjustified   value

Aquifer Pathway Dimensions for Phase

Pathway length (m): UNIFORM(70,170)

Pathway width (m): SINGLE(80)

pathway parameters

No Vertical Pathway

HWR pathway parameters

Modelled as aquifer pathway.

Mixing zone (m): SINGLE(3)

Justification for Aquifer Geometry

Unjustified   value

Pathway regional gradient (-): SINGLE(0.038)

Pathway hydraulic conductivity values (m/s): SINGLE(1.44e-005)

Pathway porosity (fraction): SINGLE(0.3)

Justification for Aquifer Hydraulics Properties

Unjustified   value

Pathway longitudinal dispersivity (m): SINGLE(10)

Pathway transverse dispersivity (m): SINGLE(1)

Justification for Aquifer Dispersion Details

Unjustified   value

Retardation parameters for HWR pathway

Modelled as aquifer pathway.

Uncertainty in Kd (l/kg):

Iron LOGUNIFORM(1,40000)

Manganese LOGUNIFORM(3,810)

Phenols UNIFORM(7,17)

Justification for Aquifer Kd Values by Species

Unjustified   value

Pathway Density (kg/l): SINGLE(2.4)