DETR
ENVIRONMENT TRANSPORT REGIONS

Network

The newsletter for the UK Air Quality Monitoring Network Issue 4

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AURN set to grow as a result of the 1st Daughter Directive on Ambient Air Quality

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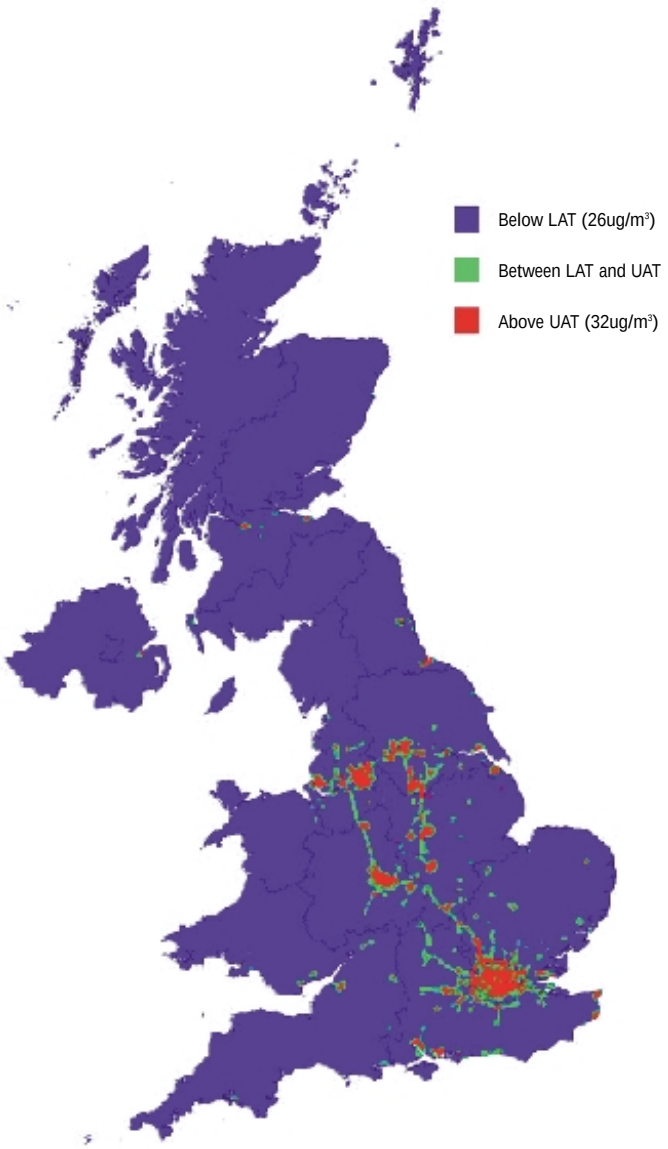

As a result of the 1st Daughter Directive on ambient air quality (European Council Directive 1999/30/EC), the AURN is set to grow from its present number of 89 sites by the end of 2000. It is envisaged that the majority of these additional sites are likely to come from the affiliation of existing Local Authority sites into the Network.

Over the last year DETR, The Scottish Executive, National Assembly for Wales and the DoE in Northern Ireland have been performing an Article 5 Assessment of ambient air quality in the UK as part of their obligation to implement the 1st Daughter Directive. This preliminary investigation of ambient air quality formerly establishes estimates for the overall distribution and levels of pollutants covered by the 1st Daughter Directive. Moreover, it identifies additional monitoring requirements in order to meet compliance.

Under Article 5, estimates of the overall distribution of pollution concentrations in the UK have been derived using measurement data from the existing AURN. This has also included using empirically modelled high-resolution maps and dispersion modelling – similar to that used by the DETR in the review of the NAQS. As part of the Article 5 assessment, the UK is considering an approach where agglomerations (towns with a population >250,000) and non-agglomeration zones are identified.

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Figure 1: Nitrogen dioxide Article 5 assessment map for urban background area (ug/m3)

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AURN set to grow

Estimated pollutant concentrations within each zone have been compared with the relevant Assessment Thresholds, Limit Values and the Margins of Tolerance as defined in the Daughter Directive (Figure 1). Areas requiring additional monitoring have been identified by an examination of the current AURN, and its coverage of areas with high estimated concentrations (i.e. those above the relevant Assessment Thresholds). Table 1 presents the number of additional monitors required within the UK by the Article 5 process for formal compliance with the 1st Daughter Directive. The numbers take account both the current AURN and availability of other means of assessment. That is, a key feature of the new Daughter Directives is that they formally recognize both indicative assessment techniques (diffusion tubes and bubblers) and atmospheric models as valid methods for substantiating formal compliance with Directive Limit Values.
Hence, it is likely that the UK NO_2 Diffusion Tube Network, the Smoke and SO_2 Network, and national pollutant models will form part of a package for the UK to show compliance.

Table 1 Proposed additional monitors required in the UK to demonstrate formal compliance with the 1st Daughter Directive

Proposed location	Pollutants	Location
Brighton/Hove/Little'ton Agglomeration	SO2 & PM10	Roadside
Bournemouth Agglomeration	NOx, SO2 & PM10	Roadside
Coventry Agglomeration	PM10	Urban background
Portsmouth Agglomeration	NOx, SO2 & PM10	Urban background
Central Scotland Zone	NOx, SO2 & PM10	Urban background
East Midlands Zone	NOx, SO2 & PM10	Roadside
Highlands Zone	NOx & PM10	Roadside
North East Scotland Zone	SO2	Urban background
North East Zone	NOx, SO2 & PM10	Roadside
North Wales Zone	NOx, SO2 & PM10	Roadside
North West & Merseyside Zone	NOx, SO2 & PM10	Urban background
Scottish Borders Zone	NOx & PM10	Roadside
South East Zone	PM10	Urban background
South Wales Zone	NOx, SO2 & PM10	Urban background

Progress with instrument certification (MCERTS)

The Environment Agency has completed its consultation for the proposals for ambient air monitoring and manual stack testing. Over 850 responses for the proposals for MCERTS for stack-testing were received. Overall, respondents were in favour of the MCERTS scheme with some detailed responses and suggestions. These comments are currently being addressed and, where appropriate the Scheme documents are being modified to take them into account. In addition, responses from overseas were received from the consultation that highlighting the growing international interest in MCERTS.

In line with the work of CEN 264, the MCERTS documents are also being revised to cover quality assurance issues in monitoring and the CEN draft standards on instrument performance necessary to comply with the EC Directives. The Scheme is due to be open for business around the end of 2000.

For further information on the MCERTS Scheme see http://www.environment-agency.gov.uk

Results of measurement comparisons around Europe

Several exercises have recently been conducted to compare the accuracy of air quality measurements around Europe. The EU funded 'Harmonization of Air Quality Measurements in Europe' (HAMAQ) project, coordinated by NPL, involved six European partners assessing and subsequently improving the comparability of a range of 'primary' methods used to certify gas calibration mixtures, and also the validity of using gas cylinders as transfer standards. The gases covered were CO, NO, NOx, SO2 and benzene, and after two comprehensive inter-comparisons the level of agreement between primary facilities for these compounds was generally better than 3%.

Ozone measurements are compared through NPL's transfer standard being taken to many European standards labs, as part of the EUROMET project.

Update

Millennium Compliance (Y2K)

After considerable effort by all participants of the AURN, CMCU are please to announce that the transition of the network into the year 2000 passed smoothly on December 31 last year without major disruption to normal network operations. Only two stations (Brighton Roadside and Hove Roadside) incurred data loss as a direct consequence of the move to the year 2000. In each case, this was the result of data logger non-compliant software. Contrary to the previously reported assurances at these sites, notification of non-compliant logger issues and replacements to compliant versions did not take place until late December 1999, when tests produced comms failure. As a consequence data loss was incurred at both sites. Subsequent upgrades have since rectified this situation.

CMCU would like to thank all participants of the AURN – LSOs and ESUs for all their hard work during the period of uncertainty leading up to, and including, the transition to the year 2000.

News update

Site Visits – Dissemination of Erroneous Data

As you are aware, the AURN data appears on Ceefax, Teletext and the DETR archive pages of the WWW. Part of CMCU's role is to send the data to the DDU (Data Dissemination Unit) within a very tight time frame in order to ensure the transmission of data every hour. A recent series of incidents whereby erroneously high concentrations of pollutants have been disseminated has recently occurred. This apparent increase in the frequency of these occurrences is of particular concern to CMCU, the DETR and the Devolved Administrations. As a result, CMCU would like to remind all LSOs, ESU and QA/QC units to pay special attention to this issue when engaged upon site activity. It is absolutely imperative that the "out of service" facility is used correctly and that all zero/span gas checks and TEOM servicing is undertaken only when it is clear that the data is "flagged" accordingly to prevent the recording of data in question as ambient. It should also be borne in mind that the instrument response should return to normal before switching the system back into service. CMCU request that any slight suspicions of an error made in the use of the "out of service" facility be reported to them immediately in order to reduce the risk of dissemination of false data to the media.

Site calibration cylinders

The issue of calibration cylinders has now been fully reviewed by NPL in the light of comments made during last year's Annual Review Meeting. Cylinders currently need replacing around the Network at a rate of about 120 per year. NPL now contacts all LSOs whose cylinders are to be replaced as a matter of course. It is of course in

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EDITORIAL

At a crucial time when Local Authorities are required to respond to Government on air quality it is easy to lose sight of the fact that, in addition, the DETR and Devolved Administrations are required to respond to the EU under the Framework Directive and subsequent Daughter Directives. Increasingly, the activities of the AURN and non-automatic networks within the UK are reflecting these needs. How these requirements are translated into the UK is highlighted in a number of articles in this edition of NETWORK.

With the Preliminary Assessment (Article 5) required to be reported on within the next year, the scope and size of the AURN is set to change further (see lead article). In addition, in last month's copy of *Network* we reported the current UK response to uncertainty surrounding fine particulate measurements. The need to seek confidence in the results of automatic and non-automatic monitoring data has become increasingly important in order to fulfil the requirements of the data quality objective. Both MCERTS and HAMAQ (see this issue) will increase the confidence in monitor performance. Moreover, harmonization of monitoring techniques (through equivalence exercises where necessary) offer a better understanding of the extent and occurrence of pollutants across Member States whilst removing confounding affects attributed to differences in monitoring techniques.

One thing is sure, the need for transparency in the everyday activities of the AURN is becoming essential if compliance with EU drivers is to be fulfilled.

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Acknowledgment:
Many thanks to the following people who have contributed to this edition of *Network*:
Geoff Broughton, Tony Bush, Ray Evans, Paul Quincey, Duncan Pritchard-Davies

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everybody's interests to conserve calibration gas, and those changing cylinders should follow the Site Operators Manual to avoid accidental venting of the contents.

Contact: Alan Woolley on 020 8943 6232, or email alan.woolley@npl.co.uk *and* paul.quincey@npl.co.uk *if you have any queries surrounding calibration cylinders at your site.*

CMCU Relocates to Central London Offices

CMCU will be relocating offices from its current Croydon location to its Central London office in Southwark – Great Guildford House, Great Guildford Street, Southwark, London, SE1 0ES.

The move is scheduled to take place at the end of July 2000 and will ensure that minimum disruption to the daily operations of the AURN occurs. As a result, readers of *NETWORK* should note the provisional telephone number to be used in the 'Who's Who'. This should be used to contact CMCU until further notice when direct-dial numbers will be disseminated.

How to get the latest air quality data

Did you know that you can be emailed the latest air quality data every day free of charge? Validated data, as you probably already know, is added to the National Air Quality Information Archive (http://www.aeat.co.uk/netcen/airqual) nearly every hour. This is the place to view data and statistics for your local site and to download large blocks of ratified data. You can, however, also receive provisionally validated data from AEA Technology for the last 24 hours for your local site or all the sites in your forecast region by email. This is simple to set-up, the data arrives automatically and you can easily view or delete your mail. This is ideal for keeping in touch with concentrations in your region, either every day or during episode periods. Ratified data are of course, only available on the web archive.

Contact Geoff.Broughton@aeat.co.uk for more details.

WHO'S WHO?

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intercalibrations cylinder supplies

Who does what in the AURN?

The successful operation of the AURN is dependent on the commitment and dedication from a large number of organisations, and the individuals within them. *Contact Fax: 020 7261 1425*

A brief reminder of who does what:

Central Management & Co-ordination Unit (CMCU):
Responsible for setting up new sites within the Network (including site selection and procurement of equipment); Network operation (appointment of ESUs and LSOs, co-ordination of equipment calibration and servicing); data collection and validation; data reporting.

Quality Assurance/Quality Control (QA/QC) Units:
Responsible for providing independent QA/QC checks on Network operations. This includes routine inter-calibration audits and data ratification. The QA/QC Units also provide advice on operation issues to the CMCU.

Equipment Service Units (ESUs):
Responsible for the routine and emergency servicing of analysers and ancillary equipment.

Local Site Operators (LSOs):
Responsible for undertaking routine site calibrations. The LSOs also provide invaluable information and feedback on site performance to both CMCU and QA/QC Units, and undertake initial investigations of site problems.

For further information please contact:

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