

**ANALISIS KONSENTRASI *PARTICULATE MATTER* 10 (PM₁₀)
DAN RISIKO KESEHATAN LINGKUNGAN TERHADAP
MASYARAKAT SEKITAR BUKIT KARANG PUTIH
KOTA PADANG**

TUGAS AKHIR

Sebagai salah satu syarat untuk menyelesaikan
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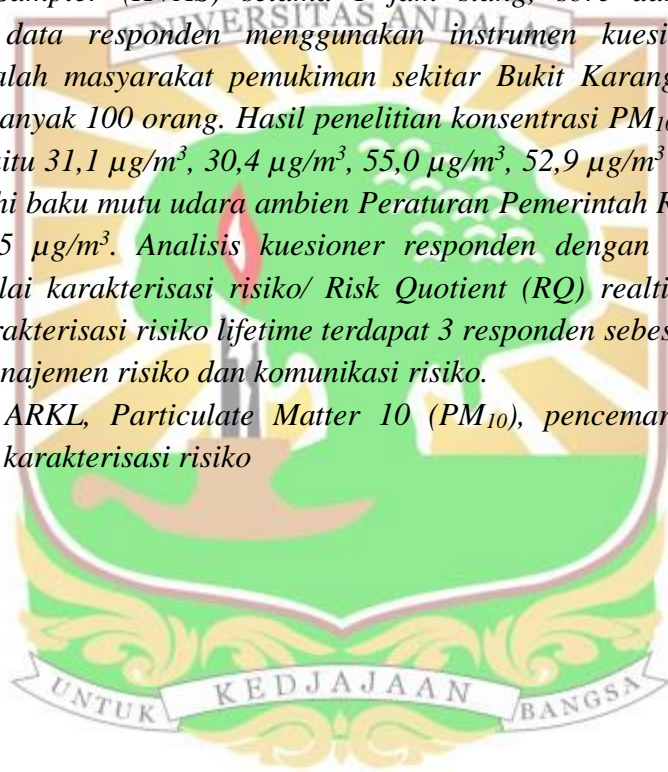
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ABSTRAK

Sumber polutan yang diterima masyarakat sekitar Bukit Karang Putih yaitu industri semen, pertambangan batu kapur dan aktivitas lalu lintas dapat mempengaruhi kesehatan masyarakat. Penelitian ini dilakukan untuk menganalisis polutan Particulate Matter 10 (PM_{10}) dan menganalisis besaran risiko yang diterima masyarakat sekitar Bukit Karang Putih Kota Padang. Metode penelitian yang digunakan adalah metode gravimetri untuk menentukan konsentrasi PM_{10} dan pendekatan Analisis Risiko Kesehatan Lingkungan (ARKL) dengan hasil akhir besaran risiko. Pengambilan data didapatkan pada pengukuran langsung di lapangan sebanyak 5 titik dengan radius 1,2 km -1,7 km dari tambang batu kapur, 2,2 km - 3,4 km dari PT. Semen Padang. Konsentrasi PM_{10} diukur dengan alat High Volume Air Sampler (HVAS) selama 1 jam siang, sore dan malam serta pengambilan data responden menggunakan instrumen kuesioner. Populasi penelitian adalah masyarakat pemukiman sekitar Bukit Karang Putih dengan responden sebanyak 100 orang. Hasil penelitian konsentrasi PM_{10} selama 24 jam pada 5 titik yaitu $31,1 \mu\text{g}/\text{m}^3$, $30,4 \mu\text{g}/\text{m}^3$, $55,0 \mu\text{g}/\text{m}^3$, $52,9 \mu\text{g}/\text{m}^3$ dan $35,8 \mu\text{g}/\text{m}^3$ yang memenuhi baku mutu udara ambien Peraturan Pemerintah RI No. 22 Tahun 2021 yaitu $75 \mu\text{g}/\text{m}^3$. Analisis kuesioner responden dengan tahapan ARKL didapatkan nilai karakterisasi risiko/ Risk Quotient (RQ) realtime sebesar <1 sedangkan karakterisasi risiko lifetime terdapat 3 responden sebesar >1 sehingga diperlukan manajemen risiko dan komunikasi risiko.

Kata Kunci: ARKL, Particulate Matter 10 (PM_{10}), pencemaran udara, dan karakterisasi risiko



ABSTRACT

Sources of pollutants received by the community around Bukit Karang Putih, namely the cement industry, limestone mining, and traffic activities can affect public health. This research was conducted to analyze the Particulate Matter 10 (PM_{10}) pollutant and to analyze the magnitude of the risk received by the community around Bukit Karang Putih, Padang City. The research method used is the gravimetric method to determine the concentration of PM_{10} and the Environmental Health Risk Assessment (EHRA) approach with the final result of the risk magnitude. Data retrieval was obtained from direct measurements in the field at as many as 5 points with a radius of 1.2 km -1.7 km from limestone quarries, and 2.2 km -3.4 km from PT. Padang Cement. PM_{10} concentration was measured using a High Volume Air Sampler (HVAS) for 1 hour in the afternoon, evening, and night and the respondent's data was collected using a questionnaire instrument. The research population is the residential community around Bukit Karang Putih with 100 respondents. The results of the study were PM_{10} concentrations for 24 hours at 5 points, namely $31,1 \mu\text{g}/\text{m}^3$, $30,4 \mu\text{g}/\text{m}^3$, $55,0 \mu\text{g}/\text{m}^3$, $52,9 \mu\text{g}/\text{m}^3$ and $35,8 \mu\text{g}/\text{m}^3$ which met the ambient air quality standard of Indonesian Government Regulation No. 22 of 2021, which was $75 \mu\text{g}/\text{m}^3$. Analysis of the respondent's questionnaire with the EHRA stage obtained a real-time Risk Quotient (RQ) value of <1 while the lifetime risk characterization of 3 respondents was >1 so risk management and risk communication were needed.

Keywords: Air pollution, Particulate Matter 10 (PM_{10}), Industry, RQ, and EHRA.

