

## SCHEDULE 8

## Data quality objectives

## PART 2

## Group B pollutants, polycyclic aromatic hydrocarbons and total gaseous mercury

**11.** The data quality objectives set out in the following table are provided to guide quality assurance—

	<i>Benzo(a)pyrene</i>	<i>Arsenic, cadmium and nickel</i>	<i>Polycyclic aromatic hydrocarbons and total gaseous mercury</i>	<i>Total deposition</i>
<i>Uncertainty</i>				
Fixed and indicative measurements	50%	40%	50%	70%
Modelling	60%	60%	60%	60%
<i>Minimum data capture</i>	90%	90%	90%	90%
<i>Minimum time coverage</i>				
Fixed measurements	33%	50%		
Indicative measurements <sup>(1)</sup>	14%	14%	14%	33%

(1) Indicative measurement being measurements which are performed at reduced regularity but fulfil the other data quality objectives.

**12.** The uncertainty (expressed at a 95% confidence level) of the methods used for the assessment of ambient air concentrations shall be evaluated in accordance with the CEN Guide to the Expression of Uncertainty in Measurement (ENV 13005-1999)(1), the methodology of ISO 5725:1994, and the guidance provided in the CEN Report, “Air quality – Approach to uncertainty estimation for ambient air reference measurement methods” (CR 14377:2002E). The percentages for uncertainty in the table in paragraph 11 are given for individual measurements, which are averaged over typical sampling times, for a 95% confidence interval. The uncertainty of the measurements shall be interpreted as being applicable in the region of the appropriate target value. Fixed and indicative measurements shall be evenly distributed over the year in order to avoid skewing of results.

**13.** The requirements for minimum data capture and time coverage do not include losses of data due to regular calibration or normal maintenance of the instrumentation. Twenty-four-hour sampling is required for the measurement of benzo(a)pyrene and polycyclic aromatic hydrocarbons. With care, individual samples taken over a period of up to one month may be combined and analysed as a

(1) European Committee for Standardisation (CEN) publication; (copies may be obtained from CEN at 36, Rue de Stassart, B 1050, Brussels, Belgium, <http://www.cenorm.be>).

**Status:** This is the original version (as it was originally made).

composite sample, provided the method ensures that the samples are stable for that period. Where the three congeners benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene, are difficult to resolve analytically, they may be reported as sum. The Scottish Ministers shall endeavour, in so far as practicable, to undertake twenty-four hour sampling for the measurement of arsenic, cadmium and nickel concentrations. Sampling shall be spread evenly over the weekdays and the year. For the measurement of deposition rates the Scottish Ministers shall endeavour, in so far as practicable, to obtain monthly, or weekly, samples throughout the year.

**14.** The Scottish Ministers may allow for use of wet only instead of bulk sampling if it can be demonstrated to their satisfaction that the difference between them is within 10%. Deposition rates shall generally be given as  $\mu\text{g}/\text{m}^3$  per day.

**15.** The Scottish Ministers may apply a minimum time coverage lower than indicated in the table at paragraph 11, but not lower than 14% for fixed measurements and 6% for indicative measurements provided that they are satisfied that it can be demonstrated that the 95% expanded uncertainty for the annual mean, calculated from the data quality objectives in the table at paragraph 11 according to ISO 11222:2002 – “Determination of the uncertainty of the time average of air quality measurements” will be met.