

ABSTRACT

The present appraisal was undertaken to assess the concentration trends of pollutants exist in the ambient air at hot spots of the traffic in Lahore. Monitoring was conducted in three seasons summer, spring and winter to hunch the post CNG (compressed natural gas) ambient air quality. Temporal variation showed winter dominance of all pollutants at all study spots. Average concentrations of the pre (1999-2000) and post (2009-2010) CNG periods were also compared. Post CNG average values observed for carbon monoxide, sulphur dioxide, nitrogen dioxide and total suspended matter were 2.7-4.5 mg/m³, 81-108 ug/m³, 65-97 ug/m³ and 500-1630 ug/m³ respectively. Pre CNG average values noted for carbon monoxide, sulphur dioxide, nitrogen dioxide and total suspended matter were 1.14-25.08 mg/m³, 11.7-151 ug/m³, 95-304 ug/m³ and 1324-1535 ug/m³ respectively. NO₂ and total suspended matter were exceeded the national ambient air quality standard (NAAQS). Amounts of all above-mentioned pollutants found to be less as compared with the values in the year 1999. Although number of cars in Lahore in the year 1999 was 189756, which was rose up to 722012 in the year 2010. Herein, this decreasing trend of pollutant levels owes to the conversion of 95% vehicles to CNG.

Assessment of aerosol particulates collected on filter paper from five locations was done by particle-induced X-ray emission (PIXE) analysis. Seventeen elements (Na, Mg, Al, Si, S, Cl, K, Ca, Sc, Ti, V, Mn, Fe, Zn, Sr, Ni, P) have been determined. Out of which elements of crustal origin viz., Na, Mg, Al, Si and Ca were found with maximum concentration than heavy metals while P and Ni were detected only at one site.