

Bonfire Night, Air Pollution Update - Monday 7th November 2011

Over the weekend, two low pressure systems to the north-west and the south-east of the UK influenced weather in the north-west of Scotland and the south-east of England. A tongue of high pressure moving north-eastward brought fine and settled weather to the Midlands, stretching north-east across the UK (see Fig 1). Although incoming air to the UK was from the Atlantic and hence relatively clean, the high pressure minimised dispersion, leading to the build-up of particulate matter generated by local Bonfire Night celebrations held on Saturday night. Concentrations of PM₁₀ increased to Very High levels in some localised urban areas situated in this band. PM₁₀ concentrations at these locations were predominantly in the PM_{2.5} size band. The concurrent Low NO_x and SO₂ concentrations, the time of day that the peak occurred (Saturday, 18:00-00:00), and the elevated concentrations that can also be seen in Figure 2 on Sunday evening, suggest that it is highly unlikely that road transport or industry were the sources of the peak in particulate matter.

Levels of particulate matter are currently measuring Low at all AURN monitoring sites (see Fig 2), however 24-hour mean levels of particulate matter are still picking up Saturday's elevated concentrations:

- Moderate at Carlisle and Bury Roadside;
- High at Warrington, Birmingham Tyburn, Birmingham Tyburn Roadside, Grangemouth and Glasgow Centre;
- Very High at Stoke on Trent Centre and Salford Eccles.

Ambient concentrations are set to continue to decrease with time, however the relatively settled weather that persists in this area and little rain means that this has not been immediate.

Figure 1: UKMO 60 hour MSLP & Thickness. Valid 00 UTC Sun 06 Nov 2011

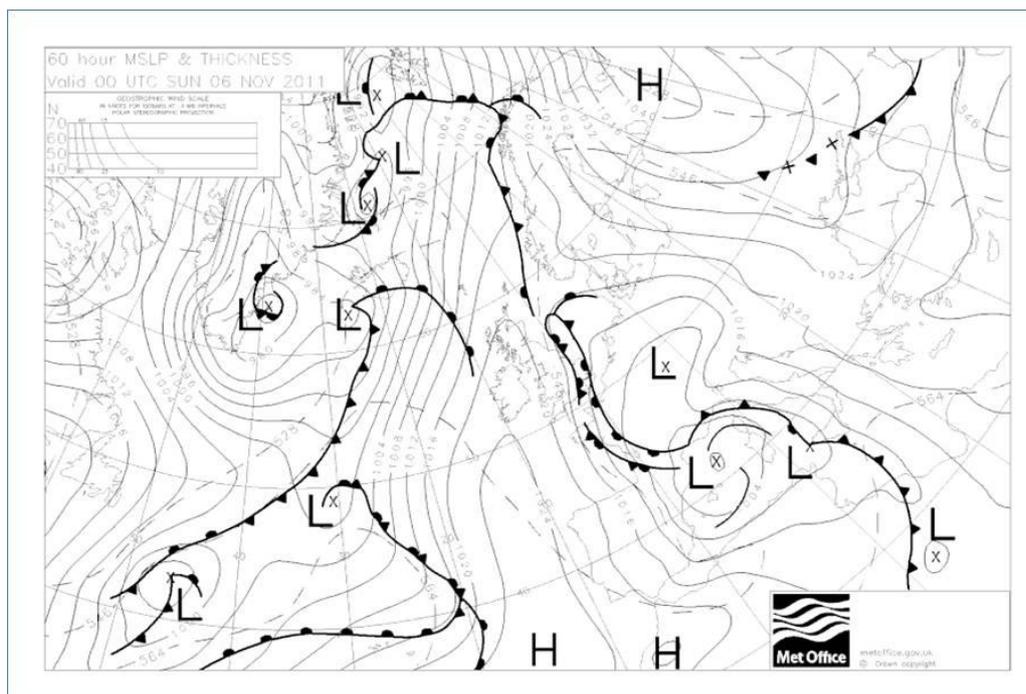
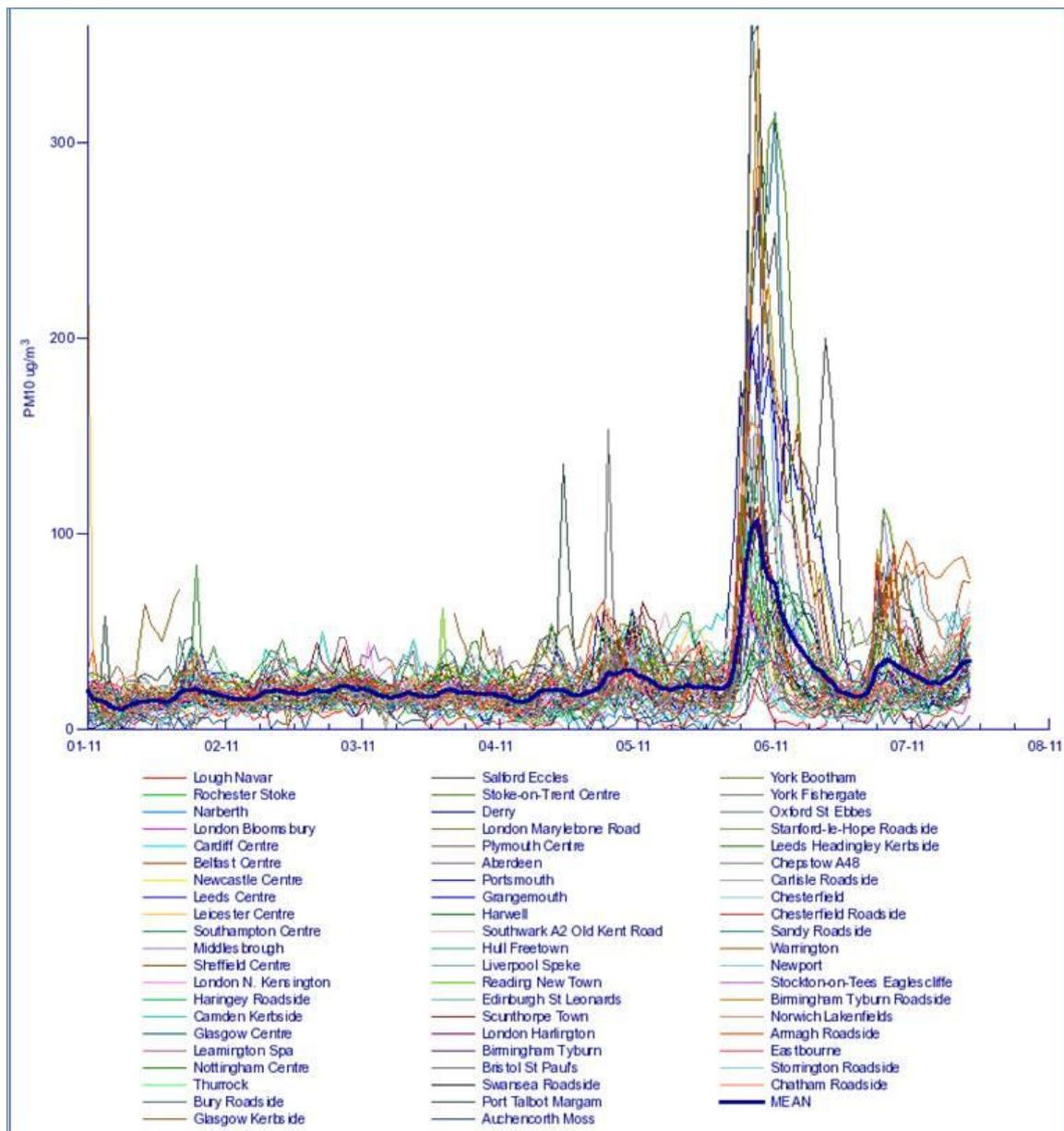


Figure 2: PM₁₀ concentrations recorded at AURN sites, 01 – 07 November 2011



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