

## **Carbon monoxide levels along roadway**

### **ABSTRACT**

This paper predicts and compares the carbon monoxide (CO) concentration levels along Sembulan Road for years 2004 and 2014 using CAL3QHC air dispersion model at two major locations, i.e., at Sembulan Roundabout and Sutera Harbour Intersection, Kota Kinabalu, Sabah, Malaysia. The CO concentration "hot-spots" were also identified at Sutera Harbour Intersection, and the highest maximum 1-hr average ground level concentrations of CO modeled for Kpg. Air Sembulan located in the northeast of idling road was 9.33 ppm for year 2004. This study showed that there would be no extreme changes in CO concentration trends for year 2014 although a substantial increase in the number of vehicles is assumed to affect the level of CO concentrations. It was also found that the CO levels would be well below the Malaysian Ambient Air Quality Guidelines of 30 ppm for 1-hour Time-Weighted Average (TWA). Comparisons between the modeled and observed outputs using quantitative data analysis technique and statistical methods indicated that the CAL3QHC predicted results correlated well with measured data. It was predicted that receptors located near to the major intersection, in the long-term would be potentially exposed to relatively higher CO levels.