Craigavon Borough Council

Updating and Screening Assessment of Local Air Quality

April 2006

Executive Summary

In 1995 the Environment Act provided for a national air quality strategy requiring local authorities carry out reviews and assessments of the air quality in their area for seven specific pollutants. These are; carbon monoxide (CO), benzene, 1,3-butadiene, nitrogen dioxide (NO2), lead, sulphur dioxide (SO2) and PM10 (Particles under 10μm in diameter).

This document is an Updating and Screening Assessment of air quality across the Craigavon Borough Council area. Craigavon Borough Council has previously carried out a combined stage 2/3 Review and Assessment of Air Quality Council from 2001 to 2005, and has declared no AQMA's to date.

The first review and assessment procedure was divided into four stages and progression to each stage was dependent upon the air quality in each local authority area. Authorities were required to progress to the next stage only if there was a likelihood of exceeding the air quality standards and objectives.

In Craigavon Borough Council's area, the second / third stage review and assessment concluded that there was not a likelihood of exceedences of the annual Particulate Matter (PM_{10}) or Sulphur Dioxide (SO_2).

In this, the second round of review and assessment, local authorities are required to carry out an Updating and Screening Assessment (USA) by the end of April 2006. The USA is intended to identify significant changes that may have occurred since the first round of Review and Assessment, which might lead to a risk of the air quality objectives being exceeded. These changes might include new monitoring data, revised objectives or new or increased emission sources. All seven pollutants are covered by the assessment and there are revised objectives for carbon monoxide and benzene.

This report has concluded that Craigavon Borough Council is not required to proceed to a more detailed assessment for any of the prescribed pollutants.
Craigavon Borough Council will continue to uphold the good air quality in the Borough by adopting the recommendations outlined in its recently published Local Air Quality Strategy 2006- 2010.

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INTRODUCTION

1.0 This document is an Updating and Screening Assessment of air quality across the Craigavon Borough Council Borough, which follows on from the Reviews and Assessments of Air Quality carried out by Craigavon Borough Council from 2000 to 2005.

1.1 Background

In 1995 the Environment Act provided for a national air quality strategy requiring local authorities to carry out reviews and assessments of the air quality in their area for seven specific pollutants which are; carbon monoxide (CO), benzene, 1,3-butadiene, nitrogen dioxide (NO_2), lead, sulphur dioxide (SO_2) and PM_{10} (Particles under 10μm in diameter). Guidance on how to carry out the reviews and assessments was published by the Department of Environment, Food and Regions Affairs (DEFRA). The review and assessment procedure was divided into four stages. The first was an initial desk-top study to identify significant sources of pollution in areas where there are relative "receptors". Where potential exceedences were identified the second stage was to include simple monitoring and modelling of the identified pollutants to identify whether there were likely to be exceedences of the air quality standards. Where such exceedences were thought likely, a stage three study required more detailed and complex modelling and monitoring of the relevant pollutants. Following the third stage, Local Authorities were expected to come to a conclusion about whether the air quality objectives would be achieved. If the air quality objectives were not met an Air Quality Management Area (AQMA) would have to be declared. Stage four studies were carried out where further investigation was required following the declaration of Air Quality Management Areas.

In Craigavon Borough Council's area, the first stage of the review and assessment process was published in 2000 and identified two pollutants (NO_2 and SO_2) with potential to result in an exceedence of the air quality standards, and thus a stage two study was carried out to assess them in more detail. The third stage report was appraised by the University of West England (UWE) on behalf of the Department of Environment's Environment and Heritage Service (EHS), and accepted without any conditions The conclusions reached in the Stage 2/3 Review and Assessment and the subsequent supplementary document, were that no further detailed assessments were required at this time for any of the pollutants reviewed and that there was currently no requirement for any statutory Air Quality Management Areas (AQMA's) to be declared.

Preparation of this Updating and Screening Assessment is the first activity prescribed in the timetable for the Second Round of reviews and assessments as set out in LAQM Policy Guidance LAQM.PGNI(03).This report has been produced in accordance with guidance detailed in Progress Report Guidance LAQM.PRGNI(04), and with the help of checklists published by DEFRA which were accessed via their website (www.defra.gov.uk) This report summarises the

findings of the LAQM activities undertaken by the Council including the currently available air quality monitoring results for 2005.

1.2 Updating and Screening Assessment

To keep air quality on the agenda for all local authorities, and ensure that standards are maintained, new guidance – Local Air Quality Management Technical Guidance (03) (LAQM TG(03)) - has been issued by DEFRA which requires all local authorities in Northern Ireland to carry out an Updating and Screening Assessment (USA) by the end of April 2006. The USA is intended to identify significant changes that may have occurred since the last Review and Assessment, which might lead to a risk of the air quality objectives being exceeded. These might include new monitoring data, revised objectives or new or increased emission. All seven pollutants should be covered and the assessment is to be based on the use of the checklists provided in LAQM TG(03), on Defra's website, (www,defra.gov.uk) and on the Local Air Quality Management web site at *www.airquality.co.uk/archive/laqm/laqm.php*, which gives support with a package of tools and Helpdesk services. These will be used to identify significant changes requiring further consideration. Where such changes are identified, screening or other tools should be applied to determine whether or not there is sufficient risk of exceedence of the objective. Finally, a conclusion should be reached as to whether a detailed assessment is required for each or any pollutant and this must be carried out by the end of April 2007. Defra has published a number of Updating and Screening Assessment checklists to be used in the compilation of this report. The checklists help to ensure that all sources of pollution are identified and that new sources that were not applicable in the first round of review and assessment are now considered for evaluation at this stage. A copy of the checklist is available in Appendix 8 at the back of this report.

The guidance also sets out a timetable for future reviews and assessments up to 2010 (LAQM TG(03)).

1.3 The UK Air Quality Strategy

The Air Quality Strategy provides a co-ordinated and proactive approach to the regulation of ambient air quality by setting standards and objectives for pollutants of greatest concern and introducing a system of Local Air Quality Management(LAQM).These have been made statute under EPA and associated regulations.

The main aim of the Strategy is to ensure

"that ambient air quality in public places poses no significant risk to health and quality of life."

Public places are those locations in the external environment where members of the public are likely to be regularly present and exposed to a specified pollutant over the averaging period indicated for the relevant objective.

The eight pollutants identified occur widely throughout the country and are known to pose a risk to human health as well as cause damage to crops, vegetation, eco systems, buildings and materials. They arise mainly from transport and industry.

The standards set are based purely on medical evidence of the effects of a pollutant on human health on the advice of the Expert Panel on Air Quality Standards (EPAQS). They are the atmospheric concentrations which are taken to indicate a certain level of environmental quality.

The objectives are the targets to be met to achieve the standards except where the objective derives from an Air Quality Daughter Directive limit value based on World Health Organisation guidelines. For some pollutants the strategy allows for stricter national objectives.

Table 1 overleaf indicates the seven pollutants addressed by the Air Quality Strategy for LAQM.

The eighth pollutant, ozone, will not be the subject of LAQM. Ozone is transboundary in nature in that ozone precursors emitted in one area lead to ozone formation in another. Reduction in levels can only be effectively addressed by international action.

1.4 Local Air Quality Management (LAQM)

LAQM places a responsibility for air pollution control at local authority level. Local authorities are required to carry out a review and assessment of ambient air quality throughout their area in relation to each of the specified pollutants. They must consider present and likely future pollutant levels and assess whether the relevant objective can be achieved by the designated deadline. Where the review and assessment indicates that objectives are not likely to be met in any location the local authority must designate the area as an Air Quality Management Area (AQMA).

Table 1

Pollutants identified in the Air Quality Strategy for Local Air Quality Management

Pollutant		**Objective**	
	Concentration	**Measured as**	**To be achieved by**
Benzene	16.25ug/m^3 (5 ppb)	running annual mean	31.12.2003
1,3 Butadiene	2.25 ug/m^3 (1 ppb)	running annual mean	31.12.2003
Carbon monoxide	11.6 mg/m^3 (10 ppm)	running 8-hour mean	31.12.2003
Lead	0.5 ug/m^3 0.25 ug/m^3	annual mean annual mean	31.12.2004 31.12.2008
Nitrogen dioxide	200 ug/m^3 (105 ppb) not to be exceeded more than 18 times a year	1 hour mean	31.12.2005
	40 ug/m^3 (21 ppb)	annual mean	31.12.2005
Particles (PM_{10})	50 ug/m^3 (gravimetric) not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 ug/m^3 (gravimetric)	annual mean	31.12.2004
Sulphur dioxide	350 ug/m^3 (132 ppb) not to be exceeded more than 24 times a year	1 hour mean	31.12.2004
	125 ug/m^3 (47 ppb) not to be exceeded more than 3 times a year	24 hour mean	31.12.2004
	266 ug/m^3 (100 ppb) not to be exceeded more than 35 times a year	15 minute mean	31.12.2005

1.5 Review and Assessment of Air Quality

Review and assessment of air quality is a 3 stage process.

Stage 1 - is an initial screening of all pollution sources within the local authority area and a collection of all relevant existing data.

Stage 2 - involves a further screening of locations identified by the first stage as potential areas of concern. These are likely to be areas where the highest concentrations of pollutants are likely to occur.

Stage 3 - requires a detailed and accurate assessment of a pollutant (by estimation or monitoring) where previous stages have revealed a significant risk of an air quality objective not being met.

An AQMA will only be declared where a third stage review and assessment has indicated that air quality objectives are unlikely to be met by the relevant deadline. Having designated an AQMA the local authority must draw up an action plan to address areas where an air pollution problem has been identified.

As well as enabling local authorities to fulfil statutory obligations under EPA the review and assessment provides a benchmark against which to measure future improvements in local ambient air quality. It creates public awareness of air quality issues and is one of the performance indicators in relation to Best Value.

All local authorities are encouraged by Government to prepare a local air quality strategy irrespective of the necessity for an action plan in relation to AQMA's. They should aim for an integrated approach to local air quality management taking into account domestic, commercial and industrial requirements as well as local environmental needs. The active support of public, private and voluntary sectors should be encouraged in the pursuit of better air quality.

1.6 The Northern Ireland Perspective

NI maintains its own legislative framework separate from that of the remainder of the UK. The approach to air quality control has historically been reactive and fragmented with legislation designed to deal mainly with pollution incidents and complaints. The burning of solid fuel has traditionally been the main source of air pollution. In view of this, regulation and monitoring has been limited to sulphur dioxide and smoke in the few larger urban areas. The current trend is that improvements resulting from the creation of Smoke Control Areas under the Clean Air Order are now being offset by an increasing contribution to air pollution from road traffic and industrial emissions. Many urban areas experience occasional periods of high pollution levels mainly from sulphur dioxide, particulates and nitrogen dioxide. Belfast has had the highest recorded levels of sulphur dioxide and particulates in the UK and NAQS objectives for nitrogen

dioxide have been exceeded in a number of towns. In recognition of this, monitoring of ambient air quality has expanded with many Borough councils voluntarily contributing to work carried out by the DOE (NI).

1.7 Craigavon Borough

Craigavon Borough covers approximately 151 square miles in the north of County Armagh and has a population of around 83,000. It is a predominantly rural area with a largely agricultural economic base. The main centres of population are Craigavon, Portadown and Lurgan town. Craigavon is the focus of administration and commercial activity in the Borough.

The Borough is dissected by two major traffic routes. The M1 from Belfast to Dungannon runs along the outskirts of Craigavon, Portadown and through a traditionally rural area. In recent years residential development has expanded in proximity to the carriageway. This is to some extent due to the area becoming a convenient satellite residential base for commuters to Belfast. The A3 from Lurgan to Armagh passes through the centre of Craigavon and Portadown.

Domestic fuel usage throughout the Borough has historically been based on solid fuel but, as with the province generally, the use of coal is declining.

Within the Borough of Craigavon there are smoke control areas in both the towns of Lurgan and Portadown and Craigavon centre itself is a smoke control area.

1.8 Consultation.

The first stage updating and screening assessment has been carried out in consultation with neighbouring authorities, the Environment and Heritage service, and DRD Roads Service. The council will continue to consult at all stages of the review and assessment procedure.

2.0 SOURCES OF POLLUTION IN CRAIGAVON.

2.01 Transport Sources.

The only transport related source of pollution in Craigavon Borough is road traffic. Road traffic emissions are a major contributor of most of the specified pollutants, particularly NO_2 and PM_{10}. The main problems occur in busy urban areas. The significant traffic routes in Craigavon are the M1 Belfast to Dungannon motorway and the A3 single carriageway from Lurgan to Armagh. The A76 single carriageway to Lurgan is part of a busy route which runs between the three most populated areas of Craigavon. None of these roads are prone to congestion within the Borough.

Table 2 below shows current and predicted traffic flows for these traffic routes.

Statistics are from automatic monitoring carried out by the Roads Service, an agency of the D.O.E. (N.I.).

Table 2

Location	2004	2006*
M1 Lough Road (J'ct 10) – Ballynacor (J'ct 11)	32,740	33,559[a]
M12	20,440	20,951[a]
A3 Northway, Portadown	27,250	27,795[b]
A3 Lake Road Craigavon	20,490	20,797[c]
A3 Armagh Road, Portadown	16,800	17,136[b]
A4 Portadown – Dungannon (The Birches)	5,360	5,440[c]
A76 Lough Road, Lurgan	12,390	12,576[c]

Annual average Daily Traffic flows – average vehicle counts per day.

a Predicted traffic flows based on 2.5% annual increase for Motorways
b Predicted traffic flows based on 2.0% annual increase for A-Roads
c Predicted traffic flows based on 1.5% annual increase for Other A-Roads

2.02 Industrial Sources

In Craigavon Borough there are a number of Industrial processes authorised by both the Industrial Pollution and Radiochemical Inspectorate (IPRI) and Craigavon Borough Council. Details are listed in Appendices 3 & 4.

2.03 Sources Outside the Borough

Craigavon has 5 neighbouring local authority areas (Appendix 1). All have been consulted and information has been provided on prescribed processes in each area. Consideration has been given to any such process falling within 15 km of Craigavon Borough in relation to their potential to affect pollutant objectives being achieved in this area.

2.04 Other Sources

Some sources may be insignificant when viewed separately but may be sufficiently numerous that the combined effect of emissions make a significant contribution to air pollution. These are regarded collectively as an 'area source'. There are no significant area sources which have been identified within Craigavon Borough at this time.

2.05 Proposed Development

There have been no proposed developments identified within Craigavon Borough that are likely to have a significant impact on Air Quality at this time.

3.0 REVIEW AND ASSESSMENT OF BENZENE

3.1 Introduction

The Government and the Devolved Administrations have adopted a running annual mean of 3.25 μg/m3 has been adopted as an additional objective, to be achieved by the end of 2010.

Box 3.1: Checklist for benzene		
Reference no	**Source, location or data that need to be assessed**	
A	Monitoring data	3.03
B	Very busy roads or junctions in built-up areas	3.04
C	Industrial sources	3.05
D	Petrol stations	3.06
E	Major fuel storage depots (petroleum only)	3.07

3.2 Result of first round of review and assessment of air quality

The first round of review and assessment of air quality for Craigavon Borough Council was taken only as far as stage one for benzene. At this time the government stated that existing national policies, particularly with regard to improvements in vehicle technology such as greater use of catalytic converters, were expected to deliver the national air quality objective by the end of 2005. The stage one report stated that there were no sources of benzene emissions or any major roads likely to lead to an exceedence of the air quality standards in Craigavon Borough.

3.3 Monitoring data

Craigavon Borough Council has carried out no monitoring of benzene.

3.4 Very busy roads or junctions in built-up areas

The guidance LAQM TG(03) states that EU legislation and national policy measures have led to a reduction in the benzene content of petrol from 5% to 1%. Benzene has the same criteria for busy roads as carbon monoxide. Again there are no heavily trafficked roads across the borough which are likely to lead to an exceedence of the air quality objective for benzene.

3.5 Industrial sources

There are no industrial sources of benzene emissions in Craigavon Borough, or in adjacent local authorities, which are likely to lead to an exceedence of the air quality objective.

3.6 Petrol stations

The main sources of benzene emissions in the UK are from petrol-engine vehicles, petrol refining and refuelling of vehicles at petrol stations forecourts. LAQM TG(03) states that petrol stations with a throughput of less than 2000m^3 are unlikely to have a significant effect on benzene emissions. The majority of petrol stations in the Craigavon Borough Council area have a throughput of more than 2000m^3 per year. LAQM TG(03) states that only petrol stations with a throughput of petrol of more than 2000m^3 per year which are close to a busy road with daily flows of more than 30,000 vehicles and with relevant receptors within 10m of the pumps should be considered. Craigavon Borough has no petrol stations that meet all of these criteria.

3.7 Major fuel storage depots (petroleum only)

There are no petroleum storage depots in the Craigavon Borough Council area or in adjacent local authorities.

3.8 Conclusion for benzene

On the basis of the above information Craigavon Borough Council is confident that the risk of the 2010 objective for benzene being exceeded in the Borough is negligible. It will therefore not be necessary to proceed to a Stage 2 review and assessment for benzene.

4.0: REVIEW AND ASSESSMENT OF 1,3-BUTADIENE

4.1 Introduction

The Government and the Devolved Administrations have adopted a maximum running annual mean concentration of 2.25 μg/m3 as an air quality standard for 1,3-butadiene. The objective is for the standard to be achieved by the end of 2003.

1,3 – butadiene is a hydrocarbon compound. It is, like benzene, a human carcinogen for which there is no absolutely safe level of exposure. It has been linked to increased risk of cancers of the lymphoid system and blood forming tissues, lymphomas and leukaemia.

The main source of 1,3 – butadiene is the combustion of petrol and diesel fuels. It is also an important industrial chemical used mainly in the production of synthetic rubber for tyres. Motor vehicle exhaust emissions are, however, the single dominant atmospheric source. The use of catalytic converters on vehicles reduces emissions but their effectiveness is diminished by poor vehicle maintenance.

Box 4.1: Checklist for 1,3-butadiene		
Reference no	**Source, location or data that need to be assessed**	
A	Monitoring data	4.03
B	New industrial sources	4.04
C	Existing industrial sources with significantly increased emissions	4.05

4.2 Result of first round of review and assessment of air quality for 1,3-butadiene

The first round of review and assessment of air quality was taken only as far as stage one for benzene in Craigavon Borough. At this time the government stated that existing national policies were expected to deliver the national air quality objective by the end of 2005. The stage one report concluded that there were no industrial sources of benzene emissions or any major roads likely to lead to an exceedence of the air quality standard for 1,3-butadiene in Craigavon, and concluded that it was likely that the air quality objective for 1,3-butadiene would be met.

4.3 Monitoring data

Craigavon Borough Council has carried out no monitoring of 1,3-butadiene as it was thought unlikely that concentrations would exceed those found at the first stage.

4.4 New industrial sources

There have been no new industrial sources of 1,3-butadiene in Craigavon Borough, or in adjacent local authorities, since the first review and assessment.

4.5 Existing industrial sources with significantly increased emissions

There are no existing industrial sources of 1,3-butadiene in Craigavon Borough, or in adjacent local authorities.

4.6 Conclusion for 1,3-butadiene

Craigavon Borough Council has considered all relevant background and industrial criteria and found that there is very little likelihood of exceedence of the air quality objective for 1,3-butadiene in 2003

5.0 REVIEW AND ASSESSMENT OF CARBON MONOXIDE

5.1 Introduction

The Government and the Devolved Administrations have adopted an 8-hour running mean concentration level of 10mg/m3 as a maximum daily running 8-hour mean concentration, to be achieved by the end of 2003.

Box 2.1: Checklist for carbon monoxide		
Reference no	**Source, location or data to be assessed**	
A	Monitoring data	2.03
B	Very busy roads	2.04

5.2 Result of first round of review and assessment of air quality

Craigavon Borough Council's first round of review and assessment of air quality concluded that there were no sites at risk of failing the CO objective at stage 1. The guidance indicated that existing national policies were expected to deliver the national air quality objective by the end of the year 2003 with the possible exception of the near vicinity of heavily trafficked roads or in the vicinity of certain stationary sources. All industrial sources thought to have the potential to lead to an exceedence of the air quality standard were considered and the conclusion was that the risk of the CO air quality objective being exceeded by the end of 2003 in localities was negligible. Therefore, Craigavon Borough Council was not required to proceed any further and undertake a second stage review and assessment of CO.

5.3 Monitoring Data

Craigavon Borough Council has not carried out any monitoring for CO.

5.4 Very busy roads

Technical Guidance LAQM TG(03) states that for the assessment of CO, "*very busy roads and junctions in areas where the 2003 background is expected to be above 1 mg/m3*" should be identified. The criteria for very busy roads are given as single carriageway roads where the daily average flows exceed 80,000 vehicles per day or dual carriageway roads where the daily average flows exceed 120,000 vehicles per day. Craigavon Borough Council has no areas where the 2003 background is expected to be above 1 mg/m3 or any roads that meet the daily vehicle flows as shown below.

- **Single carriageway roads AADT greater than 80,000**
- **Dual carriageway roads AADT greater than 120,000**
- **Motorways**
- **Junctions where combined flow is equal to a) or b) above**

5.5 Conclusion for carbon monoxide

Craigavon Borough Council has considered all relevant background, industrial and traffic criteria and found that there is very little likelihood of exceedence of the air quality standard for carbon monoxide in 2003

6.0 REVIEW AND ASSESSMENT FOR LEAD

6.1 Introduction

The Government and the Devolved Administrations have adopted an annual mean concentration of 0.5 μg/m3 as the air quality standard for lead, with an objective for the standard to be achieved by the end of 2004. In addition, a lower air quality objective of 0.25 μg/m3 to be achieved by the end of 2008 has also been set.

Box 5.1: Checklist for lead		
Reference no	**Source, location or data that needs to be assessed**	
A	Monitoring data outside an AQMA	6.3
B	New industrial sources	6.4
C	Industrial sources with substantially increased emissions	6.5

6.2 Result of first round of review and assessment of air quality for lead

The first round of review and assessment of air quality was taken only as far as stage one for lead in Craigavon Borough. The report concluded that there were no significant industrial sources. It was not proposed therefore to carry out a second stage review for lead.

6.3 Monitoring data outside an AQMA

No monitoring for lead has been carried out and there are no AQMAs in, or adjacent to, Craigavon Borough Council's area.

6.4 New industrial sources

There are no new industrial sources of lead in Craigavon Borough, or in adjacent local authorities, since the last review and assessment.

6.5 Industrial sources with substantially increased emissions

There are no existing industrial sources of lead in Craigavon Borough, or in adjacent local authorities.

6.6 Conclusion for lead

Craigavon Borough Council has considered all relevant background and industrial criteria and found that there is very little likelihood of exceedence of either of the air quality objectives for lead in 2004 or 2008

7.0 REVIEW AND ASSESSMENT FOR NITROGEN DIOXIDE

7.1 Introduction

The Government and the Devolved Administrations have adopted two Air Quality Objectives for nitrogen dioxide, as an annual mean concentration of 40 μg/m3 and a1-hour mean concentration of 200 μg/m3 not to be exceeded more than 18 times per year. The objectives are to be achieved by the end of 2005.

Box 6.1: Checklist for nitrogen dioxide		
Reference no	**Source, location or data that need to be assessed**	
A	Monitoring data outside an AQMA	7.3
B	Monitoring data within an AQMA	7.4
C	Narrow congested streets with residential properties close to the kerb	7.5
D	Junctions	7.6
E	Busy streets where people may spend 1-hour or more close to traffic	7.7
F	Roads with high flow of buses and/or HGVs	7.8
G	New roads constructed or proposed since first round of review and assessment	7.9
H	Roads close to the objective during the first round of review and assessment	7.10
I	Roads with significantly changed traffic flows	7.11
J	Bus stations	7.12
K	New industrial sources	7.13
L	Industrial sources with substantially increased emissions	7.14
M	Aircraft	7.15

7.2 Result of first round of review and assessment of air quality for Nitrogen Dioxide.

In Craigavon Borough Council's area, the third stage review and assessment concluded that there was not a likelihood of exceedence of the annual Nitrogen Dioxide objective in Craigavon.

Since the completion of the first review and assessment of air quality, Craigavon Borough Council has continued monitoring nitrogen dioxide using diffusion tubes.

7.3 Monitoring data outside an AQMA

Craigavon Borough Council has not been required to declare any AQMA's at this time.

7.4 Monitoring data within an AQMA

Craigavon Borough Council has not been required to declare any AQMA's at this time.

7.5 Narrow congested streets with residential properties close to the kerb

There are no other locations within Craigavon Borough Council's area which come into this category.

7.6 Junctions

No Junctions within the Craigavon Borough Council area have been identified that have a significant impact on air quality at any sensitive receptor locations.

7.7 Busy streets where people may spend 1- hour or more close to traffic

There are no other locations within Craigavon Borough Council's area which come into this category.

7.8 Roads with high flow of buses and/or HDVs

LAQM TG(03) states that an unusually high proportion of HGVs can be taken to be greater than 25%. There are no such roads within the Craigavon Borough Council area. This conclusion is supported by the most recent traffic census completed by DRD Roads Service; *Traffic and Travel Information 2004.*

7.9 New roads constructed or proposed since first round of review and assessment

Since the first round of review and assessment, no new roads have been constructed which might impact on air quality, within Craigavon Borough.

7.10 Roads close to the objective during the first round of review and assessment

No Roads within the Craigavon Borough Council area have been identified that have a significant impact on air quality at any sensitive receptor locations.

7.11 Roads with significantly changed traffic flows

LAQM TG(03) defines "significantly changed" traffic flows as increasing by 25% since the first round of reviews and assessments. There are no roads that meet this criterion in the Craigavon Borough.

7.12 Bus stations

LAQM TG(03) states that only bus stations with more than 1000 movements per day should be considered. There are no such bus stations in the Craigavon Borough.

7.13 New industrial sources

There have been no significant new industrial sources since round one of review and assessment, either within Craigavon Borough Council's area or within neighbouring authorities with the capacity to influence air quality in the Borough.

7.14 Industrial sources with substantially increased emissions

There have been no substantially increased industrial sources of NO_2 in Craigavon Borough Councils area or any adjacent local authority areas, with the potential to influence the boroughs air quality, since the first round of reviews and assessments.

7.15 Aircraft

There are no airports in the Craigavon Borough Council area meeting the criteria.

7.16 Conclusion for nitrogen dioxide

On the basis of the above information Craigavon Borough Council is confident that the risk of the 2005 objectives for nitrogen dioxide being exceeded in the Borough is negligible for all sources except road traffic. A 2nd stage review and assessment will not be required.

8.0 REVIEW AND ASSESSMENT FOR PM_{10}

8.1 Information

The Government and the Devolved Administrations have adopted two Air Quality Objectives for fine particles (PM10), which are equivalent to the EU Stage 1 limit values in the first Air Quality Daughter Directive. The objectives are 40 $\mu g/m^3$ as the annual mean, and 50 $\mu g/m^3$ as the fixed 24-hour mean to be exceeded on no more than 18 days per year, to be achieved by the end of 2005. The objectives are based upon measurements carried out using the European gravimetric transfer reference sampler or equivalent.

Box 8.1: Checklist for PM10		
Reference no	**Source, location or data that need to be assessed**	
A	Monitoring data outside an AQMA	8.3
B	Monitoring data within an AQMA	8.4
C	Busy roads and junctions in Scotland	8.5
D	Junctions	8.6
E	Roads with high flow of buses and/or HGVs	8.7
F	New roads constructed or proposed since first round of review and assessment	8.8
G	Roads close to the objective during the first round of review and assessment	8.9
H	Roads with significantly changed traffic flow	8.10
I	New industrial sources	8.11
J	Industrial sources with substantially increased emissions	8.12
K	Areas with domestic solid fuel burning	8.13
L	Quarries, landfill sites, opencast coal, handling of dusty cargoes at ports etc	8.14
M	Aircraft	8.15

8.2 Result of first round of review and assessment of air quality for PM10

PM_{10} was one of the three pollutants taken forward in the Craigavon Borough Council area to a second stage review and assessment. However, the second stage review and assessment of the Council's area indicated that the risk of the PM_{10} air quality objective being exceeded by the end of 2004 was negligible.

8.3 Monitoring data outside an AQMA

Craigavon Borough has no AQMA's declared for PM_{10}.

8.4 Monitoring data within an AQMA

Craigavon Borough has no AQMA's declared for PM_{10}.

8.5 Busy roads and junctions in Scotland

At the time of writing, no part of the Craigavon Borough lies within Scotland.

8.6 Junctions

No Junctions within the Craigavon Borough Council area have been identified that have a significant impact on air quality at any sensitive receptor locations.

8.7 Roads with high flow of buses and/or HGVs

LAQM TG(03) states that an unusually high proportion of HGVs can be taken to be greater than 25%. There are no such roads in Craigavon Borough with particularly high flows of buses or HGVs.

8.8 New roads constructed or proposed since first round of review and assessment

Since the first round of review and assessment, no new roads have been constructed that impact on air quality.

8.9 Roads close to the objective during the first round of review and assessment

No Roads within the Craigavon Borough Council area have been identified that have a significant impact on air quality at any sensitive receptor locations.

8.10 Roads with significantly changed traffic flow

LAQM TG(03) defines "significantly changed" traffic flows as increasing by 25% since the first round of reviews and assessments. There are no roads that meet this criterion in Craigavon Borough.

8.11 New industrial sources

There have been no significant new industrial sources of PM_{10} in Craigavon Borough Council's area or any adjacent local authority areas since the first round of reviews and assessments.

8.12 Industrial sources with substantially increased emissions

There have been no substantially increased industrial sources of PM_{10} in Craigavon Borough Council's district or any adjacent local authority areas since the first round of reviews and assessments.

8.13 Areas with domestic solid fuel burning

Domestic coal burning was not considered likely to lead to an exceedence of the air quality objective for PM_{10} in the first round of reviews and assessments.

Levels of coal burning have not increased since Round 1 of the review and assessment.

8.14 Quarries, landfill sites, opencast coal, handling of dusty cargoes at ports etc

There are a number of quarries and landfill sites in the Craigavon area. None of these have been the subject of dust complaints in recent years and are not thought to be significant sources of PM_{10} at relevant receptors.

8.15 Aircraft

There are no airfields in Craigavon Borough meeting the criteria.

8.16 Conclusion for PM_{10}

Craigavon Borough Council has considered all relevant background, industrial and traffic criteria and found that there is little likelihood of exceedence of either of the air quality objectives for PM_{10} in 2006

9.0 Review and assessment of sulphur dioxide

9.1 Introduction

The Government and the Devolved Administrations have adopted a 15-minute mean of 266 μg/m3 as an air quality standard for sulphur dioxide, with an objective for the standard not to be exceeded more than 35 times in a year by the end of 2005. Additional objectives have also been set which are equivalent to the EU limit values specified in the First Air Quality Daughter Directive. These are for a 1-hour mean objective of 350 μg/m3, to be exceeded no more than 24 times per year, and a 24-hour objective of 125 μg/m3, to be exceeded no more than 3 times per year, to be achieved by the end of 2004.

Box 9.1: Checklist for sulphur dioxide		
Reference no	**Source, location or data that need to be assessed**	
A	Monitoring data outside an AQMA	7.03
B	Monitoring data within an AQMA	7.04
C	New industrial sources	7.05
D	Industrial sources with substantially increased emissions	7.06
E	Areas of domestic coal burning	7.07
F	Small boilers (5MW(thermal) burning coal or oil	7.08
G	Shipping	7.09
H	Railway Locomotives	7.10

9.2 Result of first round of review and assessment of air quality for sulphur dioxide

The first stage review and assessment for SO_2 indicated that the risk of the air quality objective being exceeded by the end of 2005 was negligible. Details of large industrial processes were collated for the first stage review and assessment of SO_2. Also further information was obtained on other Part A sources outside the district which might impact within the Council's area.

9.3 Monitoring data outside an AQMA

Craigavon Borough Council has no AQMA's declared at this time.

9.4 Monitoring data within an AQMA

Craigavon Borough Council has no AQMA's declared at this time.

9.5 New industrial sources

There are no significant new industrial sources within Craigavon Borough, or in neighbouring authorities with the potential to influence the Borough's air quality.

9.6 Industrial sources with substantially increased emissions

There are no significantly altered industrial sources within Craigavon Borough, or in neighbouring authorities with the potential to influence the Borough's air quality.

9.7 Areas of domestic coal burning

Domestic coal burning was not considered likely to lead to an exceedence of the air quality objective for SO_2 in the first round of reviews and assessments. There are no areas where coal smoke is particularly noticeable and. Local knowledge has been used and it is considered unlikely that such activity would lead to an exceedence of any of the air quality objectives for SO_2 in 2004 and 2005.

9.8 Small boilers (5MW(thermal) burning coal or oil)

There have been no changes to the existing coal and oil burning appliances in the Craigavon Borough since the first round of reviews and assessments and thus the air quality standard for SO_2 is unlikely to be exceeded. There is only one boiler complex within the City Area with a total output of 5MW, that being: Craigavon Are Hospital, with 2 oil fired boilers <5MW.

9.9 Shipping

There is no shipping in the Craigavon Borough.

9.10 Railway Locomotives

The main Belfast to Dublin train line dissects through the Craigavon Borough, with stations located at Lurgan and Portadown. It is unlikely that any of the trains using these stations are stationary for more than 15 minutes at a time and there are no sensitive receptors within 15m of the platforms at either station.

9.11 Conclusion for sulphur dioxide

Craigavon Borough Council considers that there is unlikely to be an exceedence of the 15 minute objective in 2005, or 1 hour or 24 hour objective for sulphur dioxide in 2004.

SUMMARY

This review and assessment was carried out in accordance with technical guidance on Local Air Quality Management issued by the Department of Environment, Transport and Regions using information available from Local Government and other bodies. On the basis of this information it is the opinion of Craigavon Borough Council that a 2nd stage and review and assessment is not required for the seven prescribed pollutants specified in the National Air Quality Strategy.

The Council is confident that the risk of the objectives being exceeded for the remaining pollutants is negligible.

REFERENCES

1 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland DETR 2000

2 Review and Assessment: Pollutant Specific Guidance LAQM.TG (03) DETR 2000

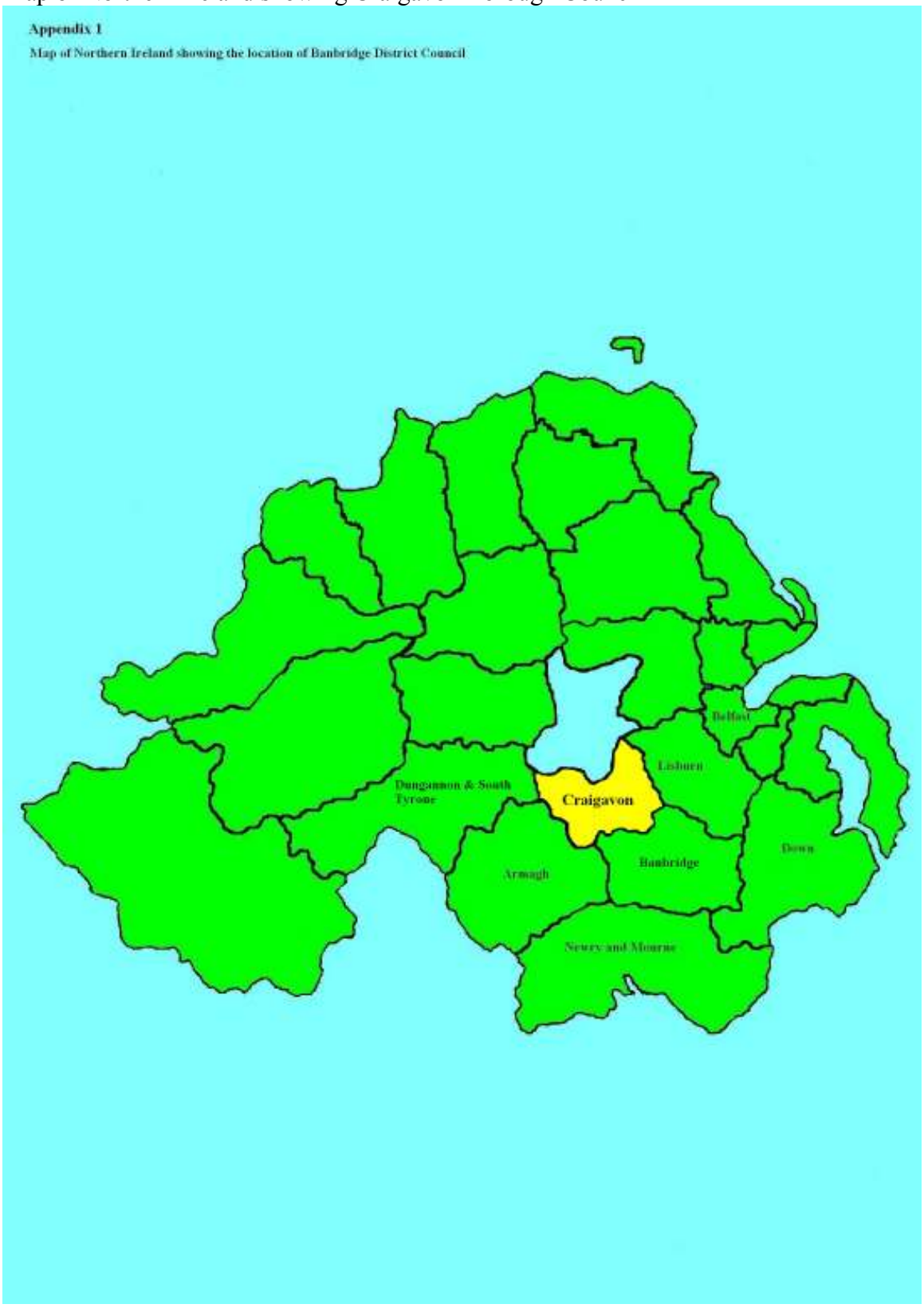
3 Air Quality in Northern Ireland by Pollution Control Group on behalf of the Chief Environmental Health Officers Group for Northern Ireland

4 National Air Quality Information Archive (http://www.airquality.co.uk/archive/laqm/laqm)

5 Expert Panel on Air Quality Standards. DETR & DOE(NI)

APPENDIX 1

Map of Northern Ireland showing Craigavon Borough Council



CAN:	CR0120004A
DRAWN:	ELR
DATE:	January 2005

Craigavon Borough Council Area

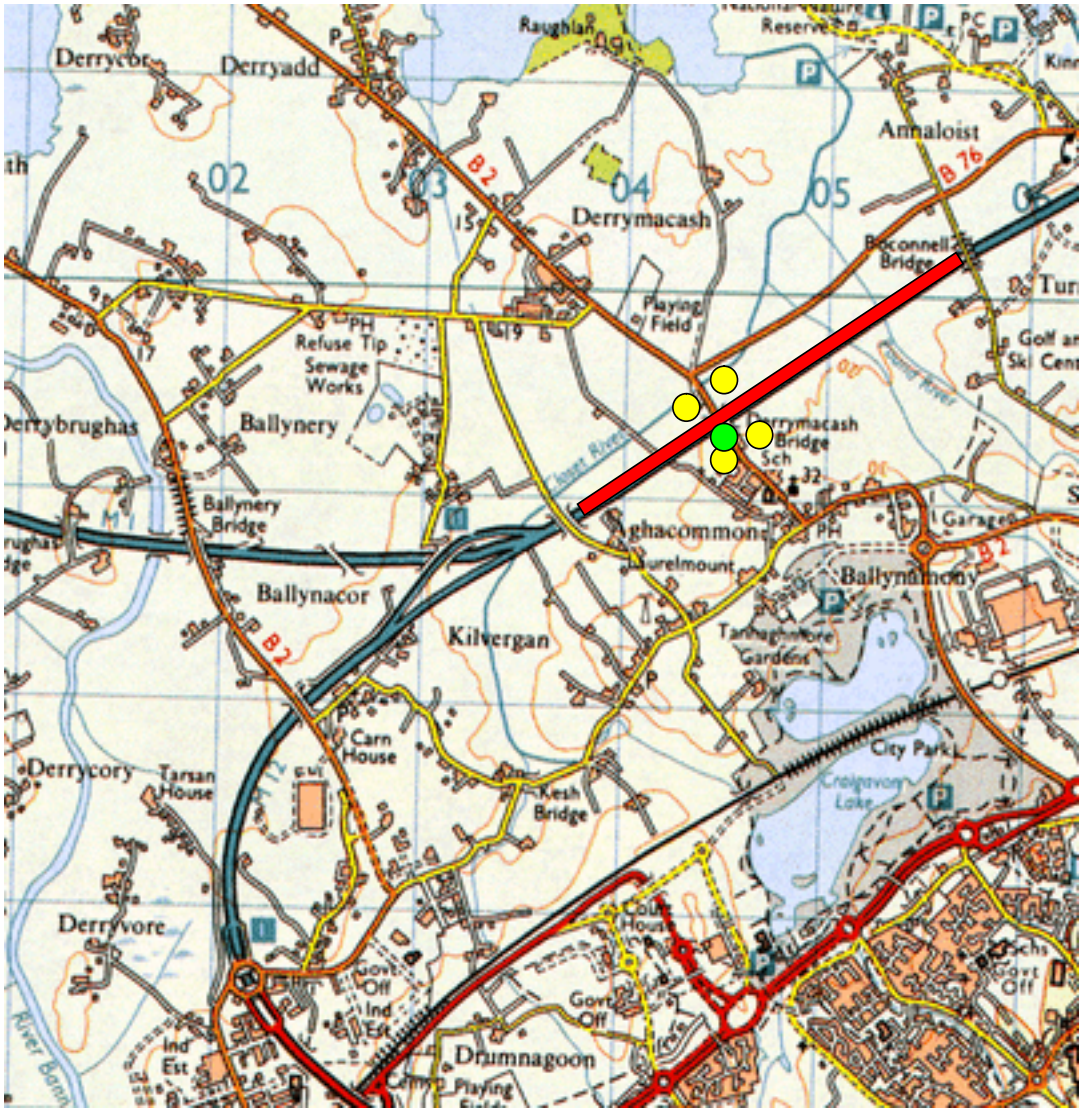
FIGURE 1

Craigavon Borough and surrounding road network

Craigavon Borough Council

APPENDIX 2

Appendix 3



KEY

- Areas of Receptors
- M1 Road Assessed
- NO_2 Diffusion Tube Monitoring

CAN:	CR0120004A
DRAWN:	ELR
DATE:	January 2005

Craigavon Borough Council: Air Quality Progress Report April 2005

FIGURE 2

Monitoring and assessment locations used for assessment of traffic using the M1 and NO2 Diffusion Tube at 4 Cluandara Drive.

Craigavon Borough Council

KEY

- NO_2 Continuous Monitoring: Castle Lane
- PM_{10} & SO_2 Continuous Monitoring & SO_2 Diffusion Tube Monitoring: Lord Lurgan Park
- 1 NO_2 Diffusion Tube Monitoring: Union Street (5N)
- 2 NO_2 Diffusion Tube Monitoring: Ardboe Drive (7N)

CAN: CR0120004A

DRAWN: ELR

DATE: January 2005

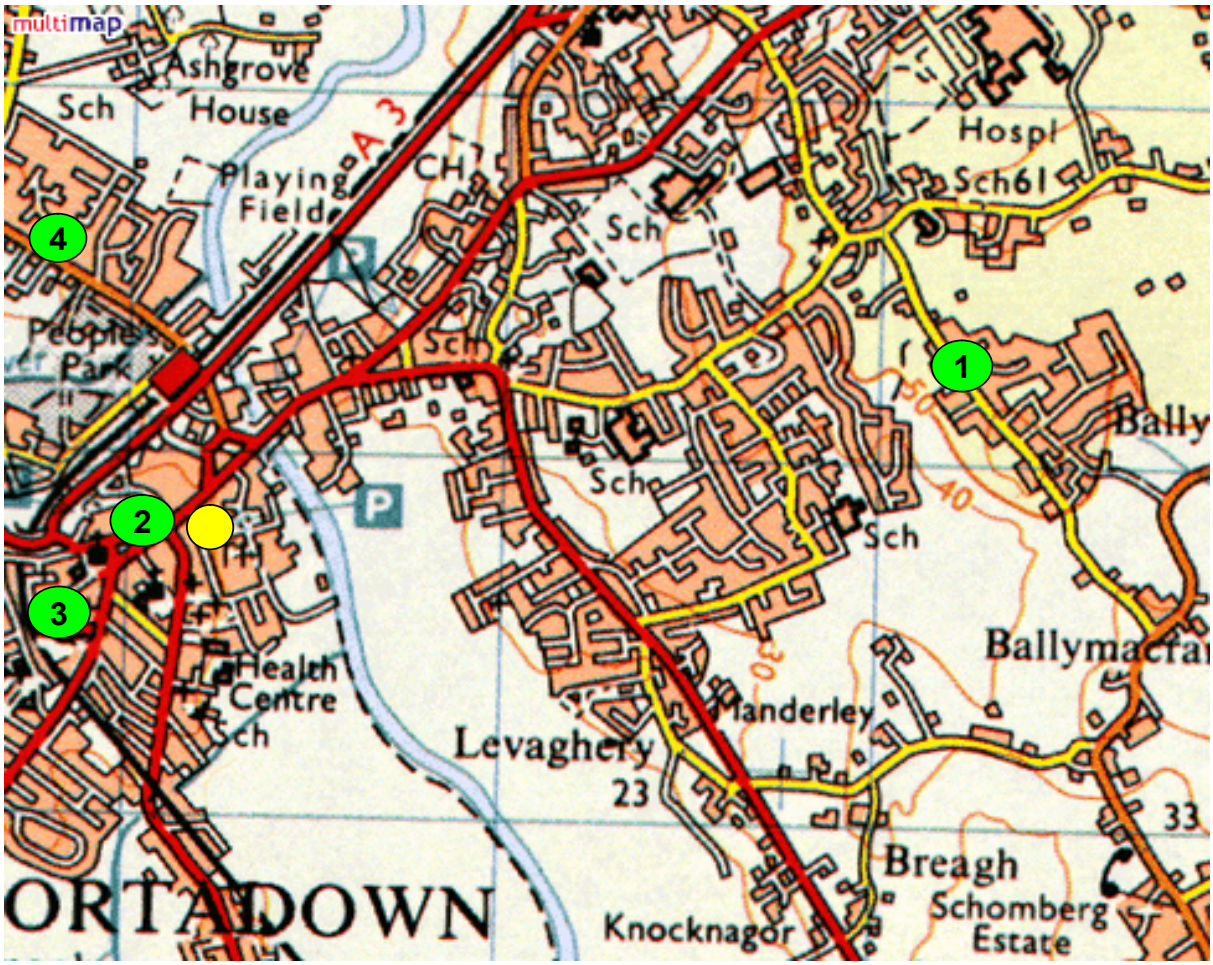
Craigavon Borough Council: Air Quality Progress Report April 2005

FIGURE 3

Monitoring Locations in Lurgan

Craigavon Borough Council

Appendix 4



KEY

- 8-port SO_2 bubbler monitor: Edward Street
- 1 NO_2 Diffusion Tube Monitoring: Ballyhannon Road (8N)
- 2 NO_2 Diffusion Tube Monitoring: Market Street (9N)
- 3 NO2 Diffusion Tube: West Street
- 4 NO2 Diffusion Tube: Ashgrove Community Centre

CAN: CR0120004A

DRAWN: ELR

DATE: January 2005

Craigavon Borough Council: Air Quality Progress Report April 2005

FIGURE 4

Monitoring Locations in Portadown

Craigavon Borough Council

Appendix 5

APPENDIX 6

Part A Processes in Craigavon Borough and those controlled by the Environment and Heritage Service.

Chemical Synthesis Services
Galen Holdings Compled
Seagoe Industrial Estate
Craigavon

Huhtamaki (Lurgan)
41 Inn Road
Dollingstown

Maintetti Technology Ltd
Church Road
Portadown

Polypipe (Ulster) Ltd
Dromore Road
Lurgan

Norman Emerson & Sons Ltd
118 Ardmore Road
Derryadd
(formerly Cat C process-transferred to EHS recently due to addition of sand drying process).

Part B

Silverwood Enterprises Ltd
Silverwood Industrial Estate
Craigavon

APPENDIX 7

Part *B/*C Processes in Craigavon Borough Prescribed for Authorisation since the First Round of Review and Assessment

Premises Address	**Correspondence Address**	**Authorisation No**	**Date**	**Process**
Ready Use Concrete Seagoe Industrial Estate Portadown	Mr B Thompson Ready Use Concrete 99 Kingsway Dunmurry Belfast BT14 9NU	IPCO/CBC/104/99	3/2001	Cement Processors
Ready Mix Concrete Lower Seagoe Industrial Estate Portadown	Ready Mix Concrete RMC House Upper Dunmurry Lane Belfast BT17 0AJ	IPCO/CBC/103/99	9/2002	Cement Processors
TY-Rock Products 297 Tandragee Road Portadown	Mr Thomas Heatrick 297 Tandragee Road Portadown	IPCO/CBC/101/02	9/2002	Cement Processors
Turkington Pre-Cast James Park Mahon Road Portadown BT62 3EH	Mr Kevin Acum Turkington Pre-Cast James Park Mahon Road Portadown BT62 3EH	IPC/CBC/102/02	9/2002	Cement Processors
Salmor Industries Ltd 4 Silverwood Ind Estate Lurgan BT66 6LN	Mr Enda McGurk Salmor Industries Ltd 4 Silverwood Ind Estate Lurgan BT66 6LN	IPC/CBC/06/01	1/4/06	Cement Processors

Porters Bodyshop 47A Church Street Portadown	Mr Jim Porter Porters Bodyshop 47A Church Street Portadown	RV/CBC/05/01	26/05/05	Vehicle Respraying
Lurgan Accident & Repair Centre 1 Dromore Road Lurgan	Mr Daniel Bann Lurgan Accident & Repair Centre 1 Dromore Road Lurgan	RV/CBC/05/02	26/05/05	Vehicle Respraying
Irish Road Motors Highfield Road Craigavon	Mr Paul Martin Irish Road Motors Highfield Road Craigavon	RV/CBC/05/03	6/2005	Vehicle Respraying
Shelbourne Accident Repair Centre 334 Tandragee Road Portadown	Shelbourne Accident Repair Centre 334 Tandragee Road Portadown	RV/CBC/05/04	12/12/05	Vehicle Respraying
NACCO Material Handling Ltd PO Box 11 Carn Industrial Estate Portadown BT63 5RH	Mr Leslie Gibson NACCO Material Handling Ltd PO Box 11 Carn Industrial Estate Portadown BT63 5RH	IPCO/CBC/101/01/V1		Powder Coating
McDonagh Furniture Obins Street Portadown	Ross McDonagh McDonagh Furniture Obins Street Portadown	FMC/CBC/01/01	13/4/06	Furniture Manufacture – Coating of Timber Processes

APPENDIX 8

Castle Lane Monitoring Results 2005

CRAIGAVON CASTLE LANE
01 January to 31 December 2005

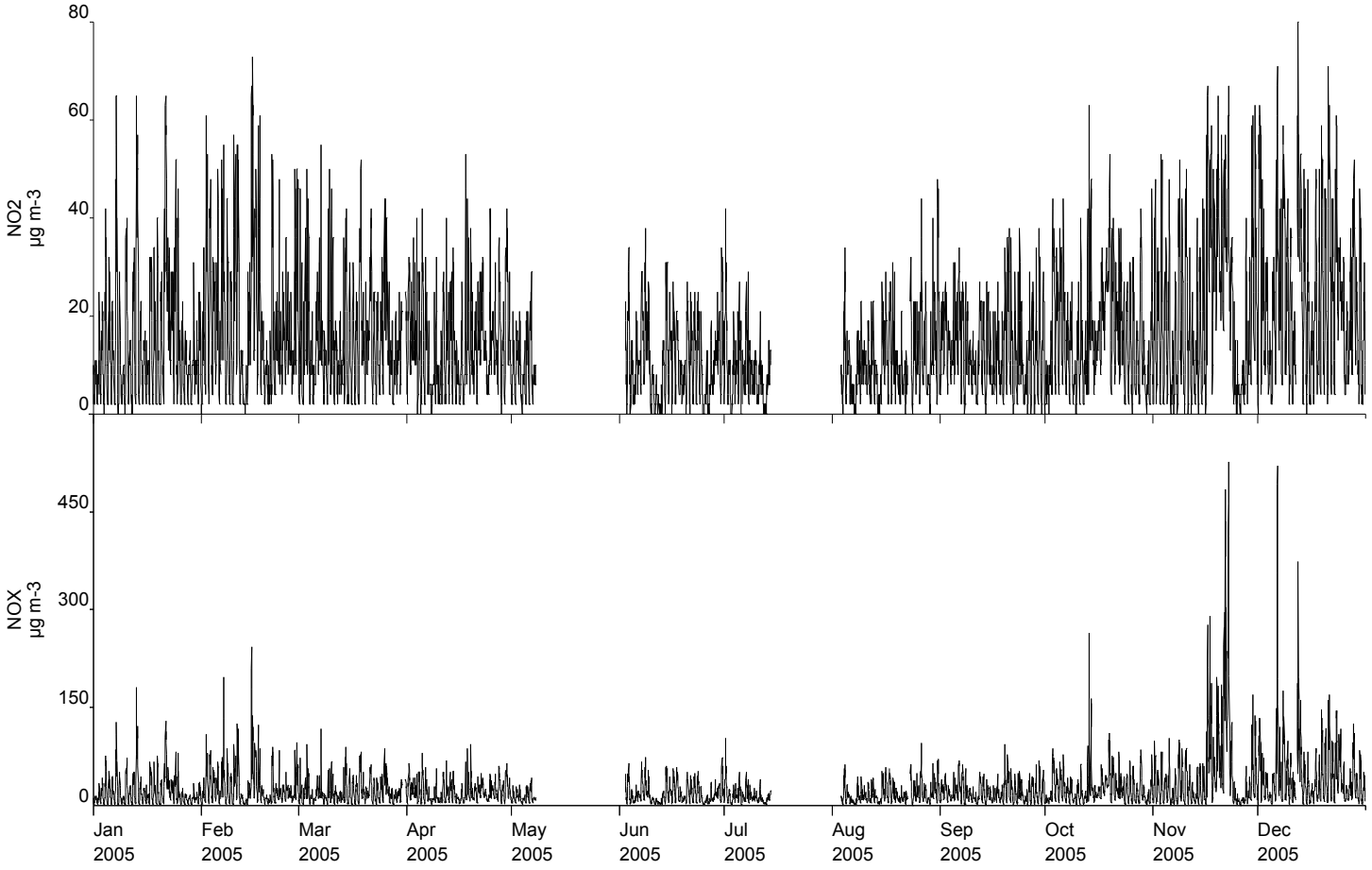
These data are provisional from 01/11/2005 and may be subject to further quality control

POLLUTANT	NO_2
Number Very High	0
Number High	0
Number Moderate	0
Number Low	7592
Maximum 15-minute mean	92 µg m^{-3}
Maximum hourly mean	80 µg m^{-3}
Maximum running 8-hour mean	61 µg m^{-3}
Maximum running 24-hour mean	49 µg m^{-3}
Maximum daily mean	42 µg m^{-3}
Average	15 µg m^{-3}
Data capture	86.7 %

All mass units are at 20'C and 1013mb
NO_X mass units are NO_X as NO_2

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m^{-3}	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m^{-3}	0	0

Craigavon Castle Lane Air Monitoring
Hourly Mean Data for 01 January to 31 December 2005



APPENDIX 9

Lord Lurgan Park Monitoring Results 2005

CRAIGAVON LORD LURGAN PARK
01 January to 31 December 2005

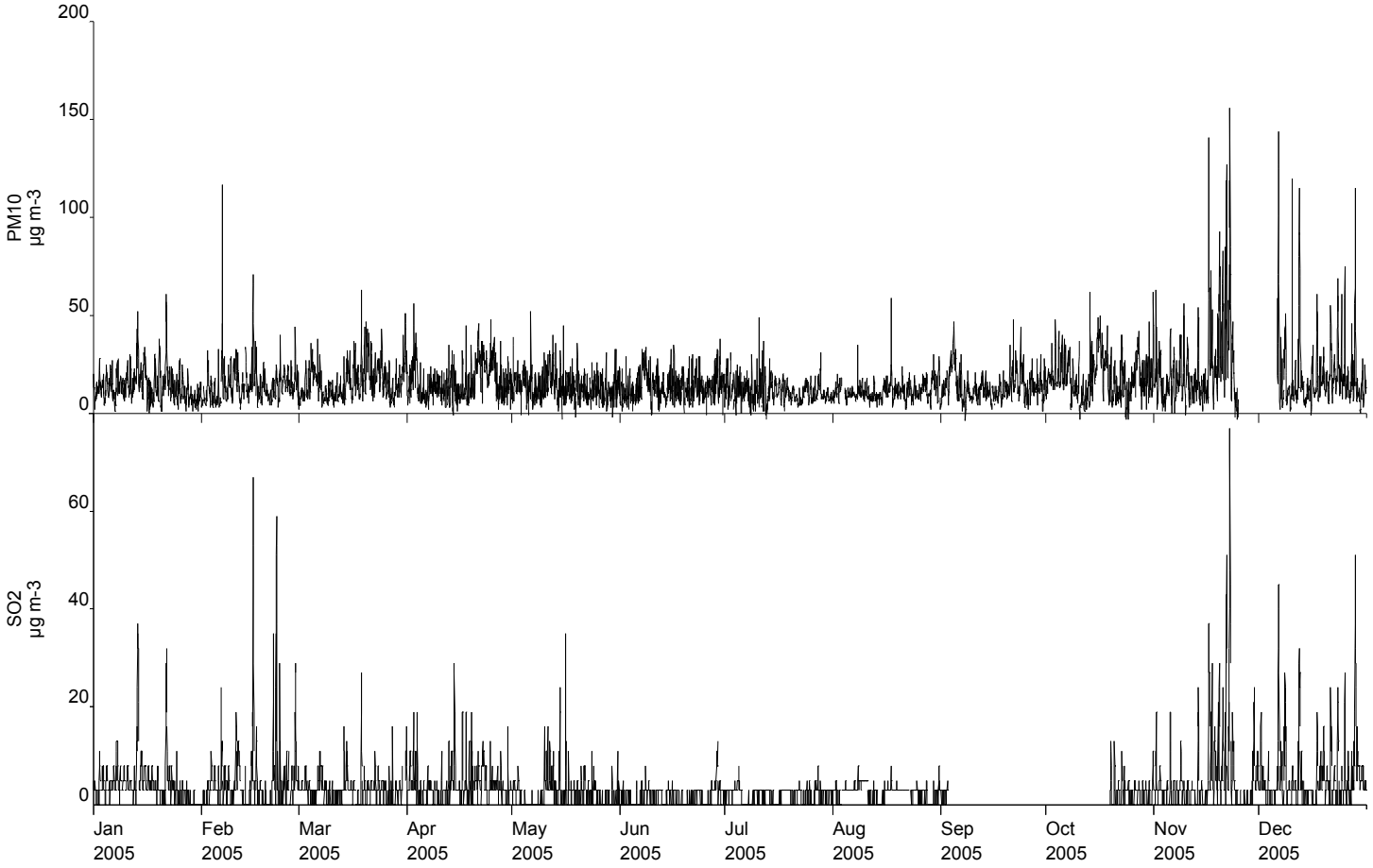
These data are provisional from 01/11/2005 and may be subject to further quality control

POLLUTANT	PM_{10}+	SO_2
Number Very High	0	0
Number High	0	0
Number Moderate	37	0
Number Low	8364	29710
Maximum 15-minute mean	208 µg m^{-3}	106 µg m^{-3}
Maximum hourly mean	156 µg m^{-3}	77 µg m^{-3}
Maximum running 8-hour mean	99 µg m^{-3}	53 µg m^{-3}
Maximum running 24-hour mean	61 µg m^{-3}	25 µg m^{-3}
Maximum daily mean	58 µg m^{-3}	24 µg m^{-3}
Average	15 µg m^{-3}	3 µg m^{-3}
Data capture	94.2 %	83.0 %

+ PM_{10} instrument is a TEOM
All mass units are at 20'C and 1013mb
NO_X mass units are NO_X as NO_2

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
PM_{10} Particulate Matter (Gravimetric)	Daily mean > 50 µg m^{-3}	3	3
PM_{10} Particulate Matter (Gravimetric)	Annual mean > 40 µg m^{-3}	0	-
Sulphur Dioxide	15-minute mean > 266 µg m^{-3}	0	0
Sulphur Dioxide	Hourly mean > 350 µg m^{-3}	0	0
Sulphur Dioxide	Daily mean > 125 µg m^{-3}	0	0

Craigavon Lord Lurgan Park Air Monitoring



Hourly Mean Data for 01 January to 31 December 2005

APPENDIX 10
NO_2 Diffusion Tube Monitoring Data

Bias Adjusted NO_2 Diffusion Tube Monitoring Data 2005

	Site 1 µg/m^3	Site 2 µg/m^3	Site 3 µg/m^3	Site 4 µg/m^3	Site 5 µg/m^3	Site 6 µg/m^3	Site 7 µg/m^3	Site 8 µg/m^3
Month								
January	19	21	15	13	7	19	15	11
February	23	24	21	13	14	21	10	29
March	19	19	10	10	12	11	11	12
April	16	16	13	15	9	8	12	11
May	27	28	26	20	19	29	22	32
June	32	29	NS	16	21	13	17	21
July	6	1	4	3	3	5	3	4
August								
September								
October	14	12	14	10	13	21	13	13
November	17	22	17	14	11	14	11	17
December	20	19	13	18	15	15	16	20
Mean								

Table 1: Craigavon District Council – Bias Adjusted Nitrogen Dioxide ($N0_2$) Results (January 2004 - December 2004)

Site No.	1	2	3	4	5	6	7	8
	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}
Month								
Jan-04	37	41	31	23	6	18	21	26
Feb-04	11	13	14	10	9	30	11	19
Mar-04	13	11	9	6	12	15	19	13
Apr-04	11	16	6	5	6	4	6	11
May-04	24	27	18	9	11	15	9	12
Jun-04	17	22	26	24	26	26	25	33
Jul-04	5	11	5	5	5	8	6	8
Aug-04	18	5	14	6	6	16	9	12
Sep-04	23	4	9	8	9	15	13	9
Oct-04	25	22	15	11	14	14	26	14
Nov-04	25	4	13	17	16	19	14	19
Dec-04	26	25	19	13	10	18	16	23
*Mean	20	17	15	11	11	17	15	17

***Mean Monthly Data is corrected for Bias**

		Site Ref
1	Town Hall, Union Street	82760
2	West Street (Bakery)	82979
3	Ardboe Drive	82762
4	Ballyhannon Road	82763
5	Ashgrove Community Centre	82764
6	Castlelane Toilets	82765
7	Lord Lurgan Park	82766
8	Cluandara, Derrymacash	82767

Bias Adjustment Factor 2004 – 1.08 (Cm/Dm)

Table 2: Craigavon District Council – Bias Adjusted Nitrogen Dioxide ($N0_2$) Results (January 2003 - December 2003)

Site No.	1	2	3	4	5	6	7	8
	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}	ug m^{-3}
Month								
Jan-04	37	51	34	14	28	39	27	46
Feb-04	36	55	35	17	36	32	33	25
Mar-04	14	13	42	13	15	27	14	14
Apr-04	7	13	3	4	4	4	4	14
May-04	16	29	6	9	12	16	7	16
Jun-04	16	41	13	4	12	13	8	15
Jul-04	12	NS	5	NS	7	7	3	12
Aug-04	6	12	4	3	0	1	3	6
Sep-04	15	23	11	8	9	24	15	13
Oct-04	15	34	16	11	11	6	18	18
Nov-04	29	17	23	14	22	28	9	20
Dec-04	26	40	27	12	30	23	24	27
*Mean	19	30	18	10	15	18	14	19

***Mean Monthly Data is corrected for Bias**

		Site Ref
1	Town Hall, Union Street	82760
2	West Street (Bakery)	82979
3	Ardboe Drive	82762
4	Ballyhannon Road	82763
5	Ashgrove Community Centre	82764
6	Castlelane Toilets	82765
7	Lord Lurgan Park	82766
8	Cluandara, Derrymacash	82767

Bias Adjustment Factor 2003 – 1.05 (Cm/Dm)

NS = No Sample