Emissions Samplers

SURFACE SAMPLER draws in particle-laden air in the same manner as a conventional vacuum cleaner. The instrument collects the dust by circulating the air within a specially designed cyclone. The rotating current of air slows near the bottom of the swirling vortex, and suspended particles drop into a small bottle for later analysis.

CARBON MONOXIDE MEASURER uses an electrochemical cell as a gas sensor. The small electric current generated by the cell varies with the ambient level of carbon monoxide. By monitoring this current, an internal microcomputer can calculate the concentration of carbon monoxide and record its value at regular intervals.

PERSONAL SAMPLER records the particles and volatile organic compounds to which the wearer is exposed over the course of several days. Particles are trapped by forcing air through a filter with an electric pump, whereas volatile compounds are collected by letting air diffuse through a membrane onto charcoal disks.

Images: Courtesy of C-3, Inc. (top left); Beth Phillips (top right and bottom)

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