

ABSTRAK

Indi Melisa Saputri

ANALISIS CEMARAN AIR LINDI PADA KUALITAS AIR SUMUR GALI WARGA SEKITAR TEMPAT PEMROSESAN AKHIR (TPA) BENOWO KECAMATAN PAKAL TAHUN 2025

xiv + 48 Halaman + 9 Tabel + 11 Lampiran

Tempat Pemrosesan Akhir (TPA) Benowo menghasilkan air lindi yang berkemungkinan mencemari lingkungan. Kualitas air sumur dapat berkurang karena adanya senyawa organik dan anorganik dalam lindi. Penurunan kualitas air sumur berisiko bagi kesehatan masyarakat. Warga masih mempergunakan sumur gali sebagai sumber air utama. Penelitian ini bertujuan menggambarkan analisis cemaran air lindi pada kualitas air sumur gali warga sekitar TPA Benowo Kecamatan Pakal.

Penelitian ini mempergunakan metode deskriptif dengan pendekatan kualitatif dengan desain *cross-sectional*. Objeknya yakni air sumur gali warga ditentukan dari jarak 2.000, 2.500, 3.000, serta 3.500 meter dari TPA Benowo. Teknik *composite sample* digunakan dalam pengambilan sampel air, dengan replikasi dilakukan dua (2) kali. Variabel bebasnya yakni cemaran air lindi. Variabel terikatnya yakni kualitas air sumur gali warga yang diukur dengan pH, TDS, BOD, dan Fe. Pengambilan data dilakukan melalui observasi, pengukuran lapangan dan pengukuran skala laboratorium. Analisis data dilakukan mempergunakan uji deskriptif kuantitatif, data disajikan berbentuk tabel, grafik.

Temuan penelitian mengindikasikan air sumur gali warga yang berada dalam jarak 2.000 meter hingga 3.500 meter dari TPA Benowo mengalami penurunan kualitas. Rata – rata parameter pH air sumur gali warga dengan jarak 2.000, 2.500, 3.000, serta 3.500 m sebesar 8,00, 7,73, 7,57, 7,73, menunjukkan nilai memenuhi baku mutu Permenkes No. 2 Tahun 2023. Rata TDS menunjukkan bahwa di jarak 2.000 meter memenuhi baku mutu senilai 250 mg/L, di jarak 2.500, 3.000, serta 3.500 meter sebesar 250, 318, 553,5, 362,5 mg/L dan Fe sebesar 0,46; 0,67; 0,60; 0,71 mg/L, memperlihatkan nilai yang melebihi baku mutu Permenkes No. 2 Tahun 2023. Rata – rata BOD air sumur gali warga dengan jarak 2.000, 2.500, 3.000, serta 3.500 m sebesar 13,7; 26,05; 21,35; 26,3 mg/L, menunjukkan nilai melebihi baku mutu air kelas II di PP No. 22 Tahun 2021.

Tingginya kadar pencemar pada parameter TDS, BOD dan Fe menunjukkan adanya kontruksi sumur warga yang tidak terlindungi, memudahkan infiltrasi air lindi yang bersumber dari dekomposisi sampah di TPA Benowo. Perlu dilaksanakan pemantauan kualitas air dengan berkala serta penanganan sistem pengolahan air lindi lebih optimal, perbaikan kontruksi sumur dengan dinding kedap air dan tutup permanen harus diprioritaskan untuk mencegah masuknya air lindi dan melakukan pengolahan air sumur gali sederhana seperti filtrasi, aerasi, atau desinfeksi sebelum digunakan.

Kata Kunci : Air lindi, Kualitas air, TPA Benowo

Daftar Bacaan : 39 (37 Jurnal, 2 Peraturan)

ABSTRACT

Indi Melisa Saputri

ANALYSIS OF LEACHATE WATER CONTAMINATION IN THE WATER QUALITY OF WELLS DUG BY RESIDENTS AROUND THE BENOWO FINAL PROCESSING SITE (TPA) PAKAL DISTRICT IN 2025

xiv + 48 Pages + 9 Tabela + 11 Appendices

The Benowo Landfill (TPA) produces leachate that has the potential to pollute the environment. Well water quality can be reduced due to the presence of organic and inorganic compounds in the leachate. This decline in well water quality poses a risk to public health. Residents still use dug wells as their primary water source. This study aims to describe the analysis of leachate contamination in the water quality of dug wells in residents around the Benowo Landfill in Pakal District.

This study used a descriptive method with a qualitative approach and a cross-sectional design. The subjects were dug well water samples taken at distances of 2,000, 2,500, 3,000, and 3,500 meters from the Benowo Landfill. A composite sampling technique was used for water sampling, with two replications. The independent variable was leachate contamination. The dependent variable was well water quality, measured using pH, TDS, BOD, and Fe. Data collection was conducted through observation, field measurements, and laboratory-scale measurements. Data analysis was conducted using quantitative descriptive tests, presented in tables and graphs.

Research findings indicate that the quality of dug well water from residents located within 2,000 meters to 3,500 meters from the Benowo Landfill has decreased. The average pH parameters of dug well water from residents at distances of 2,000, 2,500, 3,000, and 3,500 m are 8.00, 7.73, 7.57, and 7.73, indicating that the values meet the quality standards of the Minister of Health Regulation No. 2 of 2023. The average TDS shows that at a distance of 2,000 meters it meets the quality standard of 250 mg/L, at a distance of 2,500, 3,000, and 3,500 meters it is 250, 318, 553.5, 362.5 mg/L and Fe is 0.46; 0.67; 0.60; 0.71 mg/L, indicating a value that exceeds the quality standards of Minister of Health Regulation No. 2 of 2023. The average BOD of water dug by residents at distances of 2,000, 2,500, 3,000, and 3,500 m is 13.7; 26.05; 21.35; 26.3 mg/L, indicating a value that exceeds the class II water quality standards in PP No. 22 of 2021.

The high levels of pollutants in the TDS, BOD, and Fe parameters indicate that residents' well constructions are unprotected, allowing leachate infiltration from the decomposition of waste at the Benowo landfill (TPA). Regular water quality monitoring and more optimal leachate treatment systems are necessary. Improving well construction with impermeable walls and permanent covers should be prioritized to prevent leachate intrusion, along with implementing simple dug well water treatment methods such as filtration, aeration, or disinfection before use.

Keywords : Leachate, Water quality, Benowo Landfill.

References : 39 (37 Journal, 2 Regulations)