

Introduction to WASP Toxi

- Lake Example
- River Example

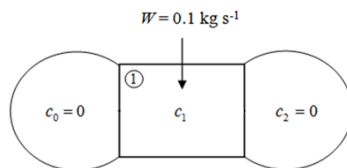
Lake Example

I1DISP Default Values

Lake Example

$$A = 20 \text{ m}^2 \quad L = 1000 \text{ m} \quad W = 0.1 \text{ kg/s}$$

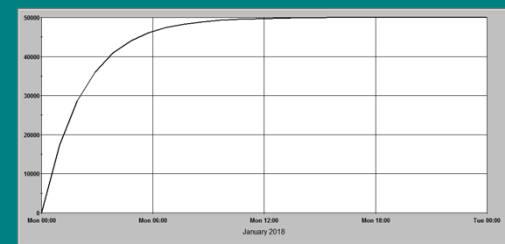
$$k = 10^{-4} \text{ s}^{-1}$$



$$C = \frac{W}{kV}, \text{ kg/m}^3 = 0.05 \text{ kg/m}^3$$

$$= 50 \text{ mg/L} = 50,000 \text{ ug/L}$$

Lake Example – WASP Toxi



River Examples

Examples 3.2 – 3.3

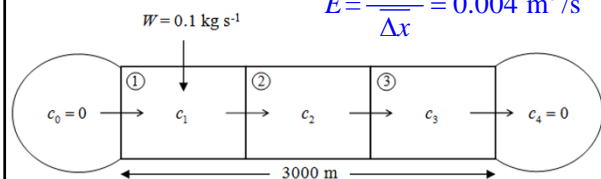
Example 3.2 - Summary

$$A = 20 \text{ m}^2 \quad L = 3000 \text{ m} \quad u = 0.1 \text{ m/s}$$

$$E = 0.2 \text{ m}^2/\text{s} \quad \Delta x = 1000 \text{ m} \quad W = 0.1 \text{ kg/s}$$

$$k = 10^{-4} \text{ s}^{-1} \quad Q = uA = 2 \text{ m}^3/\text{s}$$

$$\bar{E} = \frac{E \cdot A}{\Delta x} = 0.004 \text{ m}^3/\text{s}$$



Example 3.2 – Solution



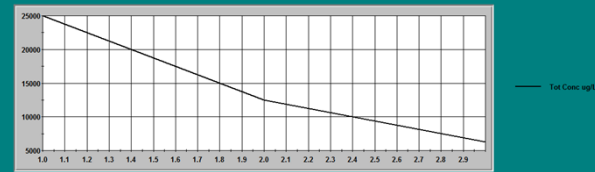
$$c_1 = 0.02496 \text{ kg/m}^3 \quad \text{or} \quad c_1 = 24.96 \text{ mg/L}$$

$$c_2 = 0.01249 \text{ kg/m}^3 \quad \text{or} \quad c_2 = 12.49 \text{ mg/L}$$

$$c_3 = 0.00624 \text{ kg/m}^3 \quad \text{or} \quad c_3 = 6.24 \text{ mg/L}$$

	Tot Conc ug/L (1) X	Tot Conc ug/L (1) Y
1	1.00	24962.56
2	2.00	12487.51
3	3.00	6243.76

Example 3.2 – WASP Toxi



	Tot Conc ug/L (1) X	Tot Conc ug/L (1) Y
1	1.00	24962.56
2	2.00	12487.51
3	3.00	6243.76

Example 3.3 - Summary

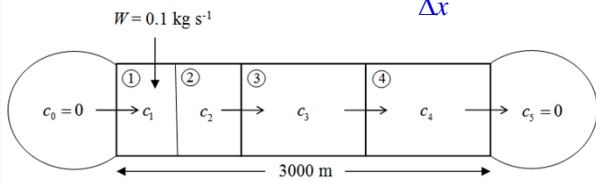


$$A = 20 \text{ m}^2 \quad L = 3000 \text{ m} \quad u = 0.1 \text{ m/s}$$

$$E = 0.0 \text{ m}^2/\text{s} \quad \Delta x = 1000 \text{ m} \quad W = 0.1 \text{ kg/s}$$

$$k = 10^{-4} \text{ s}^{-1} \quad Q = uA = 2 \text{ m}^3/\text{s}$$

$$\bar{E} = \frac{E \cdot A}{\Delta x} = 0 \text{ m}^3/\text{s}$$



Example 3.3 – Analytical Solution



$$c_1 = 0.033 \text{ kg/m}^3 \quad \text{or} \quad c_1 = 33 \text{ mg/L}$$

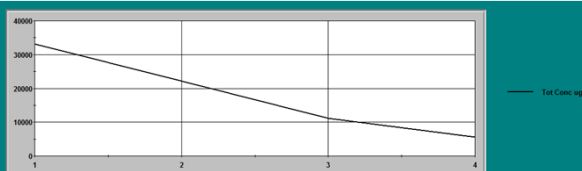
$$c_2 = 0.022 \text{ kg/m}^3 \quad \text{or} \quad c_2 = 22 \text{ mg/L}$$

$$c_3 = 0.011 \text{ kg/m}^3 \quad \text{or} \quad c_3 = 11 \text{ mg/L}$$

$$c_4 = 0.0056 \text{ kg/m}^3 \quad \text{or} \quad c_3 = 5.6 \text{ mg/L}$$

	Tot Conc ug/L (1) X	Tot Conc ug/L (1) Y
1	1.00	33215.26
2	2.00	22153.33
3	3.00	11085.88
4	4.00	5542.94

Example 3.3 – WASP Toxi



	Tot Conc ug/L (1) X	Tot Conc ug/L (1) Y
1	1.00	33215.26
2	2.00	22153.33
3	3.00	11085.88
4	4.00	5542.94

Thank you

Presented by
Assoc. Prof. Dr. Teh Su Yean | School of Mathematical Sciences