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WELSH STATUTORY INSTRUMENTS

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**2010 No. 1433**

**The Air Quality Standards (Wales) Regulations 2010**

**PART 2**

Assessment of ambient air quality

CHAPTER 1

Sulphur dioxide, nitrogen dioxide and oxides of nitrogen,  
PM<sub>10</sub>, PM<sub>2.5</sub>, lead, benzene and carbon monoxide

**Assessment thresholds**

5.—(1) The Welsh Ministers must classify each zone according to whether or not the upper or lower assessment thresholds specified in Section A of Annex II to Directive [2008/50/EC](#) are exceeded in relation to sulphur dioxide, nitrogen dioxide and oxides of nitrogen, PM<sub>10</sub>, PM<sub>2.5</sub>, lead, benzene and carbon monoxide.

(2) The Welsh Ministers must review the classification of zones in paragraph (1) at least every five years, and must do so more frequently than every five years if there are significant changes in the activities which may affect levels of the pollutants referred to in paragraph (1) in ambient air.

(3) When reviewing the classification of zones in accordance with assessment thresholds, the Welsh Ministers must comply with Section B of Annex II to Directive [2008/50/EC](#).

**Assessment requirements**

6.—(1) The Welsh Ministers must assess the level of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, PM<sub>10</sub>, PM<sub>2.5</sub>, lead, benzene and carbon monoxide in ambient air in each zone in accordance with paragraphs (2) to (4) and the criteria set out in Annex III to Directive [2008/50/EC](#).

(2) In zones where the level of any pollutant mentioned in paragraph (1) exceeds the upper assessment threshold for that pollutant referred to in regulation 5, fixed measurements must be used in relation to that pollutant, but may be supplemented by indicative measurements or modelling or both in order to provide adequate information on the spatial distribution of the ambient air quality.

(3) In zones where the level of any pollutant mentioned in paragraph (1) is at or between the upper and lower assessment thresholds for that pollutant referred to in regulation 5, fixed measurements must be used in relation to that pollutant but may be combined with indicative measurements or modelling or both.

(4) In zones where the level of any pollutant mentioned in paragraph (1) is below the lower assessment threshold for that pollutant referred to in regulation 5, modelling or objective estimation techniques or both may be used instead of measurement in relation to that pollutant.

(5) Where fixed measurements are supplemented by modelling or indicative measurements then the Welsh Ministers must take account of the results of those supplementary methods in carrying out the assessment referred to in paragraph (1).

(6) In addition to the assessment referred to in paragraph (1), the Welsh Ministers must measure PM<sub>2.5</sub> at rural background locations away from significant sources of air pollution, in order to provide information on an annual average basis on the total mass concentration and chemical speciation concentrations of that pollutant.

(7) For the purposes of paragraph (6), measurement must be carried out in accordance with the criteria set out in Annex IV to Directive 2008/50/EC and must be coordinated with the monitoring strategy and measurement programme of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP), where appropriate.

(8) The data quality objectives and requirements set out in Sections A and C of Annex I to Directive 2008/50/EC must be applied in carrying out the assessment and measurement referred to in paragraphs (1) and (6).

(9) Save as provided for in paragraph (10), measurements under this regulation must be taken in accordance with the reference measurement methods specified in Section A and Section C of Annex VI to Directive 2008/50/EC.

(10) Alternative methods to those referred to in paragraph (9) may be used provided the conditions set out in Section B of Annex VI to Directive 2008/50/EC are complied with.

(11) In this regulation, “chemical speciation concentrations” (“*crynodiadau ffurfiant rhywogaethau cemegol*”) means the concentrations of different chemical components or species of PM<sub>2.5</sub>.

### **Location and number of sampling points**

7.—(1) The Welsh Ministers must install sampling points in accordance with the criteria set out in Annex III to Directive 2008/50/EC for the assessment of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, PM<sub>10</sub>, PM<sub>2.5</sub>, lead, benzene and carbon monoxide.

(2) In zones where fixed measurements are the sole source of information for the assessment of air quality in relation to any pollutant mentioned in paragraph (1), the number of sampling points for that pollutant must be greater than or equal to the minimum number specified in Section A of Annex V to Directive 2008/50/EC for the purpose of assessing compliance with alert thresholds and limit values for the protection of human health.

(3) In zones other than agglomerations where fixed measurements are the sole source of information for the assessment of air quality in relation to sulphur dioxide or oxides of nitrogen, the number of sampling points for that pollutant must be greater than or equal to the minimum number specified in Section C of Annex V to Directive 2008/50/EC for the purpose of assessing compliance with critical levels for the protection of vegetation.

(4) In zones where the information from fixed measurements is supplemented by information from modelling or indicative measurements or both—

- (a) the number of sampling points specified in Section A of Annex V to Directive 2008/50/EC may be reduced by up to 50% provided that the following conditions are met—
  - (i) the supplementary methods provide sufficient information for the assessment of air quality in relation to limit values and alert thresholds,
  - (ii) the supplementary methods provide sufficient information to inform the public as to the state of ambient air quality, and
  - (iii) the number of sampling points to be installed and the spatial resolution of other techniques are sufficient for the concentration of the relevant pollutant to be established in accordance with the data quality objectives specified in Section A of Annex I to Directive 2008/50/EC and enable assessment results to meet the criteria in Section B of the same Annex; and

- (b) the number of sampling points specified in Section C of Annex V to Directive [2008/50/EC](#) may be reduced by up to 50% provided that the assessed concentrations of the relevant pollutant can be established in accordance with the data quality objectives specified in Section A of Annex I to Directive [2008/50/EC](#).
- (5) The Welsh Ministers must install at least one sampling point for the measurement of PM<sub>2.5</sub> in rural background locations.

## CHAPTER 2

### Ozone

#### Assessment requirements

- 8.—(1) The Welsh Ministers must assess the level of ozone in ambient air in each zone.
- (2) The Welsh Ministers must ensure, for the purposes of paragraph (1), that fixed measurements are taken in any zone where the level of ozone has exceeded the long-term objectives specified in Schedule 3 during any of the five years preceding those measurements.
- (3) In any zone where fixed measurements are supplemented by modelling or indicative measurements or both, the Welsh Ministers must take account of the results of those supplementary methods for the purposes of paragraph (1).
- (4) The data quality objectives and requirements set out in Sections A and C of Annex I to Directive [2008/50/EC](#) must be applied in carrying out the assessment referred to in paragraph (1).
- (5) Save as provided in paragraph (6), measurements for the purposes of paragraph (1) must be taken in accordance with the reference measurement methods specified in point 8 of Section A of Annex VI to Directive [2008/50/EC](#).
- (6) Alternative methods to those referred to in paragraph (5) may be used provided the conditions set out in Section B of Annex VI to Directive [2008/50/EC](#) are complied with.

#### Location and number of sampling points

- 9.—(1) The Welsh Ministers must install sampling points in accordance with the criteria set out in Annex VIII to Directive [2008/50/EC](#) for the assessment of ozone.
- (2) In zones where fixed measurements are the sole source of information for the assessment of air quality, the number of sampling points must be greater than or equal to the minimum number specified in Section A of Annex IX to Directive [2008/50/EC](#).
- (3) In zones where the level of ozone has been below the long-term objectives for each of the previous five years of measurement, the number of sampling points must be determined in accordance with the criteria set out in Section B of Annex IX to Directive [2008/50/EC](#).
- (4) In zones where the information from fixed measurements is supplemented by information from modelling or indicative measurements or both, the number of sampling points referred to in paragraph (2) may be reduced provided that the following conditions are met—
  - (a) the supplementary methods provide sufficient information for the assessment of air quality in relation to target values, long-term objectives and information and alert thresholds,
  - (b) the number of sampling points to be installed and the spatial resolution of supplementary methods are sufficient for the level of ozone to be established in accordance with the data quality objectives set out in Section A of Annex I to Directive [2008/50/EC](#) and to enable assessment results to meet the criteria specified in Section B of the same Annex,
  - (c) there is at least one sampling point in each zone, with a minimum of one sampling point per two million inhabitants or one sampling point per 50,000 km<sup>2</sup>, whichever produces the greater number of sampling points, and

- (d) nitrogen dioxide is measured at all remaining sampling points except those that are rural background stations.
- (5) The Welsh Ministers must ensure that nitrogen dioxide is measured at no less than 50% of the sampling points required under Section A of Annex IX to Directive [2008/50/EC](#).
- (6) The measurement referred to in paragraph (5) must be continuous except at rural background stations.
- (7) In this regulation, “rural background stations” (“*gorsafoedd cefndir gwledig*”) has the meaning given by Section A of Annex VIII to Directive [2008/50/EC](#).

### CHAPTER 3

Arsenic, cadmium, mercury, nickel, benzo(a)pyrene and other polycyclic aromatic hydrocarbons

#### Assessment thresholds

- 10.**—(1) The Welsh Ministers must classify each zone according to whether or not the upper or lower assessment thresholds specified in Section I of Annex II to Directive [2004/107/EC](#) are exceeded in relation to arsenic, cadmium, nickel and benzo(a)pyrene.
- (2) The Welsh Ministers must review the classification of zones in paragraph (1) at least every five years, and must do so more frequently than every five years if there are significant changes in the activities which may affect levels of the pollutants referred to in paragraph (1) in ambient air.
- (3) When reviewing the classification of zones in accordance with assessment thresholds, the Welsh Ministers must comply with Section II of Annex II to Directive [2004/107/EC](#).

#### Assessment requirements

- 11.**—(1) The Welsh Ministers must assess the level of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air in each zone in accordance with paragraphs (2) to (4).
- (2) In zones where the level of any pollutant mentioned in paragraph (1) exceeds the upper assessment threshold for that pollutant referred to in regulation 10, fixed measurements must be used in relation to that pollutant, but may be supplemented by modelling in order to provide an adequate level of information on ambient air quality.
- (3) In zones where the level of any pollutant mentioned in paragraph (1) is between the upper and lower assessment thresholds for that pollutant referred to in regulation 10 over a representative period, fixed measurements must be used in relation to that pollutant but may be combined with indicative measurements as referred to in Section I of Annex IV to Directive [2004/107/EC](#) or modelling, or both.
- (4) In zones where the level of any pollutant mentioned in paragraph (1) is below the lower assessment threshold for that pollutant referred to in regulation 10, modelling or objective estimation techniques or both may be used instead of measurement in relation to that pollutant.
- (5) In addition to the assessment referred to in paragraphs (1) to (4), the Welsh Ministers must monitor concentrations of other relevant polycyclic aromatic hydrocarbons in addition to benzo(a)pyrene as the Welsh Ministers think fit, including at least the following—
- (a) benzo(a)anthracene,
  - (b) benzo(b)fluoranthene,
  - (c) benzo(j)fluoranthene,
  - (d) benzo(k)fluoranthene,
  - (e) indeno(1,2,3-cd)pyrene,
  - (f) dibenz(a,h)anthracene.

(6) The Welsh Ministers must, in addition, operate background sampling points to provide indicative measurements of—

- (a) the concentrations of arsenic, cadmium, nickel, total gaseous mercury, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in paragraph (5) in ambient air, and
- (b) the total deposition rates of arsenic, cadmium, mercury, nickel, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in paragraph (5).

(7) Measurements for the purposes of paragraph (6) must be coordinated with the monitoring strategy and measurement programme of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP), where appropriate.

(8) The data quality objectives and requirements set out in Annex IV to Directive [2004/107/EC](#) must be applied in carrying out the assessments referred to in paragraphs (1), (5) and (6).

(9) Measurements in this regulation must be taken in accordance with the reference measurement methods specified in Annex V to Directive [2004/107/EC](#).

(10) In this regulation, “total gaseous mercury” (“*mercwri nwyol llwyr*”) means elemental mercury vapour (Hg0) and reactive gaseous mercury, being water-soluble mercury species with sufficiently high vapour pressure to exist in the gas phase.

### **Location and number of sampling points and monitoring sites**

**12.—**(1) The Welsh Ministers must install sampling points in accordance with the criteria set out in Sections I, II and IV of Annex III to Directive [2004/107/EC](#) for the assessment of arsenic, cadmium, nickel and benzo(a)pyrene.

(2) The Welsh Ministers must ensure that monitoring sites for polycyclic aromatic hydrocarbons other than benzo(a)pyrene—

- (a) are located together with sampling points for benzo(a)pyrene,
- (b) are located in accordance with the criteria set out in Sections I to III of Annex III to Directive [2004/107/EC](#), and
- (c) are selected so that geographical variations and long-term trends in the concentrations of polycyclic aromatic hydrocarbons can be identified.

(3) The Welsh Ministers must ensure that—

- (a) at least one background sampling point is installed to provide indicative measurements for the purposes of paragraph (6) of regulation 11,
- (b) such background sampling points are located in accordance with the criteria set out in Sections I to III of Annex III to Directive [2004/107/EC](#), and
- (c) such background sampling points are selected so that geographical variations and long-term trends in the concentrations and total deposition rates of the relevant pollutants can be identified.