

**THE EFFECT OF AIR LEAD (Pb) AND INDIVIDUAL
CHARACTERISTICS ON SUBJECTIVE COMPLAINTS OF GAS
STATION OPERATORS**

(Case Study at Pertamina Gas Station 54.601.127 Surabaya in 2024)

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ABSTRACT

Lead (Pb) is an air pollutant present in particulate form, often known as metallic powder. Gas station operators are one of the groups at risk of lead exposure from motor vehicle emissions which is harmful to health because it can accumulate in the body. Based on the preliminary study, 50% of the 8 gas station operators interviewed experienced subjective complaints such as fatigue, headaches, and irritability, while 75% experienced sleep disturbances and 62.5% experienced difficulty concentrating and often ignored the use of masks while working. This study aims to analyze the effect of air lead (Pb) and individual characteristics on subjective complaints of Pertamina 54.601.127 Surabaya gas station operators in 2024.

This research is analytic observational with a cross sectional approach. The research location is Pertamina 54.601.127 Surabaya gas station. The sample size was 28 respondents taken by simple random sampling from 30 populations. Data were collected through measurements, observations, and interviews which were then processed and analyzed using the chi-square test.

The results showed that air Pb measurements at 2 points met the NAB based on Permenaker No. 5 of 2018, which is less than 0.05 mg/m³. Based on the chi-square test, the results of the variable length of service and the habit of using PPE affect subjective complaints with a p-value <0.05. While the variables of air Pb, age, and smoking habits have no effect on subjective complaints.

The conclusion of this study is that the length of service and the habit of using PPE affect the subjective complaints of gas station operators. It is recommended for gas station operators to always use N95 masks while working and routinely check their health to local health services.

Keywords : Lead; gas station operator; subjective complaints.

**PENGARUH TIMBAL (Pb) UDARA DAN KARAKTERISTIK INDIVIDU
TERHADAP KELUHAN SUBYEKTIF OPERATOR SPBU
(Studi Kasus di SPBU Pertamina 54.601.127 Surabaya Tahun 2024)
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ABSTRAK

Timbal (Pb) merupakan suatu zat pencemar udara yang hadir dalam bentuk partikel yang seringkali dikenal sebagai serbuk logam. Operator SPBU merupakan salah satu kelompok berisiko terkena paparan timbal dari emisi kendaraan bermotor yang berbahaya bagi kesehatan karena dapat berakumulasi di dalam tubuh. Berdasarkan studi pendahuluan diperoleh data bahwa dari 8 operator SPBU yang diwawancarai 50% operator SPBU mengalami keluhan subyektif berupa kelelahan, sakit kepala, dan mudah marah, sedangkan sebanyak 75% mengalami gangguan tidur dan 62,5% mengalami sulit berkonsentrasi serta sering mengabaikan penggunaan masker saat bekerja. Penelitian ini bertujuan menganalisis pengaruh timbal (Pb) udara dan karakteristik individu terhadap keluhan subyektif operator SPBU Pertamina 54.601.127 Surabaya Tahun 2024.

Penelitian ini bersifat observasional analitik dengan pendekatan *cross sectional*. Lokasi penelitian di SPBU Pertamina 54.601.127 Surabaya. Besar sampel sebanyak 28 responden yang diambil secara *simple random sampling* dari 30 populasi. Data dikumpulkan melalui pengukuran, observasi, dan wawancara yang selanjutnya diolah dan dianalisis menggunakan uji *chi-square*.

Hasil penelitian diperoleh pengukuran Pb udara di 2 titik memenuhi NAB berdasarkan Permenaker No. 5 Tahun 2018 yaitu kurang dari 0,05 mg/m³. Berdasarkan uji *chi-square* diperoleh hasil variabel masa kerja dan kebiasaan menggunakan APD berpengaruh terhadap keluhan subyektif dengan nilai *p-value* < 0,05. Sedangkan variabel Pb udara, umur, dan kebiasaan merokok tidak berpengaruh terhadap keluhan subyektif.

Kesimpulan penelitian ini bahwa masa kerja dan kebiasaan menggunakan APD berpengaruh terhadap keluhan subyektif operator SPBU. Disarankan bagi operator SPBU untuk selalu menggunakan masker N95 selama bekerja dan rutin memeriksakan kesehatan ke layanan kesehatan setempat.

Kata Kunci : Timbal; operator SPBU; keluhan subyektif.