

**MODEL NUMERIK 2-D (LATERAL & LONGITUDINAL)
SEBARAN POLUTAN KONSERVATIF**
(Studi Kasus: Sebaran Polutan Cadmium (Cd) di Muara Sungai Babon Semarang)

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ABSTRACT

The condition of estuary of River Babon is very influenced by the condition around its river stream. The estuary of River Babon also becomes waste disposal channel of Kawasan Industri Terboyo Semarang (KITS). The pollutants, whether direct or indirectly earn to step into estuary. Cadmium (Cd) as one of heavy metal pollutant and the conservative element will reach a certain spreading pattern at estuary. To know the cadmium spreading pattern, sampling is taken at the center of estuary to the seaward. Sampling is taken twice with one hour time interval. Model is used as a tool to know the Cd spreading pattern. It is needed to build a 2-D numerical model (lateral & longitude). The model uses governing equation based on hydrodynamic processes of the water and conservative pollutant transport. The equations can be solved numerically by using finite difference scheme. Result of research that have been conducted, known that concentration of Cd at estuary of river Babon in a range of 0,009 - 0,017 mg/l, where the concentration have exceeded water quality standard value, in this case based on Minister of Environment Regulation No. 51 year 2004 about Sea Water Quality for Ocean Organism, which is equal to 0.001 mg/l. From the output of the model for 1 hour time interval, obtained by value with error to field data equal to 3.028%. By using the model, we could know how the spread of pollutant accurately, quickly and cheap relative so that picture from the model earn made basis for the furthermore estuary management.

Keywords: estuary, Cadmium (Cd), spreading pattern, numerical model.