4.0 Update and Screening Assessment for 1,3 Butadiene

4.1 The national perspective

The main source of 1,3-butadiene in the UK is emissions from motor vehicle exhausts. 1,3-butadiene is also an important industrial chemical which is handled in bulk at a small number of industrial premises.

Modelling and monitoring undertaken at a national level indicates that existing national policies should generally be sufficient to achieve the objective for 1,3-butadiene. However, some localised exceedances of the objective may occur close to major industrial processes.[1]

4.2 The local perspective

In the First Stage Review and Assessment of Air Quality in York 1,3-butadiene was assessed against the following objective:

> '*A running annual average of 1ppb or less to be achieved by the end of 2005'.*

It was concluded that this objective would be met in York without the need for further action at a local level.

In the Second and Third Stage Review and Assessment of Air Quality in York benzene was assessed against a revised objective which was:

> ***'****A running annual mean of 2.25 mg/m^3 (1ppb) or less to be achieved by the end of 2003.'*

It was concluded that this objective would also be met in York without the need for further action at a local level.

4.3 Scope of the update and screening assessment for 1,3-butadiene

For the purpose of this update and screening assessment 1,3-butadiene has been assessed against the current objective which is:

> ***'****A running annual mean of 2.25 mg/m^3 (1ppb) or less to be achieved by the end of 2003.'*

In accordance with the air quality guidance note LAQM.TG(03) the following items have been considered:

[1] DEFRA Review and Assessment: Technical Guidance LAQM.TG (03) 2003

- 1,3-butadiene monitoring data
- New industrial sources
- Existing industrial sources with significantly increased emissions

4.4 Assessment of 1,3 butadiene monitoring data for York

Previous reviews and assessments of air quality in York have not identified any risk of the current 1,3 butadiene objective being breached. Consequently no monitoring of 1,3-butadiene has been undertaken in York.

As the background pollutant maps for 1,3 butadiene, shown on the national air quality archive (http://www.airquality.co.uk/archive/laqm/tools.php), have not been revised since submission of City of York Council's last Update and Screening Assessment in 2003, the figures presented in this earlier report still provide the best estimate of likely 1,3 butadiene concentrations in the city. This report showed that the estimated annual average background 1,3 butadiene concentrations in York are already well below the objective levels.

4.5 Assessment of 1,3-butadiene from industrial sources

4.5.1 Assessment procedure

National monitoring and modelling suggests that any breaches of the current objective for 1,3-butadiene will be associated with industrial processes. For the purpose of assessing 1,3-butadiene from industry local authorities are required to undertake the following:

1. Identify all new industrial sources of 1,3-butadiene which have entered the area since the last round of reviews and assessments. Significant emitters of 1,3-butadiene are listed in Annex 2 of technical guidance note LAQM.TG(03).

2. Identify all existing industrial sources of 1,3-butadiene which have increased their emissions substantially since the last round of reviews and assessments.

3. If any new or substantially increased industrial sources of 1,3-butadiene are identified the nomograms in section 4.16 of the technical guidance note LAQM.TG(02) should be used to assess the risk of breaching the objective level.

4. If a risk of breaching the 1,3 butadiene objective is identified authorities should proceed to a detailed review and assessment.

4.5.2 Assessment of industry in York

Annex 2 of technical guidance note LAQM.TG(02) lists the following processes as being significant 1,3-butadiene emitters:

- petrochemical processes
- rubber processes

For the purpose of this update and screening assessment all the Part A and Part B processes in the vicinity of York have been reviewed using information posted on the Internet (http://www.environment-agency.gov.uk), and by consulting the relevant public registers.

In accordance with guidance note LAQM.TG(03), City of York Council also needs to consider the impact of emissions stacks within neighbouring authorities, if there is the potential for these to be significant. A summary of all the authorised processes in and around York can be found at Appendix 1.

It can be seen from the table in Appendix 1 that there are no petrochemical or rubber processes in, or close to, York. This indicates that there is no risk of industrial emissions giving rise to breaches of the current 1,3-butadiene objective in York.

4.6 Conclusions from the update and screening of 1,3 butadiene

Based on this assessment it is concluded that City of York Council is not required to progress to a detailed assessment of 1,3-butadiene at this time. It should however undertake a further update and screening exercise for 1,3-butadiene in April 2009.