THE EFFECT OF QUARRY OPERATION ON THE AIR QUALITY IN GUNDUWAWA VILLAGE, KANO STATE, NIGERIA


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ABSTRACT

Monitoring of some air quality variables (TSP, CO, CO\textsubscript{2}, SO\textsubscript{2}, NO\textsubscript{2}) arising from man made disturbances which occur in quarry operations as well as the perception of the inhabitants on the impact of the location of the quarry in their environment, was carried out. The quarry is located within Gunduwawa Village in Gezawa Local Government Area of Kano State. The field work period was carried out between 5\textsuperscript{th} of April to 18\textsuperscript{th} of August, 2009. The results obtained showed that CO and CO\textsubscript{2} have a range of concentrations between 3.5 - 25 ppm and 48.7 - 394 ppm respectively. Whereas the CO concentrations values slightly exceeded the National Ambient Air Quality Standards (NAAQS) recommended values, the CO\textsubscript{2} values at all sampling points were below the maximum NAAQS. The concentrations of suspended particulate matter ranged between 0.10 and 0.68mg/m\textsuperscript{3} at the sampling points. The values obtained for the TSP, CO, CO\textsubscript{2}, NO\textsubscript{2} and SO\textsubscript{2} especially within the quarry premises portend potential risk of upper respiratory tract infections. There were significant variations between the values observed for each of the air quality parameters during the dry and rainy seasons. The results of the structured interview conducted also showed that over 80% of the local populace living around the quarry had strong condemnation for the quarry operations. They were of the opinion that it has caused them more harm (arising from destructive environmental hazards) than good, since they have little or no benefit to show for its presence.

Keywords: Air quality, environment, quarry, respondents

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