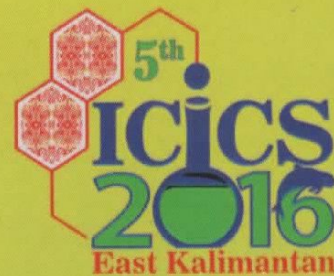


The 5th International Conference of Indonesian Chemical Society



Innovative Chemistry Research for Biological, Geological and Marine Resources in Indonesia



Samarinda, 30 - 31 August 2016
Swiss-Belhotel Borneo
East Kalimantan



Education Agency of
East Kalimantan



Department of Chemistry



Indonesian Chemical Society
East Kalimantan



DETERMINATION OF DISTRIBUTION HEAVY METAL ION Pb AND Cu ON WATER AND SEDIMENT IN THE REGION OF DELTA MAHAKAM ESTUARY, EAST BORNEO USING 3-DIMENSION NUMERIC MODEL

Muthia Rosalya^{1*}, Bohari Yusuf¹, Idris Mandang²

¹Department of Chemistry, Faculty of Mathematics and Natural Sciences, Mulawarman University
Samarinda 75123 East Borneo, Indonesia

²Department of Physics, Faculty of Mathematics and Natural Sciences, Mulawarman University
Samarinda 75123 East Borneo, Indonesia

*Email: muthia.rosalya@gmail.com

Abstract

The research on determination of heavy metal ions pollutant distribution of Pb and Cu in water and sediment inside waters of Delta Mahakam Estuary Kalimantan Timur, by using the water quality model has been conducted. The determination of physical and chemical parameters as supporting data and determination of the concentration of heavy metals ion in water and sediment has been done. Concentration of heavy metals ion was measured using Atomic Absorption Spectrophotometer. Numeric 3-Dimension model would be applied to simulate the dynamic of Delta Mahakam Estuary waters. The result of verification data was received from secondary data to get output of model simulation. The results of research showed the existence of suitability between simulation data model and observation data including the velocity of flow, tide elevation spring or neap and concentration heavy metals except salinity. Root Mean Square Error (RMS) value generated at the velocity of flow are 0.045 m/s with R^2 are 0.760 and tides elevation are 0.22, R^2 are 0.852. R values for each parameter are ≈ 1 , shows the fit between model simulations and observational data.

Keywords: *The Delta Mahakam Estuary, Heavy Metals Ion, Numeric 3-Dimension Mode*

CONFERENCE SECRETARIAT

- **Chemistry Department, Faculty of Mathematics and Natural Sciences, FMIPA, Mulawarman University**, Jalan Barong Tongkok, No. 4, Gunung Kelua campus, Samarinda, East Kalimantan 75123, Indonesia. Telp. +62541 747974
- **Awang Faroek Institute**, Jalan M. Yamin, No.20 Samarinda, East Kalimantan 75123, Indonesia. Telp. +62541 4121914

