

AMBIENT AIR POLLUTION MONITORING NETWORK OVER ALEXANDRIA CITY AND THE NILE DELTA, EGYPT

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The Egyptian Environmental Affairs Agency (EEAA) has established a National Air Pollution Network for Egypt. A part of this network covers Alexandria and the Nile delta region and is being operated by the Institute of Graduate Studies and Research (IGSR), University of Alexandria. This paper presents a description of the network, the QA/QC program as well as results from automatic monitors and manually operated instruments. Preliminary interpretations and implications of air pollution levels have also been discussed.

The network monitors ambient air quality indicators including SO₂, NO₂, CO, O₃ and PM₁₀. The sites for measurements were selected to represent industrial, traffic and domestic sources. Eight stations are established over Alexandria City and seven stations are distributed over Nile delta major cities Damanhur, Kafr El-Dawwar, Kafr El-Zayat, Mahala, Tanta, Damietta and Mansoura.

The results represent the first long term air quality data for the southern Mediterranean region, which have been properly quality assured and quality controlled. The main results indicate that measured NO₂ concentrations have not exceeded the national air quality limit (AQL) values given for Egypt. The same occurred for SO₂ except at one site located in Kafr Elzayat in the Delta, where large emissions from brick factories impact the site. The 8-hour average CO concentrations were exceeded at a few occasions.

PM₁₀ concentrations have been identified as the major air pollution problem. Concentrations exceeding 70 µg/m³ (AQL) have been observed over many sites most of the time. It is suggested that a strong program for tree cultivation on the western desert may be essential for protection.