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Comparative air quality of petroleum depots and refueling stations atmospheric environments in Nigeria

Uduak O Luke, Robert Eyo, Saviour Ufot, Friday E Uboh and Godwin O Igile
University of Calabar, Nigeria

Comparative air quality of petroleum depots and refueling stations was assessed in this study. Noise level, relative humidity, wind speed, temperature, volatile organic compounds, ammonia, methane, hydrogen sulphide, carbon monoxide, nitrogen oxide and sulphur VI oxide were measured to assess the air quality of these environments. The volatile organic compounds, ammonia, methane, hydrogen sulphide, carbon monoxide, nitrogen oxide and sulphur VI oxide levels in the air were measured using aeroqual environmental monitor series 300, while Extech sound level meter (407730) for the noise level and Extech meteorological meter (45170) was used to measure the wind speed, temperature and humidity. The results showed that there was no significant difference ($p < 0.05$) in the noise level, relative humidity and volatile organic compounds recorded within the two petroleum polluted sites. The levels of ammonia and methane recorded for the petroleum depot were significantly ($p < 0.05$) higher, compared with the levels recorded for the refueling stations. It was also observed that hydrogen sulphide, carbon monoxide, nitrogen oxide and sulphur VI oxide levels recorded at the refueling stations were significantly ($p < 0.05$) higher, compared with the levels recorded for petroleum depot. However, the levels of these indices were significantly higher, compared with the environmental standard permissible limits. It may therefore be concluded that petroleum depots and refueling stations atmospheric environments harbor chemical substances that can contaminate the air quality, and constitute environmental pollution in these areas.

Biography

Uduak O Luke completed her Bachelor's degree in Biochemistry at the age of 25 from University of Uyo and Master of Science degree in Clinical Biochemistry at 29 years from University of Calabar, Nigeria. She is a PhD research candidate in Environmental/Biochemical Toxicology in the Department of Biochemistry, University of Calabar. She's currently working at the Institute of Health Research and Development, University of Uyo Teaching Hospital Uyo, Nigeria as a Research Officer. She is a certified Oracle Database Administrator. She has published over 10 papers in reputable journals.