

## Air Quality remains largely unchanged

**The short term changes seen in pollution levels in the UK are mainly dictated by the weather. As the weather in this country is changeable, the behaviour of pollution as a result is extremely variable. The situation is complicated further by atmospheric chemistry; pollutants react with other gases in the atmosphere and deposit onto surfaces such as roads and buildings.**

Analysing the monitoring data collected by the Herts and Beds Air Pollution Monitoring network allows the assessment of air quality from day to day, establishes which areas are worse than others and whether pollutant levels are rising or falling. The data can be used to see how pollutants interact with each other and how they relate to traffic levels and industrial activity. By studying the relationship between meteorology and air quality, it is possible to forecast which weather conditions will give rise to pollution episodes.

Computer modelling is used to test “what if” scenarios. For example what if a supermarket was built in a town centre? Monitoring is used to verify these models and to ensure that they are accurate.

### How does pollution affect our health?

On an average day in the UK a healthy person is unlikely to experience any short-term health effects. However, sufferers of heart or lung illness may be adversely affected by day to day changes in the level of air pollutants. According to the British Lung Foundation, 1 in 5 people are at particular risk from air pollution.

Smoke, most commonly from diesel car exhausts, can affect the lungs when inhaled. Larger smoke particles are trapped in the upper airways, but smaller particles (PM<sub>10</sub>) may travel deeper into the lungs causing increased breathing difficulties in people with lung conditions.

Nitrogen dioxide (NO<sub>2</sub>) is produced by the burning of fuel in power stations and cars. Nitrogen dioxide irritates the lining of the airways, and together with other pollutants can have a bad effect on some people with asthma.

Ozone (O<sub>3</sub>) is the main ingredient of photochemical smog. In Britain ozone levels are highest during hot summers, as can be seen for exceedance figures for 2003. Ozone irritates the lungs, causing coughing and chest pain. It also stings the eyes, nose and throat. People with lung diseases are particularly at risk, but up to a third of normal healthy people may develop symptoms when they exercise outdoors.

## Indicator AQ1 - Air Pollution

This indicator shows the quality of the county’s air against the Government’s five air quality criteria (see indicator graphs below for criteria). Moderate ozone levels were recorded at all sites during 2008, however the East Herts Rural site was not recording during the main events of the year. As a result the levels recorded for the rural ozone indicator do not truly reflect the level of rural ozone in the Hertfordshire area. Overall there was a slight increase in ozone levels in 2008.

Moderate PM<sub>10</sub> was recorded at all network sites. A day of high PM<sub>10</sub> was recorded at three roadside sites. The annual mean average of PM<sub>10</sub> concentrations recorded at all sites continued to indicate an overall decrease in 2008. There was a marked decrease at both East Herts and Broxbourne roadside sites. However these recorded higher levels than the other sites during the previous year.

There were no moderate incidences of nitrogen dioxide in 2008. Unlike 2007, no site exceeded the maximum level set for nitrogen dioxide. Most network sites remained relatively stable or showed a slight downturn from the end of 2007.

