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Assessment of Air Quality Status Using Pollution Indicators in Industrial Zone of Brega City

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Abstract : Air pollution has become a major environmental issue with definitive repercussions on human health. Global concerns have been raised about the health effects of deteriorating air quality due mainly to widespread industrialization and urbanization. To assess the quality of air in Brega, air quality indicators were calculated using the U.S. Environmental Protection Agency procedure. Air quality was monitored from 01/10/2019 to 28/02/2021 with a daily average measuring six pollutants of particulate matter <2.5µm (PM2.5), and <10µm (PM_{10}), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), and carbon monoxide (CO). The result indicated that air pollution at general air quality monitoring sites for sulphur dioxide, carbon monoxide, PM_{10} and PM2.5 and nitrogen dioxide are always within the permissible limit. Referring to a monthly average of Pollutants in the Brega Industrial area, all months were out of AQG limit for NO_2, and the same with O_3 except for two months. For PM2.5 and PM_{10} 7, 5 out of 17 months were out of limits, respectively. Relative AQI for ozone is found in the range of moderate category of general air pollution, and the worst month was Nov. 2020, which was marked as Very Unhealthy category, then the next two months (Dec. 2020 and Jan. 2021) were Unhealthy categories. It's the first time that we have used the AQI in SOC, and not usually used in Libya to identify the quality of air pollution. So, I think it will be useful if AQI is used as guidance for specified air pollution. That dictate putting monitoring stations beside any industrial activity that has emissions of the six major air pollutants.

Keywords : air quality, air pollutants, air quality index (AQI), particulate matter
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