ABSTRAK

ANALISIS LOGAM BERAT Cd, Fe DAN Pb PADA AIR SUNGAI WAY UMPU KABUPATEN WAY KANAN SECARA SPEKTROFOTOMETRI SERAPAN ATOM DAN *INDUCTIVELY COUPLED PLASMA-OPTICAL EMISSION SPECTROMETRY*

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SANGAJI ILHAM PRASETYO

Telah dilakukan analisis kandungan logam berat kadmium (Cd), besi (Fe) dan timbal (Pb) pada empat titik lokasi Air Sungai di Sungai Way Umpu, Kabupaten Way Kanan. Penelitian ini bertujuan untuk menentukan kandungan dan mengetahui tingkat pencemaran Logam Berat Cd, Fe dan Pb pada Air Sungai di Sungai Way Umpu menggunakan metode Spektrofotometri Serapan Atom dan *Inductively Coupled Plasma-Optical Emission Spectrometry*. Metode pengambilan sampel dilakukan sesuai SNI 6989.59:2008. Hasil analisis dari keempat lokasi menunjukkan konsentrasi logam Cd berada pada rentang 0,007-0,020 ppm, logam Fe pada rentang 0,026-0,270 ppm, dan logam Pb pada rentang 0,036-0,268 ppm. Berdasarkan hasil analisis, kadar logam Cd dan Pb pada keempat lokasi menunjukkan bahwa konsentrasi logam tersebut melebihi baku mutu menurut Peraturan Pemerintah Republik Indonesia No. 22 Tahun 2021, sedangkan kandungan logam Fe pada keempat lokasi masih berada dibawah baku mutu yang ditetapkan. Validasi metode pada analisis konsentrasi logam Cd, Fe dan Pb pada keempat lokasi Air Sungai Way Umpu menunjukkan nilai koefisien korelasi masing-masing yaitu 99,8%, 99,9% dan 99,7%. Limit deteksi masing-masing yaitu 0,0126; 0,1222; 0,8293 ppm. Sedangkan untuk limit kuantifikasi masing-masing logam yaitu 0,0422; 0,4072; 2,7645 ppm. Serta akurasi pada masing-masing logam sebesar 99,03%-99,15%, 100,26%-101,06%, dan 101,04%-102,01%.

Kata Kunci **:** Cd, Fe, Pb, Logam Berat, Air Sungai, Spektrofotometri Serapan Atom, *Inductively Coupled Plasma-Optical Emission Spectrometry*, Sungai Way Umpu, Kabupaten Way Kanan.

ABSTRACT

ANALYSIS OF HEAVY METALS Cd, Fe AND Pb IN WAY UMPU RIVER WATER WAY KANAN REGENCY BY ATOMIC ABSORPTION SPECTROPHOTOMETRY AND INDUCTIVELY COUPLED PLASMA-OPTICAL EMISSION SPECTROMETRY

By

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An analysis of the heavy metal content of cadmium (Cd), iron (Fe) and lead (Pb) has been carried out at four water points in the Way Umpu River, Way Kanan Regency. This study aims to determine the content and level of heavy metal contamination of Cd, Fe and Pb in River Water in the Way Umpu River using Atomic Absorption Spectrophotometry and Inductively Coupled Plasma-Optical Emission Spectrometry. Sampling was carried out using the method according to SNI 6989.59:2008. The results of the analysis from the four locations showed that the concentration of Cd metal was in the range of 0.007-0.020 ppm, Fe metal was in the range of 0.026-0.270 ppm, and Pb metal was in the range of 0.036-0.268 ppm. Based on the results of the analysis, the levels of Cd and Pb in the four locations indicated that the concentration of these metals exceeded the quality standard according to PPRI No. 22 of 2021, while the metal content of Fe in the four locations is still below the specified quality standard. Method validation on the analysis of metal concentrations of Cd, Fe and Pb at the four locations of the Way Umpu River showed the correlation coefficient values of each metal, namely 99.8%, 99.9% and 99.7%. The detection limit of each metal is 0.0126; 0.1222; 0.8293 ppm. Meanwhile, the quantification limit for each metal is 0.0422; 0.4072; 2.7645 ppm. And the accuracy of each metal is 99.03%-99.15%, 100.26%-101.06%, and 101.04%-102.01%.

Kata Kunci **:** Cd, Fe, Pb, Heavy Metals, River Water, Atomic Absorption Spectrophotometry, Inductively Coupled Plasma-Optical Emission Spectrometry, Way Umpu River, Way Kanan Regency.