

AIR QUALITY MONITORING, ASSESSMENT AND MANAGEMENT AT PORT TALBOT, UK

B. Tate¹, J. Stephens¹, P. Hollingsworth², R. Leonard³, **B. Ng**⁴, J. P. Shi⁴

¹*The Environment Agency, Maes Mewydd, UK*

²*Neath Port Talbot County Borough Council, Neath Civic Centre, Neath, UK*

³*Corus Port Talbot Works, Port Talbot, UK*

⁴*Air Quality Modelling and Assessment Unit, The Environment Agency, Cardiff, UK*

A series of monitoring campaigns of PM₁₀ using automatic cartridge collection unit and TEOM systems were carried out at Port Talbot, UK during the period 1997 to 2001. Air quality modelling exercises and fingerprinting using sample analysis were also conducted. This study was the first of its kind in the UK Air Quality Review and Assessment process. Its aim was to identify the causes of exceedance of the National Air Quality Objective for PM₁₀ at Port Talbot, so that an Air Quality Management Area Action Plan could be formulated. In the investigation of source apportionment of PM₁₀, contributions from both local sources and transboundary pollution were assessed. Local sources including traffic, point and fugitive emissions from an integrated iron and steel works, and sea spray were examined. Directional monitoring, together with modelling, has enabled reliable estimates of contributions from different sources to be made. Fugitive emissions from blast furnaces at a local integrated iron and steel works were found to be the major contributors to the measured PM₁₀ peak levels. Different potential control measures were proposed to reduce PM₁₀ emissions from these furnaces and modelling was used to assess the air quality impact of these abatement scenarios. Based on the results of this study, the steel works and the Environment Agency were able to agree improvement measures as part of the Local Authority's Air Quality Management Area Action Plan to ensure that the National Air Quality Objective of PM₁₀ is likely to be met by 2005.