

# MIGRATEv10

Version 10.00  
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 GAEA Technologies Ltd., R.K. Rowe and J.R. Booker

## Case 5: Demonstrate Effects of Integration

### Layer Properties

Layer	Thickness	Sublayers	Dry Density	Porosity	Distribution Coefficient	Half-Life
Layer 1	4 m	2	0 g/cm <sup>3</sup>	0.25	0 mL/g	0 year
Layer 2	0.1 m	1	0 g/cm <sup>3</sup>	0.3	0 mL/g	0 year
Layer 3	3 m	2	0 g/cm <sup>3</sup>	0.25	0 mL/g	0 year
Layer 4	1 m	1	0 g/cm <sup>3</sup>	0.3	0 mL/g	0 year
Layer 5	2 m	2	0 g/cm <sup>3</sup>	0.25	0 mL/g	0 year
Layer 6	2 m	2	0 g/cm <sup>3</sup>	0.3	0 mL/g	0 year
Layer 7	8 m	2	0 g/cm <sup>3</sup>	0.25	0 mL/g	0 year

Layer	Vertical Diffusion	Horizontal Diffusion	Vertical Velocity	Horizontal Velocity	Sink Removal	Concentration
Layer 1	0.019 m <sup>2</sup> /a	0.019 m <sup>2</sup> /a	0.03 m/a	0 m/a	0 m/a	0 mg/L
Layer 2	0.32 m <sup>2</sup> /a	3.2 m <sup>2</sup> /a	0.03 m/a	0.96 m/a	0 m/a	0 mg/L
Layer 3	0.019 m <sup>2</sup> /a	0.019 m <sup>2</sup> /a	0.03 m/a	0 m/a	0 m/a	0 mg/L
Layer 4	30.200001 m <sup>2</sup> /a	302.299988 m <sup>2</sup> /a	0.03 m/a	9.07 m/a	0 m/a	0 mg/L
Layer 5	0.019 m <sup>2</sup> /a	0.019 m <sup>2</sup> /a	0.014 m/a	0 m/a	0 m/a	0 mg/L
Layer 6	1 m <sup>2</sup> /a	10 m <sup>2</sup> /a	0.014 m/a	0.3 m/a	0 m/a	0 mg/L
Layer 7	0.019 m <sup>2</sup> /a	0.019 m <sup>2</sup> /a	0.013 m/a	0 m/a	0 m/a	0 mg/L

### Boundary Conditions

#### Finite Mass Top Boundary

	Cell 1
Offset	0 m
Surface Width	575 m
Base Width	575 m
Initial Concentration	1500 mg/L
Source Half-Life	0 year
Waste Thickness	6.875 m
Waste Density	600 kg/m <sup>3</sup>
Percentage of Mass	0.02
Volume Leachate Collected	0 m/a
Reference Height of Leachate	0

#### Aquifer Bottom Boundary

Base Thickness	3 m
Base Half-Life	0 year
Base Porosity	0.001
Sink Removal	0 m/a
Outflow Velocity	2.49 m/a
Dispersion Coefficient	83.059998 m <sup>2</sup> /a

Base Integration Width	4000 m
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### Laplace Transform Parameters

TAU	7
N	11
SIG	0
RNU	1

### Gauss Integration Parameters

Integration Level	Normal
Subinterval Size	0.0347826086956522
Number of Subintervals	12
Number of Sample Points per Step	0
Total Width of Integration	0.417391304347826
Total Number of Integration Points	480

### Calculated Concentrations at Selected Depths, Lateral Distances and Times

Time year	Distance m	Depth m	Concentration mg/L
80	387.5	0.00000E+00	-1.33750E-01
		2.00000E+00	-3.11599E-01
		4.00000E+00	-4.40828E-01
		4.10000E+00	-4.37854E-01
		5.60000E+00	-7.75533E-01
		7.10000E+00	5.36812E+02
		8.10000E+00	5.38151E+02
		9.10000E+00	3.14859E+02
		1.01000E+01	3.85103E+01
		1.11000E+01	3.30245E+01
		1.21000E+01	3.07909E+01
		1.61000E+01	1.06199E-02
		2.01000E+01	3.68781E-03

Total Mass into Soil	Total Mass into Base	Velocity Transport	Mass in Base -WY/2 to +WY/2
4.66670E+05	-3.98108E-02	-1.94375E-02	1.85019E-02

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