

ABSTRACT

DETERMINATION OF THE CONTENT OF HEAVY METALS IRON (Fe), CHROMIUM (Cr) AND COPPER (Cu) IN SEDIMENTS, WATER AND COASTAL PLANKTON OF SERTUNG ISLAND BY ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS)

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The determination of the content of heavy metals Iron (Fe), Chromium (Cr) and Copper (Cu) in sediments, water and coastal plankton of Sertung Island by Atomic Absorption Spectrophotometry (AAS) has been carried out. This research was conducted to determine heavy metal contamination on the coast of Sertung Island, Krakatau Islands. Sediment and water samples were taken from 3 points. Sample preparation was carried out by wet destruction and analyzed using Atomic Absorption Spectrophotometry (AAS). The results of analysis on sediment samples showed that the Fe content was between 153.18 ± 0.05 ppm- 153.41 ± 0.005 ppm, Cr metal was between 11.45 ± 3.96 ppm - 11.77 ± 1.67 ppm and Cu metal 77.20 ± 0.19 ppm-is within the quality standards set by the USEPA National Sediment Quality Survey (2004). The results of the analysis of the metal content of Fe, Cr and Cu in water were 1.41 ppm, 0.0, 62 ppm and 1 ppm are above the quality standard stipulated by the Republic of Indonesia Government Regulation No. 22 of 2021 concerning the Implementation of Environmental Protection and Management. Measurement of plankton samples obtained absorbance results on Fe 0.805, Cr 0.13 and Cu 0.22.

Keywords: Sertung Island Coast, heavy metals, sediment, water, plankton

ABSTRAK

PENENTUAN KANDUNGAN LOGAM BERAT BESI (Fe), KROMIUM (Cr) DAN TEMBAGA (Cu) PADA SEDIMEN, AIR DAN PLANKTON PESISIR PULAU SERTUNG SECARA SPEKTROFOTOMETRI SERAPAN ATOM (SSA)

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Telah dilakukannya penentuan kandungan logam berat Besi (Fe), Kromium (Cr) dan Tembaga (Cu) pada sedimen, air dan plankton Pesisir Pulau Sertung secara Spektrofotometri Serapan Atom (SSA). Penelitian ini dilakukan untuk mengetahui cemaran logam berat di Pesisir Pulau Sertung, Kepulauan Krakatau. Sampel sedimen dan air yang diambil berasal dari 3 titik. Preparasi sampel dilakukan dengan cara destruksi basah dan dianalisis menggunakan Spektrofotometri Serapan Atom (SSA). Hasil analisis pada sampel sedimen menunjukkan bahwa kadar logam Fe antara $153,18 \pm 0,05$ ppm- $153,41 \pm 0,005$ ppm, logam Cr antara $11,45 \pm 3,96$ ppm- $11,77 \pm 1,67$ ppm dan logam Cu $77,20 \pm 0,19$ ppm-berada di baku mutu yang telah ditetapkan *National Sediment Quality Survey* USEPA (2004). Hasil analisis kandungan logam Fe, Cr dan Cu pada air berturut turut sebesar 1,41 ppm, 0,62 ppm dan 1 ppm berada di atas baku mutu yang ditetapkan oleh Peraturan Pemerintah Republik Indonesia No. 22 Tahun 2021 tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup. Pengukuran sampel plankton didapatkan hasil absorbansi pada logam Fe 0,805, logam Cr 0,13 dan Cu 0,22.

Kata Kunci: Pulau Sertung, logam berat, Sedimen, air dan Plankton