

Annual Progress Report (APR)



2016 Air Quality Annual Progress Report (APR) for
North Lanarkshire Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

July 2016

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Executive Summary: Air Quality in Our Area

Air Quality in North Lanarkshire

North Lanarkshire Council is Scotland's fourth largest (by population) local authority, and is situated in the central belt. Traditionally an area associated with heavy industry, this has significantly declined in recent years and the economy of the area now focuses on commerce and light industry. Due to its geographic location many of Scotland's trunk roads pass through it, including the M8/A8, M74, M73 and M80/A80. There is substantial cross-boundary travel with neighbouring local authorities, particularly Glasgow, South Lanarkshire, Falkirk and West Lothian, for employment, education and leisure activities. The main source of air pollution within North Lanarkshire is road traffic emissions, with a small element as a result of small-scale quarrying activities.

North Lanarkshire Council operates an extensive air quality monitoring network, including automatic monitoring for Nitrogen Dioxide (NO₂) and fine particulate matter (PM₁₀), as well as an extensive network of passive monitoring of NO₂. The Council's air quality monitoring network aims to monitor the most problematic areas of air pollution and is continually under review to ensure our monitoring equipment is situated in the most relevant areas.

Air quality monitoring in North Lanarkshire in 2015 has indicated that annual mean concentrations of Nitrogen Dioxide (NO₂) recorded at all automatic monitoring sites in 2015 were below the annual mean objective level. Exceedences of the NO₂ annual mean objective level were identified at four diffusion tube monitoring sites, however two of these sites do not have relevant public exposure and two are under ongoing investigation to determine the extent (if any) relevant exposure of the short-term (1 hour) air quality objective for NO₂.

Longer term trends for levels of Nitrogen Dioxide (NO₂), show a general decrease in NO₂ concentrations at most monitoring sites, for both automatic and diffusion tube monitoring since 2014. There are a few sites where this is not the case and there shows an increase in levels, however levels at these sites, with the exception of the sites specifically mentioned above, currently meet the required objective level for annual mean and hourly mean NO₂.

In terms of Particulate Matter (PM₁₀), monitoring results from the Council's automatic air monitors indicate that PM₁₀ levels recorded at all automatic monitoring sites were below the annual mean objective in 2015, with the exception of Chapelhall, which had an annualised annual mean of 18.5µg/m³ due to low data capture of 48%.

In terms of long-term trends, all automatic monitoring sites have seen a decrease in annual mean PM₁₀ since 2014, which may indicate a regional downward trend. The exception to this, however is site CM7 Shawhead, which has increased from 13.3 µg/m³ to 16 µg/m³. There have been no exceedences of the short-term air quality objective for PM₁₀.

Actions to Improve Air Quality

In 2015 the council saw a good deal of inter-departmental synergy in terms of air quality work. In the Planning side of things there was a greater understanding of the impact developments may have on air quality, and more air quality impact assessments were submitted where appropriate for proposed developments. Part of this understanding was achieved by way of a training event for planners on air quality.

In addition to greater working practices with planning, the same could be said for work with roads colleagues, particularly in roads strategy, where initiatives in relation to workplace travel planning, personalised travel planning etc was carried out.

In terms of pollution levels – the central part of the North Lanarkshire area, namely Coatbridge, Chapelhall, and the rest of the A8 corridor in this area has seen great changes to the trunk road network with the M8/A8 upgrade, as well as the upgrade of the Raith Interchange/M74 and M73. It would be remiss not to mention these works as they have had significant effect on congestion in the council area. In terms of air quality, however, the council continues to monitor for the effects of these works, particularly on local receptors.

Local Priorities and Challenges

The main priority for North Lanarkshire Council in the coming year in respect of local air quality will be to continue to run our extensive network of automatic air monitors and diffusion tubes in order that we have an accurate picture as possible of air quality levels within our area. We will also be purchasing a FIDAS particulate monitor

to locate in our Chapelhall monitoring station, within the Chapelhall AQMA. This equipment will be used to monitor PM2.5 as well as PM10 and will be the first PM2.5 monitoring station in North Lanarkshire.

In the coming year we will also be preparing to update our Air Quality Action Plan, and preparatory work for that will involve setting up a steering group to take this forward, later in 2016.

Finances continue to be a critical challenge for North Lanarkshire Council in 2016, particularly the running and maintenance costs of our automatic air quality monitors, and consideration is being given to ceasing automatic monitoring at Moodiesburn since monitoring over the past number of years has consistently indicated compliance with the national air quality objectives, and also because the AQMA formerly in this location has now been revoked.

How to Get Involved

Further information on air quality in North Lanarkshire can be found on the Council's website at www.northlanarkshire.gov.uk/index.aspx?articleid=2130 or by telephoning (01236) 638640.

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1. Local Air Quality Management

This report provides an overview of air quality in North Lanarkshire Council during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by North Lanarkshire Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	18 µg/m ³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m ³	Annual mean	31.12.2020
Sulphur dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m ³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Lead	0.25 µg/m ³	Annual Mean	31.12.2008

2. Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12 months, setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by North Lanarkshire Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at <https://uk-air.defra.gov.uk/aqma/list?la=N&country=scotland&pollutant=all> and on the Council's website at www.northlanarkshire.gov.uk/index.aspx?articleid=8183

Following consideration of previous years' monitoring data plus the conclusions of a Detailed Assessment carried out for the wider Monklands area the Council undertook changes to its AQMAs in 2015. Details of the changes are as follows:-

- Following approval from the Scottish Government and SEPA in 2014 the Moodiesburn AQMA was revoked, effective from 20th April 2015
- The Whifflet AQMA was amended to include monitoring sites at Shawhead and Kirkshaws, and for ease of naming, was re-named as the Coatbridge AQMA. The amendment also included designation for exceedance of the annual mean objective for Nitrogen Dioxide (NO₂) in addition to the annual mean PM₁₀ objective. This was effective from 20th April 2015
- The Chapehall AQMA was amended to include designation for exceedance of the annual mean objective for NO₂ in addition to the annual mean PM₁₀ objective.

These changes were ratified by the Council on 26th March 2015 and came into effect on 20th April 2015.

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
AQMA Croy	PM ₁₀ annual mean	Croy	An area encompassing a quarry and surrounding area	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Chapelhall	<ul style="list-style-type: none"> • NO₂ annual mean • PM₁₀ annual mean 	Chapelhall	An area encompassing a number of properties at the junction of Main Street and Lauchope Street.	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Coatbridge	<ul style="list-style-type: none"> • PM₁₀ annual mean • NO₂ annual mean 	Coatbridge	Whifflet Street stretching to the Shawhead roundabout. The AQMA was further extended in 2015 to include Kirkshaws Rd	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
AQMA Motherwell	PM ₁₀ annual mean	Motherwell	An area encompassing Motherwell Town Centre	www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

2.2 Progress and Impact of Measures to address Air Quality in North Lanarkshire Council

North Lanarkshire Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the section within the air quality Action Plan relating to each AQMA . Key completed measures are:

- Electric vehicle charging points are now installed at all main Council buildings. Further to this a number of Council-owned car parks now also have EV charging points installed for general public use
- Cycling facilities are now installed in two main Council buildings that are within/adjacent to AQMAs. These are Civic Centre, Motherwell and Kildonan Street, Coatbridge. This need was based on information obtained from a staff

travel survey as part of the Workplace Travel Plan and was part-funded through the Scottish Government Air Quality Action Plan grant

- A web-based air quality learning package which was previously prepared by North Lanarkshire Council has been expanded to be suitable for use throughout Scotland, and to be suitable for S1,2,3 year groups, through a collaboration between NLC and SEPA. This Air Quality learning package was a finalist in the National Air Quality Awards 2015.

Progress on the following measures has been slower than expected, for the explanations given:-

- The purchase and use of an electric minibus for use for school transport in the Coatbridge AQMA has not been fully realised. The minibus was purchased however its performance was not sufficient for it to be utilised as school transport
- Consideration of a feasibility study into the potential for Statutory Quality partnership for Motherwell. This study was superseded by a larger agenda of improving Motherwell Town Centre, which included a Charrette as well as an options appraisal exercise for Motherwell as part of the larger City Deal work. As well as this, work is currently underway to work towards Motherwell being transformed into an Integrated Travel Town. Protective Services is involved in joint working with Roads colleagues and have contributed to the cost of the Integrated travel Town options exercise.
- Consider the implications for the access proposals for the Ravenscraig development site – this has not progressed significantly due to the proposed Masterplan for the Ravenscraig site having to be re-done as a result of changing priorities for the site. Protective Services remains in dialogue with the planning department to keep abreast of any changes that may impact on local air quality.

North Lanarkshire Council expects the following measures to be completed over the course of the next reporting year:

- Continue to expand our Eco Stars fleet recognition scheme, and to attain our 100th member
- Cycling infrastructure to be installed in Fleming House, Cumbernauld (further to the cycling infrastructure that has been installed in Civic Centre and Kildonan Street
- Input into the Sustrans/NLC-funded study to look at feasibility of options for making Motherwell an Integrated travel Town
- Provide air quality/AQMA guidance input to city deal options appraisal for Motherwell
- Ongoing discussions about junction improvements at Chapelhall
- Air Quality Learning Package to be used in a programme of NLC schools in conjunction with travel planners, i-bikes officer, WOW scheme etc.
- Revision of NO₂ diffusion tube monitoring sites in North Lanarkshire

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Purchase and installation of rev-limiters on Council vehicles following assessment of initial trial of 30 vehicles	Vehicle fleet efficiency	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in concentration, based on the result of quantitative appraisal	Completed	2016	Comments relating to target pollution reductions (link to Action Plan for more details)
2	Programme of emissions diagnostic testing on Council vehicles	Vehicle fleet efficiency	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in emissions from NLC vehicle fleet	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
3	Purchase of electric minibus for use as school bus in AQMA	Promoting low emission transport	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in emissions within AQMA	Not completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
4	Extension of Council pool car fleet	Alternative to private vehicle use	N/A	All departments	2013	2013-2016	N/A	Anticipated reduction in road traffic emissions across NLC, having positive benefit to air quality in AQMA	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5	Introduction of electric powered street sweepers in 2 AQMAs	Vehicle fleet efficiency	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in vehicle emissions in AQMAs where sweepers operate	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
6	Introduction of vehicle emission standards into procurement policy, and ensure that 50% of Council vehicle fleet to be Euro 5 or better	Vehicle fleet efficiency	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in emissions from NLC vehicle fleet	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
7	Council will ensure that 50% of their vehicle fleet will be fitted with Automatic Vehicle Logging System (AVLS) technology by 2014	Vehicle fleet efficiency	N/A	Transport	2013	2013-2016	N/A	Anticipated reduction in emissions from NLC vehicle fleet	Completed	2014	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
8	Subject to govt funding the Council will continue to roll out electric vehicle fleet	Promoting low emission transport	N/A	Transport/all departments	2013	2013-2016	N/A	Anticipated reductions in NLC vehicle fleet contributions to overall AQ	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
9	Purchase and installation of electric vehicle charging points within main Council buildings	Promoting low emission transport	N/A	Roads	2013	2013-2016	N/A	Anticipated increase in low emission vehicles in AQMAs	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
10	Council will continue to work with Transport Scotland via the STEP group to identify possible solutions to air quality issues attributable to the trunk road network in NL	Policy guidance and development control	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
11	The Council will continue to conduct Vehicle Emission Testing within the AQMAs	Promoting low emission transport	N/A	Protective Services	2013	2013-2016	N/A	N/A	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
12	Continue the Vehicle Idling Enforcement programme particularly at schools in/near AQMAs	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
13	Comprehensive review of air quality monitoring network to ensure monitoring locations are appropriate	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
14	LAQM will be included in agenda at the Council's Sustainability and Climate Change group to ensure alignment of AQ and carbon reduction measures	Policy guidance and development control	N/A	Planning	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
15	The Council will continue its programme of introducing sustainable energy provision in schools and Council buildings	Promoting low emission plants	N/A	Learning and Leisure Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
16	An updated Emissions inventory will be prepared and published incorporating LAQM and greenhouse gas pollutants	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
17	A web-based learning tool on air quality for school pupils will be prepared	Public information	N/A	Protective Services/Learning and Leisure Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
18	Updated Air Quality Guidance for Developers will be produced	Policy guidance and development control	N/A	Protective Services/Planning	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
19	AQ will be given due consideration in town centre improvement stakeholder meetings	Policy guidance and development control	N/A	Protective Services/Planning	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
20	Air quality training will be provided for NLC planners	Policy guidance and development control	N/A	Protective Services/Planning	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
21	The Council's Workplace Travel Plan will be progressed, focussing on sustainable transport and travel to work	Promoting travel alternatives	N/A	Roads	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
22	Council will run Cycling Promotion Initiatives	Promoting travel alternatives	N/A	Roads	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
23	Write to all primary schools within/adjacent to AQMAs to encourage uptake of School Travel Plans	Promoting travel alternatives	N/A	Roads	2013	2013-2016	N/A	N/A	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
24	Consider outcome of feasibility study into potential for Statutory Quality Partnership for Motherwell	Promoting low emission transport	N/A	Roads	2013	2013-2016	N/A	Anticipated improvement in AQ in Motherwell AQMA as result of improved buses operating in area through the SQP.	??????	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
25	Install CCTV in Muir St, Motherwell to investigate excessive idling of buses in area	Traffic management	N/A	Roads	2013	2013-2016	N/A	Anticipated improvement in AQ in Motherwell AQMA	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
26	Design and build 2 park and ride sites adjacent to Motherwell train station	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	Anticipated improvement in AQ in Motherwell AQMA	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
27	Consider design and cost of widening Windmillhill St, Motherwell	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	Anticipated reduction in congestion and therefore AQ in Motherwell AQMA	Partly completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
28	Consider implications for access proposals for Ravenscraig development site	Transport planning and infrastructure	N/A	Roads/Planning	2013	2013-2016	N/A	N/A	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
29	Subject to funding, NLC will support and progress plans for dualling of A723 between Motherwell and M8 motorway	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	Anticipated reduction in congestion and consequently improvement in AQ in Motherwell AQMA	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
30	NLC will seek funding to progress viable junction improvements at Chapelhall	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	Anticipated reduction in congestion leading to improvement in AQ in Chapelhall AQMA	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
31	Detailed Assessment will be undertaken on air quality along A73 corridor to identify problems and solutions for congestion in this area	Transport planning and infrastructure	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
32	Subject to funding NLC will introduce an Environmental Fleet Recognition Scheme	Freight and delivery management	N/A	Protective Services	2013	2013-2016	N/A	Anticipated improvements to HGV vehicle fleet operating in NLC leading to overall increase in AQ in all AQMAs	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
33	Amend Whifflet AQMA to include further areas of exceedance	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
34	Undertake additional air monitoring in Coatbridge	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
35	NLC will endorse developer-led road link in Coatbridge to alleviate congestion in/near AQMA	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	Diversion of traffic through new road link should reduce traffic in Coatbridge AQMA	Ongoing	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
36	Optimise traffic signals at main junction within Moodiesburn AQMA	Transport planning and infrastructure	N/A	Roads	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

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Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
37	Consider air quality impact of development adjacent to new M80	Policy guidance and development control	N/A	Planning	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
38	Continue to monitor air quality in Croy AQMA	Public information	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0
39	Re-assess air quality in Croy if quarry re-opens	Environmental permits	N/A	Protective Services	2013	2013-2016	N/A	N/A	Completed	2016	Further information available at www.northlanarkshire.gov.uk/CHttpHandler.ashx?id=12687&p=0

3. Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

North Lanarkshire Council undertook automatic (continuous) monitoring at 11 sites during 2015. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at www.scottishairquality.co.uk

A map showing the locations of the automatic monitoring sites was too large to attach to this report and as such has been provided in a supplementary document. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

North Lanarkshire Council undertook non- automatic (passive) monitoring of NO₂ at 79 sites during 2015. Table A.2 in Appendix A shows the details of the sites.

Maps showing the locations of the monitoring sites are provided in the supplementary document to this report. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

Annual mean Nitrogen Dioxide (NO₂) concentrations recorded at all automatic monitoring sites in 2015 were below the annual mean objective level.

There were 4 exceedances of the NO₂ annual mean objective (after bias adjustment and distance correction) at the following diffusion tube monitoring locations.

Exceedances of the NO₂ annual mean objective have been measured at the following locations :-

- DT61 – Under Bridge Central Way Eastbound (74.3 $\mu\text{g}/\text{m}^3$)
- DT62 – Central Way, Westbound (44.8 $\mu\text{g}/\text{m}^3$)
- DT107 – Braehead Farm, Bargeddie (42.7 $\mu\text{g}/\text{m}^3$)
- DT108 – MSA Factory, Shawhead (43.5 $\mu\text{g}/\text{m}^3$)

Two of the locations (61 and 62) are consistent with areas of exceedance in previous years and the concentrations are higher than in 2014. The annual mean at site 61 is in excess of the 60 $\mu\text{g}/\text{m}^3$ threshold at which TG(16) recommends that there may be a risk of the NO₂ 1-hour mean objective being exceeded. These sites are the subject of an ongoing investigation into the extent, if any, of relevant public exposure at the location. If deemed appropriate, further action will be taken at this site.

The monitoring sites 107 and 108 are located in areas of no relevant public exposure alongside the A8 trunk road. There are receptors located at similar distances from the A8 as these two monitoring sites eg. Kirkshaws Road, however monitored levels at these sites were below the NO₂ annual mean objective.

For diffusion tubes, the full 2015 dataset of monthly mean values is provided in Appendix B.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 18 times per year. There were no exceedances of the NO₂ hourly mean at any of the automatic monitoring sites.

The trend is towards reducing annual mean concentrations at the continuous monitoring sites.

3.2.2 Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 18 $\mu\text{g}/\text{m}^3$.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 7 times per year.

The annual mean PM₁₀ concentrations recorded at all automatic monitoring sites were below the annual mean objectives in 2015, with the exception of Chapelhall which had an annualised annual mean concentration of 18.5 µg/m³. The site experienced a low data capture of 48%. Details of the annualisation process are in Appendix C.

For most of the remaining sites, the results show a decrease in measured annual mean PM₁₀ concentration at all sites since 2014, however there has been an increase in measured concentrations at site CM7 Shawhead in Coatbridge from 13.3 µg/m³ to 16 µg/m³. The increase in measured concentrations at Shawhead is attributed to the increased congestion at the roundabout junctions close to the monitoring site due to the ongoing M8/A8 roadworks.

No exceedances of the PM₁₀ short-term objective have been recorded in 2015 at any of the automatic site locations.

3.2.3 Particulate Matter (PM_{2.5})

North Lanarkshire Council does not currently monitor PM_{2.5} annual mean concentrations at any location.

3.2.4 Sulphur Dioxide (SO₂)

North Lanarkshire Council undertakes automatic monitoring of Sulphur Dioxide (SO₂) concentrations at Croy and Kirkshaws. Table A.7 in Appendix A compares the ratified continuous monitored SO₂ concentrations for year 2015 with the air quality objectives for SO₂. Table A. in Appendix A compares the ratified continuous monitored SO₂ concentrations for year 2015 with the air quality objectives for SO₂.

All measured SO₂ concentrations are significantly below the relevant objectives, although data capture for Kirkshaws was less than 25%.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

North Lanarkshire Council does not currently measure carbon monoxide, lead or 1,3-Butadiene concentrations within the Council area. No significant sources of these pollutants have been identified in previous round of review and assessment.

4. New Local Developments

4.1 Road Traffic Sources

North Lanarkshire Council Roads were consulted on changes to traffic flows on roads within the area in 2015, and the following information is reported.

- Narrow congested streets with residential properties close to the kerb – no new roads that meet this criteria
- Busy streets where people may spend one hour or more close to traffic – no new roads that meet this criteria
- Roads with a high flow of buses and/or HGVs – there are no new roads that meet this criteria
- New roads constructed or proposed – there are no new roads that meet this criteria
- Roads with significantly changed traffic flows – there are no new roads that meet this criteria
- Bus or coach stations – there are no new bus or coach stations to report.

It should be noted that there are a number of major road infrastructure changes currently ongoing, and/or planned in North Lanarkshire. Details of these are as follows:-

- A89 Coatbridge Rd – new roundabout under construction
- A89/A752 Bargeddie – roundabout improvements proposed, not begun yet
- Shawhead Interchange – construction works ongoing
- Eurocentral Interchange – construction works ongoing
- Chapelhall Interchange – construction works ongoing
- Newhouse Interchange – construction works ongoing
- Raith interchange – construction works ongoing

Air quality was duly considered during the planning process for these projects. Inevitably these works have resulted in increases in traffic volumes at peak journey times on a number of surrounding roads, depending on what traffic management is in place on the trunk roads. The roads affected include A775 Edinburgh Rd, A721

Gartcosh Walk, A73 Bellside Rd (Chapelhall), Lancaster Ave (Chapelhall) and A725 Gartcosh Rd/Aitkenhead Rd.

Close observation of measured air quality levels at receptor locations adjacent to major road infrastructure changes will continue to be undertaken and any impact on air quality duly noted and appropriate action taken.

4.2 Other Transport Sources

NLC has considered the relevant criteria outlined in the template and can confirm that there are no other significant transport sources to be considered in this report.

- Airports – no relevant sources in North Lanarkshire
- Locations where diesel/steam trains regularly stationary for 15 minutes – no relevant sources in North Lanarkshire
- Locations with large number of movements of diesel locomotives – no relevant sources in North Lanarkshire
- Ports for shipping – no relevant sources in North Lanarkshire

4.3 Industrial Sources

SEPA were consulted for information in relation to industrial sources and provided the following response:-

- Industrial installations: new or proposed installations for which an air quality assessment has been carried out in North Lanarkshire – no new or proposed installations have submitted an Air Quality Assessment to SEPA in 2015.
- Industrial installations: existing installations where emissions have increased substantially or new relevant exposure has been introduced – SEPA advised that there were no sites within North Lanarkshire which have applied to substantially increase their emissions to air and are under the PPC regime.
- Industrial installations: new or significantly changed installations with no previous air quality assessment – SEPA advised that they do not hold any details of new or significantly changed industrial installations where there has been no previous air quality assessment undertaken.
- Major fuel storage depots – North Lanarkshire has no new major fuel depots which store petrol
- Petrol Stations – North Lanarkshire currently has 42 petrol stations which are regulated under SEPA's PPC regulatory scheme

- Poultry Farms – North Lanarkshire do not have any new poultry farms

4.4 Commercial and Domestic Sources

- Biomass combustion plant – SEPA have advised that there are currently no new SEPA-regulated biomass combustion plants in North Lanarkshire. In terms of smaller biomass plants which fall below the 20MW threshold for regulation by SEPA, the following biomass plants were newly installed in 2015
 - Clyde Valley High School, Overtown. An air quality impact assessment was provided as part of the planning process and the stack height and impact on local air quality duly considered. No exceedance of the air quality objectives was predicted.
- Areas where the combined impact of several biomass combustion sources may be relevant – there are no new areas which meet this criteria
- Areas where domestic solid fuel burning may be relevant – there are no new areas which meet this criteria
- Combined Heat and Power (CHP) plant – SEPA has advised that there are no new CHP units within the regulatory threshold in the North Lanarkshire area.

4.5 New Developments with Fugitive or Uncontrolled Sources

North Lanarkshire Council, in conjunction with correspondence from SEPA can confirm the following update in terms of new developments with fugitive or uncontrolled sources of particulate matter:-

- Landfill sites – there are no new landfill sites in North Lanarkshire that meet the criteria
- Quarries – there are no new quarries in North Lanarkshire that meet the criteria
- Unmade haulage roads on industrial sites – there are no new unmade haulage roads on industrial sites in North Lanarkshire that meet the criteria
- Waste transfer stations etc – there are no new developments that meet this criteria
- Other potential sources of fugitive particulate matter emissions – there are no other new developments that meet the criteria

5. Planning Applications

North Lanarkshire Council Planning and Development Control Service were consulted for details of any relevant major planning applications under consideration and the following planning applications which were granted planning consent in 2015 were identified.

Table 5.1 – Relevant Planning Applications from 2015

Application Number	Brief Description of Development	AQ Impact	Comment/Further info
12/00590/PPP and 15/02499/MSC	Residential development, including community facilities at site north of Eastfield Rd, Cumbernauld	Location is not within/near AQMA	Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/
12/00959/PPP	Residential development and community facilities	Location is not within/near AQMA	Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/
13/00112/FUL	Waste glass recycling processing facility with associated yard storage and environmental improvements	Location is not in/near AQMA.	SEPA will regulate this type of facility. Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/
15/02484/FUL	Construction of school and theatre with car parking, playground, sports pitches and energy centre(biomass)	Location is not in/near AQMA	Air Quality Impact Assessment submitted. Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/
15/01696/MSC	Engineering works to remove waste material and associated temporary access	Location is adjacent to Motherwell AQMA	Air Quality Impact Assessment submitted in support of application. Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/
14/02552/AMD and 15/0180/AMD	Variations to existing consented development – 35,000 tpa Energy from Waste (EfW) incinerator plant	Location is adjacent to Coatbridge AQMA. AQ Impact Assessment submitted and predicted	Air Quality Impact Assessment submitted in support of application. Further info available at https://eplanning.northlanarkshire.gov.uk/online-applications/

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		no exceedance of AQ objectives. NLC refused application but decision overturned by Scottish Government	

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The conclusions drawn from the monitoring data identified in 2015 can be summarised as follows.

- Annual mean concentrations of Nitrogen Dioxide (NO₂) recorded at all automatic monitoring sites in 2015 were below the annual mean objective level of 40 µg/m³
- Four NO₂ diffusion tube sites were identified as exceeding the annual mean objective for NO₂. Of these sites, two are background sites situated adjacent to the M8 motorway, and some distance (approximately 500m) from any relevant exposure.
- The other two NO₂ diffusion tube sites that with measured exceedence of the annual mean objective in 2015 are situated in a semi-enclosed area of Cumbernauld Town Centre including the main bus station for the town centre. At time of writing this report an investigation is under way to determine the extent, if any, of relevant public exposure within this area, as there is an indoor waiting area which would provide a barrier to exposure of pollutants. Visits to the area thus far have noted that the indoor waiting area is being utilised and that this is a reasonable distance from the diffusion tube location. Further visits will be undertaken to establish the relevance of receptors at this location and thereafter any relevant action will be taken by the council as required.
- Ongoing trends in NO₂ monitoring in North Lanarkshire have indicated a general decrease in NO₂ concentrations at most monitoring sites for both automatic and diffusion tube monitoring since 2014. A few sites remain the exception to this however, but all levels at these sites currently meet the required objective level for annual mean and hourly mean NO₂.
- There is an upward trend in NO₂ in Coatbridge, most likely as a result of the ongoing changes to the major road network in the area and the corresponding impact on the surrounding local road network. The council will continue to monitor this situation and take any action necessary.
- All automatic monitoring sites identified that both annual mean and hourly mean PM₁₀ objectives were being met. The exception to this was the

Chapelhall automatic monitoring site, at which there was low data capture of 48% as a result of frequent equipment breakdown. Annualising the data for Chapelhall gave the site an annual mean reading of $18.5 \mu\text{g}/\text{m}^3$.

- In terms of the long-term trends for PM_{10} , all automatic monitoring sites have seen a decrease in annual mean PM_{10} since 2014, which may indicate a regional downward trend, with the exception of Shawhead, which saw an increase from $13.3 \mu\text{g}/\text{m}^3$ to $16 \mu\text{g}/\text{m}^3$. Monitoring has indicated that there have been no exceedences of the short-term air quality objective for PM_{10} .

6.2 Conclusions relating to New Local Developments

Following consultation with the planning department and in reviewing supporting air quality impact assessments that were submitted in support of planning applications in 2015 it was concluded that there are no significant issues in relation to new local developments. This was as a result of the proposed developments not being in areas where air quality levels are close to the objective and/or the development themselves did not present air quality issues to surrounding sensitive receptors. Protective Services will continue to work with North Lanarkshire Council planning colleagues to identify and future developments that may present air quality issues, and take any action deemed appropriate.

6.3 Proposed Actions

Over the coming reporting year (2016) North Lanarkshire Council intends to focus on the following areas of work.

- Air quality monitoring will continue at all automatic monitoring sites with the exception of Moodiesburn. We propose to decommission this automatic station as monitoring has demonstrated that pollutant levels at this site have consistently met the objective and the AQMA has already been revoked.
- The council does not propose to make any changes to the current four AQMAs
- Investigations into diffusion tube exceedences at Cumbernauld Town Centre will continue to establish conclusively if there is any relevant exposure in terms of the hourly mean objective for NO_2 .

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- The council will continue to implement the measures within the Air Quality Action Plan, and work towards the revision and republication of the Action Plan in 2017.
- As per the instruction in the Council's Air Quality grant award a FIDAS particulate monitor to measure PM₁₀ and PM_{2.5} will be purchased and installed in the Chapelhall AQMA monitoring site.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	Chapelhall	Roadside	278174	663124	NO ₂ , PM ₁₀	Y	Chemiluminescent; TEOM	20	5	2.0
CM2	Croy	Special – by quarry	272775	675738	PM ₁₀ , NO ₂ , SO ₂	N	Chemiluminescent; TEOM	30	10	2.0
CM3	Whifflet (Coatbridge)	Urban background	273674	663927	PM ₁₀	Y	TEOM	20	30	2.0
CM4	Menteith Rd (Motherwell)	Roadside	275458	656792	PM ₁₀	Y	TEOM	20	10	2.0
CM5	Shawhead (Coatbridge)	Roadside	273411	662997	PM ₁₀ , NO ₂	Y	Chemiluminescent BAM	22	9	2.0
CM6	Kirkshaws (Coatbridge)	Roadside	272523	663030	PM ₁₀ , NO ₂ , SO ₂	Y	Chemiluminescent BAM	20	8	2.0
CM7	New	Roadside	269144	661496	PM ₁₀ , NO ₂	N	Chemiluminescent	30	10	2.0

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
	Edinburgh Rd						BAM			
CM8	Sunnyside Rd (Coatbridge)	Roadside	269921	670389	PM ₁₀ , NO ₂	N	Chemiluminescent BAM	30	10	2.0
CM9	Civic Centre (Motherwell)	Mobile lab	275788	656219	PM ₁₀ , NO ₂	Y	Chemiluminescent TEOM	50	15	3.0
CM10	Kenilworth Dr (Airdrie)	Roadside	277385	665837	PM ₁₀ , NO ₂	N	Chemiluminescent BAM	30	10	2.0
CM11	Moodiesburn	Roadside	269921	670389	PM ₁₀	N	Chemiluminescent BAM	50	5	2.0

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT10	Castle Court, Castlecary	Roadside	278528	677864	NO ₂	N	10	2	N
DT47	Layby in Stand	Roadside	276538	668899	NO ₂	N	10	2	N
DT48	Bus stop, Bron Way, Cumbernauld	Kerbside	275920	674203	NO ₂	N	10	2	N
DT49	Swimming pool, Kilsyth	Kerbside	271514	678040	NO ₂	N	50	2	N
DT50	1791 Cumbernauld Rd, Stepps	Kerbside	265198	668024	NO ₂	N	25	2	N
DT51	131 Cumbernauld Rd, Stepps	Kerbside	265971	668567	NO ₂	N	30	2	N
DT52	Traffic lights, A80 eastbound, Moodiesburn	Kerbside	269966	670412	NO ₂	N	30	30	N
DT53	Traffic lights, A80 westbound, Moodiesburn	Kerbside	269986	670400	NO ₂	N	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT54	Gartcoh Lochend Rd & Cb Jct A752	Urban background	269828	668354	NO ₂	N	20	2	N
DT55	Whitelaw Rd end, Glenboig	Urban background	272614	668138	NO ₂	N	50	2	N
DT56	Garnqueen Ave (1 st lamppost LHS), Glenboig	Urban background	271751	668432	NO ₂	N	50	2	N
DT57	Main St Jnc Carrick View (1 st lamppost LHS), Glenboig	Urban background	272030	668564	NO ₂	N	10	2	N
DT58	Lamppost near 115 Glenboig Rd	Urban background	272743	668103	NO ₂	N	2	2	N
DT59	Adjacent to 10-16 Coronation Pl, Mount Ellen	Urban background	269356	669173	NO ₂	N	20	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT61	Under bridge Central Way (eastbound), Cumbernauld	Roadside	275778	674440	NO ₂	N	10	2	N
DT62	Under bridge Central Way (westbound), Cumbernauld	Roadside	275920	674511	NO ₂	N	10	2	N
DT63	Central Way (westbound), Cumbernauld	Roadside	275642	674271	NO ₂	N	10	2	N
DT100	Civic Centre, Motherwell	Roadside	275820	656208	NO ₂	Y	10	2	N
DT101	Shields Rd, Motherwell	Roadside	276594	655113	NO ₂	N	15	2	N
DT102	Emily Dr, Motherwell	Urban background	275437	655696	NO ₂	N	15	2	N
DT103	Kethers Lane, Motherwell	Urban background	273986	656985	NO ₂	N	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT104	Coursington Rd, Motherwell	Urban background	276178	657344	NO ₂	N	20	2	N
DT105	Craigneuk Rd, Carfin	Urban background	277244	658415	NO ₂	N	10	2	N
DT106	Camp St, Motherwell	Urban background	275654	656342	NO ₂	N	10	2	N
DT107	Braehead Farm, Bargeddie	Roadside	270929	663464	NO ₂	N	500	50m to A8	N
DT108	MSA Factory, Shawhead, Coatbridge	Roadside	273830	662676	NO ₂	N	500	50m to A8	N
DT110	New Edinburgh Rd (1), near M74, Uddingston	Roadside	272789	675735	NO ₂	N	30	2	N
DT111	New Edinburgh Rd (2), near M74, Uddingston	Roadside	272789	675735	NO ₂	N	15	2	N
DT112	New Edinburgh Rd	Roadside	272789	675735	NO ₂	N	10	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
	(3),near M74, Uddingston								
DT113	Tinkers Lane, Motherwell	Roadside	274305	656466	NO ₂	N	20	2	N
DT114	Main St, Overtown	Kerbside	280370	653072	NO ₂	N	15	2	N
DT115	Ravenscraig by-pass	Roadside	276868	657027	NO ₂	N	500	2	N
DT116	Delburn St, Motherwell	Urban background	275981	656111	NO ₂	Y	80	2	N
DT117	Hamilton Rd, Motherwell	Urban background	275091	656968	NO ₂	N	20	2	N
DT118	Shawhead roundabout, Coatbridge	Kerbside	273432	662965	NO ₂	Y	30	2	N
DT119	Kirkshaws Rd, Coatbridge	Roadside	271939	663179	NO ₂	Y	10	2	N
DT120	Watsonville, Motherwell	Kerbside	275237	656662	NO ₂	Y	10	2	N
DT121	Flannigan Grove, Bellshill	Urban	273180	660350	NO ₂	N	30	30	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
		background							
DT122	Main St, Mossend	Roadside	274082	660308	NO ₂	N	50	2	N
DT123	Hamilton Rd, Orbiston, Bellshill	Kerbside	272687	659512	NO ₂	N	20	2	N
DT124	Scotmid, Tannochside	Kerbside	270073	661870	NO ₂	N	20	2	N
DT125	Main St, Bellshill (nr Bellshill Academy)	Kerbside	273767	660281	NO ₂	N	5	5	N
DT126	Main St, Bellshill (nr jnc Motherwell Rd)	Roadside	273133	660117	NO ₂	N	20	5	N
DT127	Main St, Bellshill (nr Tesco delivery rd)	Roadside	273541	660339	NO ₂	N	1	2	N
DT128	Matalan, Wishaw	Roadside	278059	655368	NO ₂	N	10	2	N
DT129	Newmains Police Station	Roadside	282392	656016	NO ₂	N	7	2	N
DT130	Main St, Wishaw (bottom)	Roadside	279118	655327	NO ₂	N	5	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT133	Coatbridge 1, Bank St	Roadside	272887	664991	NO ₂	N	2	2	N
DT134	Coatbridge 2, Whifflet Court	Kerbside	273655	664003	NO ₂	Y	10	20	N
DT135	Grahamshill St, Airdrie	Kerbside	277276	665615	NO ₂	N	10	2	N
DT136	Airdrie 3, Springwells Cres	Roadside	274162	674130	NO ₂	N	30	2	N
DT137	Auchenkilns, Cumbernauld	Roadside	274164	674130	NO ₂	N	30	2	N
DT138	Main St, Chapelhall (nr shops)	Roadside	278037	662798	NO ₂	Y	10	2	N
DT139	Lauchope St/Main St jnc, Chapelhall	Roadside	278178	663111	NO ₂	Y	10	2	N
D140	Dundyvan Rd, Coatbridge	Kerbside	273293	664120	NO ₂	N	5	1	N
DT141	Main St (1), Harthill (nr	Kerbside	290652	664493	NO ₂	N	10	2	N

North Lanarkshire Council

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
	shops)								
DT142	Salsburgh, house no 337, R15	Roadside	283850	663082	NO ₂	N	15	30	N
DT143	Main St (2), Harthill (nr shops)	Roadside	290482	664386	NO ₂	N	10	2	N
DT144	Lab 1 Constarry Rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT145	Lab 2 Constarry Rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT146	Lab 3 Constarry rd, Croy	Roadside	272789	675735	NO ₂	Y	100	5	Y
DT147	Bank St, Coatbridge(nearest house)	Roadside	272947	665037	NO ₂	N	15	0	N
DT148	Main St, Chapelhall lamp post R32	Kerbside	278105	663174	NO ₂	Y	15	2	N
DT149	Main St, Chapelhall, lamp post R33	Kerbside	278119	663075	NO ₂	Y	15	2	N

North Lanarkshire Council

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT150	Eastfield Rd, Cumbernauld (lamppost R6P783)	Kerbside	275160	676210	NO ₂	Y	25	2	N
DT151	Main St, Holytown	Urban background	276635	660569	NO ₂	N	10	2	N
DT152	Coatbridge Rd, Townhead (nr shops)	Roadside	272391	665824	NO ₂	N	10	2	N
DT153	72 Townhead Rd, Coatbridge	Roadside	271720	666053	NO ₂	N	20	2	N
DT154	Sunnyside Rd, Coatbridge	Roadside	273042	665176	NO ₂	N	20	2	N
DT156	Stirling St, Airdrie	Roadside	276005	665406	NO ₂	N	50	2	N
DT157	31 Station Rd, Muirhead	Roadside	268442	669262	NO ₂	N	15	2	N
DT158	Croftmoraig Cres, Moodiesburn	Roadside	270281	671715	NO ₂	N	15	2	N

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT159	Croftmoraig Avenue, Moodiesburn	Roadside	270311	671702	NO ₂	N	10	2	N
DT160	Glenview Cres, Moodiesburn	Roadside	270391	671505	NO ₂	N	10	2	N
DT161	Bridgend Cres, Moodiesburn	Roadside	269071	670889	NO ₂	N	1	1	N
DT162	Auchingoch Rd, Moodiesburn	Roadside	269022	670979	NO ₂	N	2	1	N
DT163	191 Carfin St, New Stevenson	Roadside	276700	658972	NO ₂	N	112	2	N
DT164	Deedes St, Airdrie	Roadside	274819	665005	NO ₂	N	7	2	N
DT165	12 Morar Way, Carfin	Roadside	277161	659335	NO ₂	N	10	1	N
DT166	12 Inchwood Rd, Westfield, Cumbernauld	Roadside	273098	673321	NO ₂	N	10	1	N

North Lanarkshire Council

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
DT167	12 Leckethill Ct, Westfield, Cumbernauld	Roadside	272634	672994	NO ₂	N	10	1	N

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
CM1 (Chapelhall)	Roadside	Automatic	-	-	41	35	33.8	32.7	33.5 ⁽³⁾
CM2 (Croy)	Special – by quarry	Automatic	99.3	99.3	21	23	20.6	20	19.3
CM4(Menteith Rd, Mwell)	Roadside	Automatic							
CM5 (Shawhead, Coatbridge)	Roadside	Automatic	93.0	93.0	36	35	34.3	32.4	36.0
CM6 (Kirkshaws, Coatbridge)	Roadside	Automatic	97.0	97.0	-	-	-	20.3	25.0
CM7 (new Edinburgh Rd, Uddingston)	Roadside	Automatic	Not validated	Not validated	-	-	-	-	Not validated
CM8 (Sunnyside rd, Coatbridge)	Roadside	Automatic	Not validated	Not validated	-	-	-	-	Not validated
CM9 (Civic Centre Mwell)	Roadside	Automatic	Not validated	Not validated	-	-	-	-	Not validated
CM10 (Kenilworth Dr, Airdrie)	Roadside	Automatic	Not validated	Not validated	-	-	-	-	Commenced 2016
CM11 (Moodiesburn)	Roadside	Automatic	Not validated	Not validated	25	25	20.2	21.8	Not validated
DT10 (Castle Ct, Castlecary)	Roadside	Diffusion Tube	-	-	-	29.0	27.0	31.7	28.5

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
DT47 (layby in Stand)	Roadside	Diffusion Tube	83	83	25.9	23.0	23.0	22.5	21.4
DT48 (Bus stop, Bron Way, Cumbernauld)	Kerbside	Diffusion Tube	83	83	39.8	32.4	33.8	32.3	32.9
DT49 (Swimming Pool, Kilsyth)	Kerbside	Diffusion Tube	67	67	23.3	24.5	21.3	22.1	18.8 ⁽³⁾
DT50 (1791 Cumbernauld Rd, Stepps)	Kerbside	Diffusion Tube	92	92	34.7	27.1	22.7	25.2	24.7
DT51 (131 Cumbernauld Rd, Stepps)	Kerbside	Diffusion Tube	92	92	34.1	30.2	27.5	28.6	23.3
DT52 (Traffic lights eastbound A80)	Kerbside	Diffusion Tube	92	92	30.8	28.5	24.5	25.6	22.0
DT53 (Traffic lights A80 westbound, Moodiesburn)	Kerbside	Diffusion Tube	92	92	28.4	22.6	19.2	22.6	22.0
DT54 (Gartcosh, Lochend Rd & Cb jnc A752)	Urban background	Diffusion Tube	92	92	23.3	30.8	24.6	24.5	24.6
DT55 (Whitelaw Rd end, Glenboig)	Urban background	Diffusion Tube	92	92	15.3	16.2	21.3	13.6	13.6
DT56	Urban	Diffusion Tube	83	83	15.5	17	16	14.2	14.8

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
(Garnqueen Ave, 1 st lamppost, Glenboig)	background								
DT57 (Main St jnc Carrick View, 1 st lamppost LHS, Glenboig)	Urban background	Diffusion Tube	92	92	16.3	20.4	18.4	17.1	16.7
DT58 (lamppost nr 115 Glenboig Rd)	Urban background	Diffusion Tube	92	92	18.3	18.4	17.7	16.2	16.0
DT59 (adj 10-16 Coronation Pl, Mount Ellen)	Urban background	Diffusion Tube	92	92	22.3	24.7	19.8	20.8	18.8
DT61 (under bridge, Central Way, Eastbound, Cumbernauld)	Roadside	Diffusion Tube	92	92	47.8	47.2	56	65.1	<u>74.3</u>
DT62 (Under bridge, Central Way, Westbound, Cumbernauld)	Roadside	Diffusion Tube	92	92	40.2	40.8	41.4	41.3	44.8
DT63 (Central Way, westbound, Cumbernauld)	Roadside	Diffusion Tube	92	92	39.6	34.7	37.3	31.7	35.4
DT100 (Civic	Roadside	Diffusion Tube	100	100	32.9	30.0	34.1	39.7	38.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
Centre, Mwell)									
DT101 (Shields Rd, Mwell)	Roadside	Diffusion Tube	100	100	29.2	26.7	28.9	23.3	24.6
DT102 (Emily Dr, Motherwell)	Urban background	Diffusion Tube	100	100	13.6	13.7	12.2	10.6	11.1
DT103 (Kethers Lane, Mwell)	Urban background	Diffusion Tube	100	100	17.1	15.8	17	13.9	12.8
DT104 (Coursington rd, Mwell)	Urban background	Diffusion Tube	92	92	12.4	13	10.5	9.6	11.6
DT105 (Craigneuk Rd, Carfin)	Urban background	Diffusion Tube	100	100	17.9	16.1	17.3	15.1	15.6
DT106 (Camp St, Mwell)	Urban background	Diffusion Tube	100	100	22.8	22.2	19.5	18.1	22.6
DT107 (Braehead Farm, Bargeddie)	Roadside	Diffusion Tube	100	100	40.8	40.9	44.4	37.5	42.7
DT108 (MSA factory, Shawhead)	Roadside	Diffusion Tube	100	100	48.9	38.2	40	36.5	43.5
DT110 (New Edinburgh rd (1))	Roadside	Diffusion Tube	92	92	43.4	38.1	35.6	33.8	31.8
DT111 (New Edinburgh Rd(2))	Roadside	Diffusion Tube	100	100	35.2	38.6	39.2	36.5	38.4
DT112 (New Edinburgh Rd (3))	Roadside	Diffusion Tube	100	100	38.6	39.6	37.7	35.0	33.8

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
DT113 (Tinkers Lane, Mwell)	Roadside	Diffusion Tube	100	100	28.3	24.3	24.5	22.6	21.5
DT114 (Main St, Overtown)	Kerbside	Diffusion Tube	100	100	22.4	23.3	21.6	17.8	17.4
DT115 (Ravenscraig bypass)	Roadside	Diffusion Tube	100	100	20.7	19.5	16.5	16.4	15.7
DT116 (Delburn St, Mwell)	Urban background	Diffusion Tube	92	92	28.8	24.6	28.1	26.1	27.9
DT117 (Hamilton Rd, Mwell)	Urban background	Diffusion Tube	100	100	44	39	35.9	53.8(35.2)	30.2
DT118 (Shawhead roundabout, Coatbridge)	Kerbside	Diffusion Tube	92	92	37.5	34.2	35.3	30.2	33.8
DT119 (Kirkshaws Rd, Coatbridge)	Roadside	Diffusion Tube	92	92	46.2	41.5	39.9	36.2	34.1
DT120 (Watsonville, Mwell)	Kerbside	Diffusion Tube	92	92	25.3	28.5	26.9	22.0	17.0
DT121 (Flannigan Grove, Bellshill)	Urban background	Diffusion Tube	100	100	26.6	24.1	25	19.6	18.4
DT122 (Main St, Mossend)	Roadside	Diffusion Tube	92	92	38.7	34.3	35.7	29.3	27.1
DT123 (Hamilton Rd, Bellshill)	Kerbside	Diffusion Tube	100	100	26.2	27	29.6	23.1	22.5

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
DT124 (Scotmid, Tannochside)	Kerbside	Diffusion Tube	100	100	33.8	30.2	38.7	25.8	25.4
DT125 (Main St, nr Bellshill Academy)	Kerbside	Diffusion Tube	92	92	26.9	21.1	20.8	17.3	16.0
DT126 (Main St, Bellshill at Mwell Rd jnc)	Roadside	Diffusion Tube	100	100	28.9	25.6	28.7	21.5	18.2
DT127 (Main St, Bellshill nr tesco delivery rd)	Roadside	Diffusion Tube	100	100	24.4	24.1	23.7	18.5	19.8
DT128 (Matalan, Wishaw)	Roadside	Diffusion Tube	100	100	31.2	31.1	29.3	24.7	24.7
DT129 (Newmains Police Station)	Roadside	Diffusion Tube	100	100	37.6	29.6	34.7	32.9	26.3
DT130 (Main St, bottom, Wishaw)	Roadside	Diffusion Tube	100	100	18.5	19.6	17.9	15.8	14.8
DT133 (Coatbridge 1, Bank St)	Roadside	Diffusion Tube	92	92	44.3	34.3	37.2	32.1	27.7
DT134 (Coatbridge 2, whifflet Court)	Kerbside	Diffusion Tube	100	100	28.5	28.9	25.5	25.0	20.1
DT135 (Grahamshill St, Airdrie)	Kerbside	Diffusion Tube	100	100	45.9	38.3	37.9	38.7	29.0
DT136 (Airdrie)	Roadside	Diffusion Tube	92	92	22.2	24.5	18.5	16.8	13.6

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
3, Springwells Cres)									
DT137 (Auchenkilns, Cumbernauld)	Roadside	Diffusion Tube	58	58	25.9	25.0	22.0	20.7	17.9 ⁽³⁾
DT138 (Main St, Chapelhall, nr shops)	Roadside	Diffusion Tube	100	100	33	29.8	27.9	23.6	26.9
DT139 (Lauchope St, Chapelhall jnc)	Roadside	Diffusion Tube	100	100	48.2	34.3	42.9	35.6	33.8
DT140 (Dundyvan rd, Coatbridge)	Kerbside	Diffusion Tube	100	100	31.7	31.4	29.4	23.9	20.4
DT141 (harthill, Main St (1))	Kerbside	Diffusion Tube	92	92	22.1	21.4	20.3	14.9	11.8
DT142, house no 337 (Salsburgh, R15)	Roadside	Diffusion Tube	100	100	27.4	23.6	26.0	20.7	20.4
DT143(Harthill, Main St (2))	Roadside	Diffusion Tube	100	100	23.1	22.6	21.1	19.2	17.0
DT144 (Lab 1, Constarry rd, Croy 1)	Roadside	Diffusion Tube	100	100	23.5	20.2	19.2	15.8	14.1
DT145(Lab 2, Constarry Rd, Croy 2)	Roadside	Diffusion Tube	100	100	23.9	20.7	19.9	17.0	14.8
DT146 (Lab 3, Constarry rd, Croy 3)	Roadside	Diffusion Tube	100	100	20.9	19.4	18.5	18.1	17.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
Dt147 (Bank St, Coatbridge)	Roadside	Diffusion Tube	100	100	51.3	36.1	30.9	31.7	26.3
DT148 (Main St, Chapelhall, R32)	Kerbside	Diffusion Tube	100	100	48.3	37.2	37.7	29.8	35.4
DT149(Main St, Chapelhall, R33)	Kerbside	Diffusion Tube	100	100	39.6	34.8	36.4	34.4	26.8
DT150 (eastfield rd, Cumbernauld, R6P783)	Kerbside	Diffusion Tube	83	83	34.1	28.7	29.6	28.0	26.1
DT151 (Main St, Holytown)	Urban background	Diffusion Tube	92	92	26.2	25.1	26.4	20.6	19.8
DT152 (Coatbridge rd shops, Townhead)	Roadside	Diffusion Tube	100	100	36.3	33.6	32.2	30.0	32.4
DT153 (72 Townhead rd, Coatbridge)	Roadside	Diffusion Tube	100	100	32.4	26.9	23.5	21.4	20.4
DT154(Sunnyside rd, Coatbridge)	Roadside	Diffusion Tube	100	100	42.6	32.9	37.3	32.9	28.5
DT156 (Stirling St, Airdrie)	Roadside	Diffusion Tube	92	92	46.4	39.4	42.2	37.0	32.9
DT157(31 Station Rd, Muirhead)	Roadside	Diffusion Tube	83	83	30.2	27.1	24.2	27.1	25.4
DT158 (Croftmoraig Cres,	Roadside	Diffusion Tube	83	83	39.5	24.2	21.7	20.3	19.7

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
Moodiesburn)									
DT159(Croftmorraig Ave, Moodiesburn)	Roadside	Diffusion Tube	100 for 2014	-	32.5	21.5	21.9	27.1	-
DT160 (Glenview Cres, Moodiesburn)	Roadside	Diffusion Tube	100 for 2014	-	-	21.5	21.5	20.4	-
DT161(Bridgend Cres, Moodiesburn)	Roadside	Diffusion Tube	92	92	-	-	18.5	16.0	18.3
DT162 (Auchingoch rd, Moodiesburn)	Roadside	Diffusion Tube	75	75	-	-	21.4	19.2	17.2
DT163 (191 Carfin Rd, New Stevenson)	Roadside	Diffusion Tube	67	67	-	-	16.3	17.2	18.9 ⁽³⁾
DT164 (Deedes St, Airdrie)	Roadside	Diffusion Tube	92	92	-	-	28.8	41.3(32.9)	31.3
DT165 (12 Morar Way, Carfin)	Roadside	Diffusion Tube	67	67	-	-	-	18.4	28.6 ⁽³⁾
DT166 (12 Inchwood Rd, Westfield, Cnald)	Roadside	Diffusion Tube	-	-	-	-	-	-	-
DT167 (12 Leckethill Ct, Westfield, Cnald)	Roadside	Diffusion Tube	-	-	-	-	-	-	-

Notes: Exceedences of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedence of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG(16) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A.1 – Trends in Annual Mean NO₂ Concentration at Automatic Sites

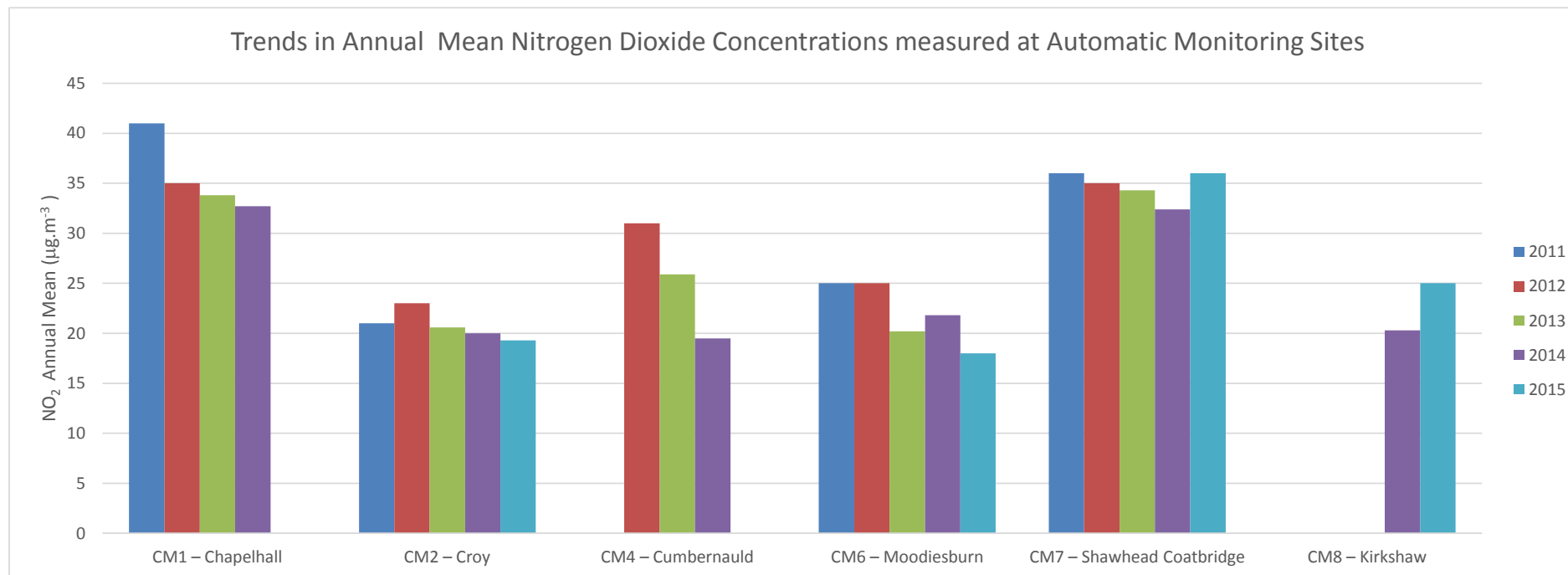


Figure A.2 – Trends in Annual Mean NO₂ Concentration at Urban Background Sites

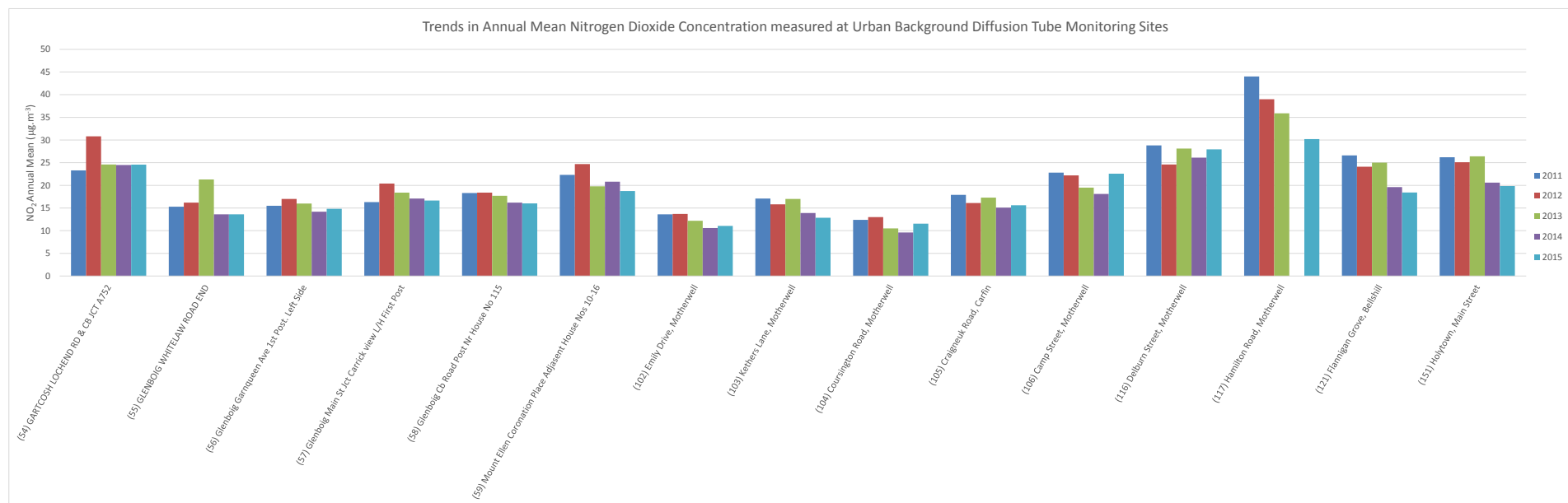


Figure A.3 – Trends in Annual Mean NO₂ Concentration at Roadside Sites (1)

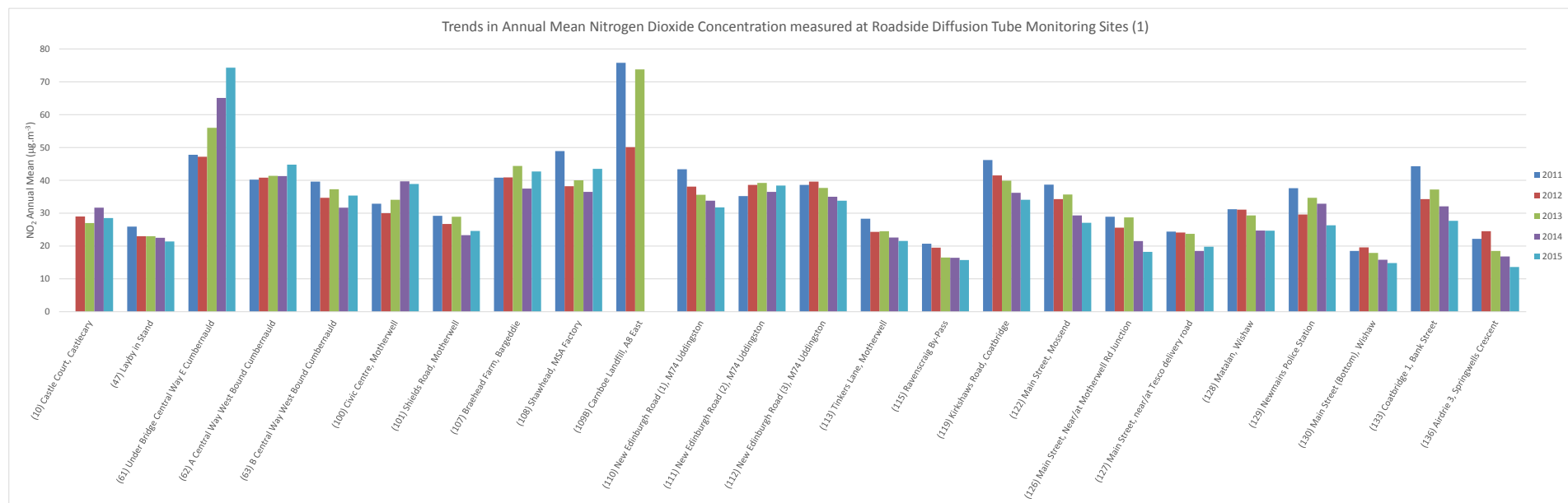


Figure A.4 – Trends in Annual Mean NO₂ Concentration at Roadside Sites (2)

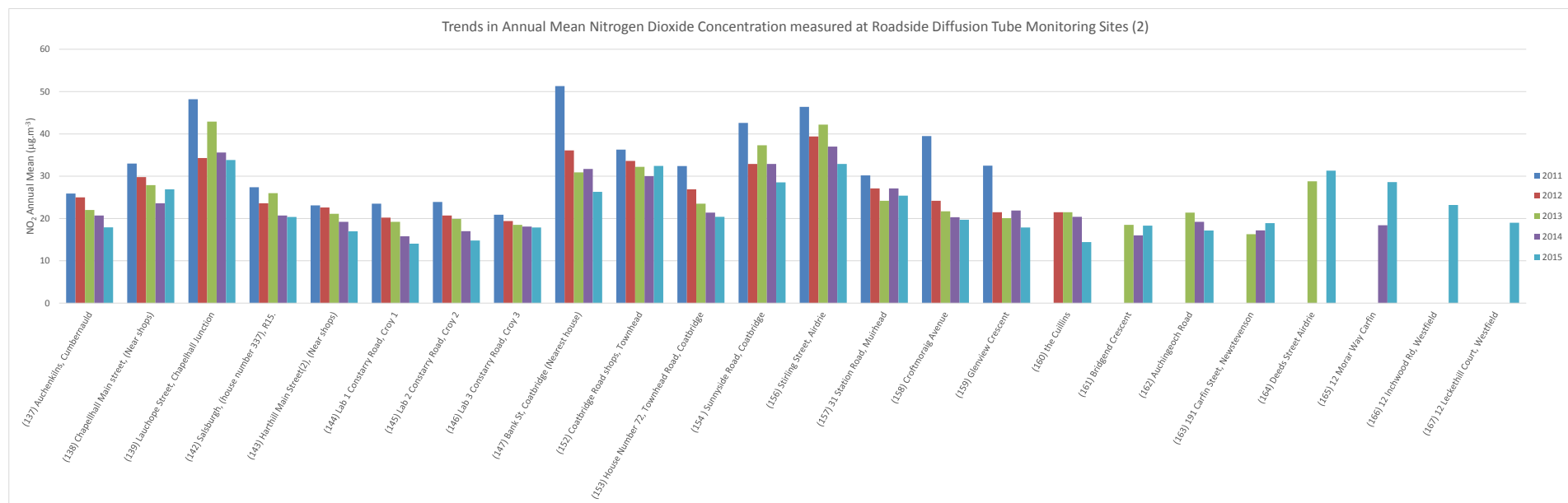


Figure A.5 – Trends in Annual Mean NO₂ Concentration at Kerbside Sites

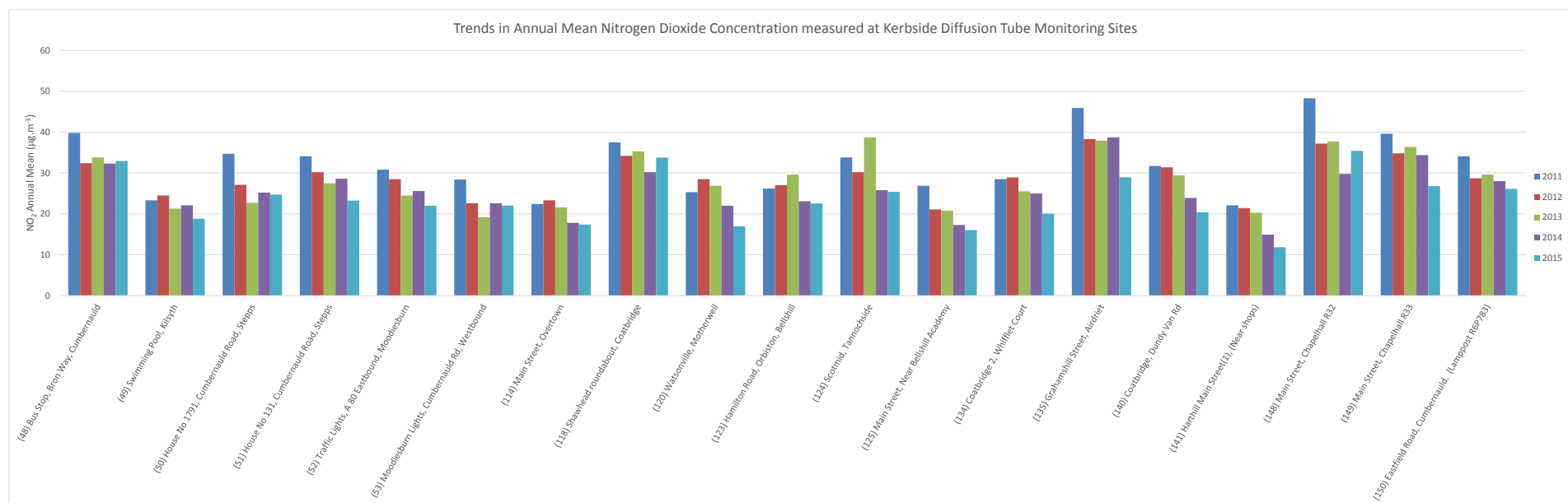


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2011	2012	2013	2014	2015
CM1 - Chapelhall	Roadside	Automatic	68	68	2	0	0	2	????
CM2- Croy	Special – by quarry	Automatic	99.3	99.3	0	0	0	0	0
CM4- Cumbernauld	Roadside	Automatic	31.6	95.8	N/A	1	0	0(100)	N/A
CM6- Moodiesburn	Roadside	Automatic	99.4	99.4	0	0	0	0	0
CM7- Shawhead (Coatbridge)	Roadside	Automatic	93.0	93.0	0	0	0	0	0
CM8- Kirkshaws	Roadside	Automatic	97.0	97.0	-	-	-	0(99)	0

Notes: Exceedences of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2011	2012	2013	2014	2015
CM1-Chapelhall	Roadside	Not known	Not known	19	16	19.1	19.2	18.5 ⁽⁴⁾
CM2-Croy	Special-by quarry	97.0	97.0	15	13	17.6 ⁽³⁾	15.4	12
CM3-Whifflet (Coatbridge)	Urban background	94.0	94.0	15	13	15.1	13.1	12
CM4-Cumbernauld	Roadside	-	-	14	13	15.7	15.1	-
CM5-Motherwell	Roadside	67.2	67.2	19	15	18.2	15.1	13
CM6-Moodiesburn	Roadside	82.8	82.8	17	16	15.5	10.8	10
CM7-Shawhead (Coatbridge)	Roadside	67.1	67.1	19	11	14.0	13.3	16
CM8-Kirkshaws	Roadside	93.2	93.2	-	-	-	14.8	13

Notes: Exceedences of the PM₁₀ annual mean objective of 18µg/m³ are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Data capture was only 48% so has been annualised – see Appendix C

Figure A.6 – Trends in Annual Mean PM₁₀ Concentration at Automatic Sites

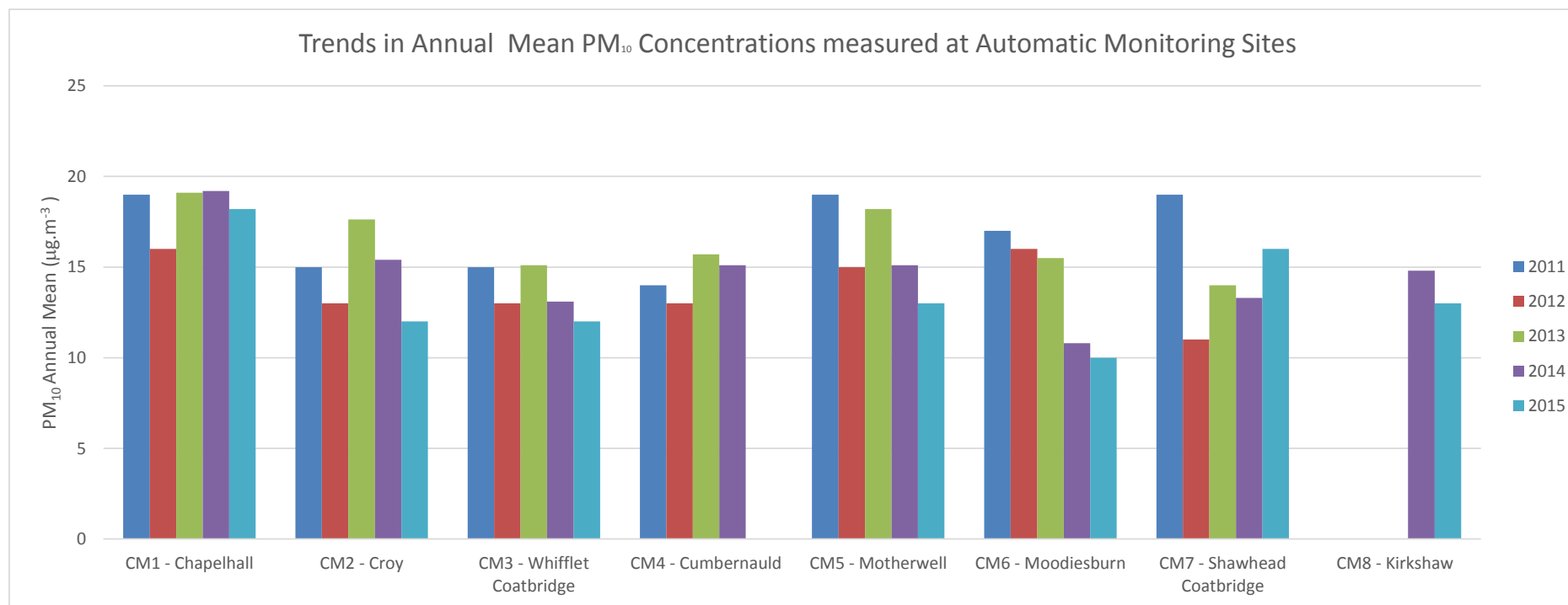


Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
				2011	2012	2013	2014	2015
CM1-Chapelhall	Roadside	-	-	6	0(46)	0	1(-)	-
CM2-Croy	Special-by quarry	97.0	97.0	1(36)	1(39)	4(46)	3	1
CM3-Whifflet	Urban background	94.0	94.0	1	1	0	0	1
CM4-Cumbernauld	Roadside	-	-	1(37)	1	0(33)	0(25)	-
CM5-Motherwell	Roadside	67.2	67.2	5(49)	0(35)	2(38)	0	0(35)
CM6-Moodiesburn	Roadside	82.8	82.8	4(45)	3(38)	2(37)	0	0(30)
CM7-Shawhead	Roadside	67.1	67.1	3(43)	0(31)	1(31)	0(19)	1(36)
CM8-Kirkshaws	Roadside	93.2	93.2	-	-	-	0(21)	0

Notes: Exceedences of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 7 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Table A.7 – SO₂ Monitoring Results

Site ID	Site Type	Valid Data Capture for monitoring Period (%) ⁽¹⁾	Valid Data Capture 2014 (%) ⁽²⁾	Number of Exceedences (percentile in bracket) ⁽³⁾		
				15-minute Objective (266 µg/m ³)	1-hour Objective (350 µg/m ³)	24-hour Objective (125 µg/m ³)
CM2-Croy	Special-by quarry	98.9	98.9	0	0	0
CM8-Kirkshaws	Roadside	22.6	22.6	0(13µg/m ³)	0(11µg/m ³)	0

Notes: Exceedences of the SO₂ objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%)

(3) If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO₂ Monthly Diffusion Tube Results for 2015

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT10-Castle Ct, Castlecary	45.4	15.7	48.0	26.0	19.3	21.9	18.2	28.7	-	30.1	27.1			39.4
DT47-Layby in Stand	22.7	35.9	21.9	24.9	19.7	8.5	20.2	15.2	22.3	27.0	-	-	21.8	21.4	
DT48-Bron Way	38.3	54.4	35.8	42.5	28.6	22.1	28.8	20.4	30.3	34.9	-	-	33.6	32.9	
DT49-Swimming pool, Kilsyth	22.3	-	-	19.9	19.4	10.4	14.3	10.8	19.3	23.5	-	-	17.5	17.1	
DT50 – 1791 Cumbernauld R, Stepps	37.6	39.9	30.3	13.5	10.2	20.2	7.8	19.3	26.2	36.9	35.5	-	25.2	24.7	
DT51 – 131 Cumbernauld Rd, Stepps	-	46.6	19.1	39.1	12.4	12.2	19.7	19.9	21.7	30.2	38.0	2.1	23.7	23.3	
DT52 – A80 eastbound Moodiesburn	-	21.4	37.1	30.0	19.2	4.8	18.4	20.3	18.5	21.6	27.8	27.6	22.4	22.0	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT53-A80 westbound Moodiesburn	-	29.2	30.5	26.6	9.7	9.6	15.0	17.6	17.0	25.9	38.4			27.6
DT54-Lochend Rd & CB jnc A752, Gartcosh	-	31.2	37.5	1.6	29.5	22.3	15.5	23.8	24.6	27.5	33.1	29.3	25.1	24.6	
DT55-Whitelaw Rd end, Glenboig	-	16.2	24.3	15.7	9.1	9.9	8.4	9.2	9.5	13.4	21.6	15.5	13.9	13.6	
DT56-Garnqueen Ave, Glenboig	-	20.0	24.9	18.8	-	10.5	9.4	10.2	11.4	14.2	18.8	13.2	15.1	14.8	
DT57-Carrick View/Main St, Glenboig	-	25.6	28.9	20.8	6.6	15.2	9.7	12.1	13.1	18.6	21.9	14.5	17.0	16.7	
DT58-115 Coatbridge Rd, Glenboig	-	20.8	27.2	13.4	8.0	12.6	13.9	11.5	11.8	17.6	26.2	16.7	16.3	16.0	
DT59-10-16 Coronation Pl, Mount Ellen	-	23.4	33.2	22.4	7.0	16.7	14.0	14.2	17.1	21.4	23.7	17.4	19.1	18.8	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT61-Central Way eastbound Cumbernauld	-	92.3	95.9	86.9	104.0	72.7	63.5	94.5	24.8	56.7	73.8			69.3
DT62-Central Way westbound A Cumbernauld	-	44.1	73.8	48.9	51.9	38.7	32.7	47.0	34.8	39.7	41.9	49.1	45.7	44.8	
DT63 – Central Way westbound B Cumbernauld	-	35.9	49.8	35.4	38.8	36.1	23.3	30.5	29.2	30.2	43.4	44.2	36.1	35.4	
DT100 – Civic Centre Motherwell	53.8	25.7	41.8	44.2	37.6	37.2	27.3	35.8	35.7	42.0	47.6	47.5	39.7	38.9	
DT101 – Shields Rd Motherwell	36.3	20.4	16.1	29.2	10.7	21.1	21.0	27.4	23.3	32.8	35.8	27.1	25.1	24.6	
DT102 – Emily Dr Motherwell	15.3	14.5	17.5	12.9	6.5	7.9	5.4	7.8	5.5	11.8	16.5	13.8	11.3	11.1	
DT103 – Kethers Lane Motherwell	21.8	10.9	7.3	18.0	14.6	9.3	6.3	8.7	9.9	15.9	19.9	14.7	13.1	12.8	
DT104 – Coursington Rd Motherwell	18.4	13.5	11.1	10.1	5.7	8.2	-	19.3	5.8	12.4	13.8	11.5	11.8	11.6	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
DT105 – Craigneuk Rd, Carfin	20.6	22.7	19.2	17.3	10.2	14.3	10.9	11.4	11.6	20.6	22.6	9.6	15.9	15.6
DT106 – Camp St Motherwell	26.4	50.1	13.2	20.6	10.6	12.4	12.5	15.7	12.2	22.5	58.8	21.5	23.0	22.6
DT107 – Braehead Farm, Bargeddie	59.4	61.2	42.2	51.8	21.4	29.9	39.2	34.1	41.2	46.2	54.0	42.5	43.6	42.7
DT108 – MSA Factory, Shawhead	52.5	51.7	53.7	54.6	28.5	39.8	38.2	42.1	34.3	47.2	44.4	45.7	44.4	43.5
DT110 – New Edinburgh Rd (1), Uddingston	52.7	44.5	20.5	40.5	29.7	28.0	30.5	29.9	27.1	37.5	36.2	11.7	32.4	31.8
DT111 – New Edinburgh Rd (2), Uddingston	49.5	-	56.5	46.6	42.4	35.3	39.9	26.8	32.7	41.0	33.5	27.4	39.2	38.4
DT112 – New Edinburgh Rd (3), Uddingston	48.0	44.9	27.2	45.4	25.5	31.0	31.3	30.9	27.7	37.5	43.8	20.9	34.5	33.8

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
DT113 – Tinkers Lane, Motherwell	34.3	31.1	8.0	25.9	18.4	11.1	15.5	21.2	16.7	27.5	28.2	25.8	22.0	21.5	
DT114 – Main St, Overtown	22.2	12.4	19.3	20.0	16.9	9.1	16.4	13.2	16.4	22.7	26.6	17.8	17.8	17.4	
DT115 – Ravenscraig Bypass	21.4	16.5	27.9	17.6	7.2	11.8	7.9	12.2	11.0	18.1	24.5	16.4	16.0	15.7	
DT116 – Delburn St, Motherwell	40.6	31.2	37.4	33.1	20.4	10.9	23.1	26.1	23.6	33.1	35.9	26.6	28.5	27.9	
DT117 – Hamilton Rd, Motherwell	36.6	39.8	41.1	23.4	13.9	12.2	-	52.4	21.8	31.6	36.0	30.2	30.8	30.2	
DT118 – Shawhead roundabout, Coatbridge	55.9	40.7	27.9	27.9	26.0	16.2	31.3	31.9	32.7	41.5	51.0	30.6	34.5	33.8	
DT119 – Kirkshaws Rd, Coatbridge	54.2	45.7	36.7	36.0	2.1	8.9	-	34.4	34.6	42.5	46.0	41.5	34.8	34.1	
DT120 – Watsonville, Motherwell	30.0	-	12.9	12.6	9.6	8.2	14.2	17.7	16.6	25.6	30.6	12.6	17.3	17.0	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT121 – Flannigan Grove, Bellshill	22.2	-	24.9	16.6	13.8	7.8	12.7	16.5	16.3	23.3	28.8			23.9
DT122 – Main St, Mossend	40.1	39.2	28.5	22.6	17.4	14.9	25.7	26.2	26.1	23.5	34.6	32.6	27.6	27.1	
DT123 – Hamilton Rd, Bellshill	28.5	-	24.3	22.0	12.1	10.6	19.2	20.1	21.4	31.1	30.2	33.4	23.0	22.5	
DT124 – Scotmid, Tannochside	26.6	35.4	38.8	19.1	18.0	11.0	19.9	24.9	23.6	31.3	36.0	26.0	25.9	25.4	
DT125 – Main St, Bellshill (nr Academy)	18.7	26.0	19.8	13.0	11.5	8.7	11.4	11.9	11.8	22.1	23.6	18.0	16.4	16.0	
DT126 – Main St nr Motherwell Rd, Bellshill	18.3	23.2	18.7	16.7	12.4	8.2	20.0	20.2	-	28.9	26.5	11.4	18.6	18.2	
DT127 – Main St nr Tesco delivery, Bellshill	24.3	24.9	16.3	19.3	11.4	9.7	11.9	13.2	14.7	38.9	28.5	29.3	20.2	19.8	
DT 128 – Matalan, Wishaw	33.4	23.0	26.7	12.6	30.7	11.3	23.8	23.6	27.3	33.3	35.2	21.4	25.2	24.7	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT129 – Newmains Police Station	25.3	36.5	18.0	30.6	13.7	13.4	20.1	27.7	27.2	45.8	40.1			23.7
DT130 – Main St (bottom), Wishaw	15.4	17.3	17.5	16.6	13.3	5.2	11.6	13.4	12.6	19.1	25.2	14.3	15.1	14.8	
DT133 – Coatbridge 1, Bank St	30.5	18.5	35.4	27.4	26.3	15.7	22.1	25.8	30.7	37.6	40.3	28.7	28.3	2719.2.7	
DT134 – Coatbridge 2, Whifflet Court	20.6	18.0	20.6	19.2	28.0	9.3	-	19.3	21.3	25.8	22.7	20.5	20.5	20.1	
DT135 – Grahamshill St, Airdrie	52.2	18.6	53.5	24.7	20.4	13.7	26.9	26.1	27.2	1.6	38.8	50.8	29.5	29.0	
DT136 – Airdrie 3, Springwells Cres	1.7	14.8	15.9	15.7	12.2	2.0	11.7	13.2	13.5	19.2	25.6	21.2	13.9	13.6	
DT137 – Auchenkilns, Cumbernauld	21.3	-	22.6	14.2	2.1	6.2	11.2	21.2	19.6	22.1	21.9	18.4	16.4	16.1	

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
DT138 – Main St, Chapelhall (nr shops)	28.3	-	41.4	17.0	-	12.9	-	27.5	-	-	32.0	33.0	27.4	26.9
DT139 – Lauchope St, Chapelhall	52.6	37.3	49.0	27.4	19.9	12.9	25.3	52.9	23.0	38.1	45.5	30.2	34.5	33.8
DT140 – Dundyvan Rd, Coatbridge	28.6	16.3	24.6	20.0	19.2	7.2	23.5	17.0	17.0	27.5	24.0	24.6	20.8	20.4
DT141 - Main St (1), Harthill	16.5	13.5	9.3	17.9	9.4	10.0	9.8	16.0	2.1	21.2	2.0	17.2	12.1	11.8
DT142 – Salsburgh, hous 337, R15	25.9	31.5	13.4	24.7	13.6	22.0	-	16.8	14.5	21.4	24.8	20.0	20.8	20.4
DT143 – Main St 2, Harthill	27.5	14.1	14.1	7.2	15.6	10.0	14.4	18.3	14.0	21.4	26.1	25.2	17.3	17.0
DT144 – Lab 1, Constarry Rd, Croy	13.0	15.5	16.7	11.0	12.7	5.4	6.1	14.8	14.5	20.4	23.8	18.2	14.3	14.1
DT145 – Lab 2, Constarry rd, Croy	25.8	10.1	19.8	12.0	9.1	5.7	10.0	13.4	14.1	19.1	27.4	14.7	15.1	14.8

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
DT146 – Lab 3, Constarry Rd, Croy	30.1	14.8	27.7	17.6	14.3	7.1	8.8	15.0	25.1	20.8	22.1	15.5	18.2	17.9
DT147 – Bank St, Coatbridge	44.0	19.9	27.1	30.9	27.2	17.4	16.5	2.1	35.9	37.7	30.9	32.6	26.9	26.3
DT148 – Main St, Chapelhall R32	96.5	21.3	40.1	22.9	26.4	15.5	1.6	45.7	28.2	41.3	47.1	47.2	36.2	35.4
DT149 – Main St, Chapehall R33	42.7	2.0	26.1	20.7	18.6	10.0	16.7	27.2	30.4	40.0	39.9	34.6	27.3	26.8
DT150 – Eastfield Rd, Cumbernauld R6P783	45.1	25.7	42.3	2.1	16.9	11.6	14.8	29.7	16.1	37.4	40.2	38.0	26.7	26.1
DT151 – Main St, Holytown	35.0	16.1	13.8	18.6	-	13.7	14.3	-	9.2	23.5	32.1	26.2	20.3	19.8
DT152 – Coatbridge Rd, Townhead	50.5	25.9	27.4	32.5	-	15.3	24.4	32.9	16.7	39.0	33.3	66.2	33.1	32.4
DT153 – 72 Townhead Rd, Coatbridge	37.5	17.1	21.9	20.4	14.7	8.8	14.8	18.1	26.5	22.6	23.9	23.3	20.8	20.4

Site ID	NO ₂ Mean Concentrations (µg/m ³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
DT154 – Sunnyside Rd, Coatbridge	43.0	22.0	29.3	2.1	42.0	15.4	25.7	27.9	34.1	35.5	32.0	40.5	29.1	28.5
DT156 – Stirling St, Airdrie	34.2	28.2	27.1	29.7	27.2	16.1	31.1	34.2	45.7	42.6	38.8	48.0	33.6	32.9
DT157 – 31 Station Rd, Muirhead	-	38.9	39.0	28.3	17.2	10.6	16.7	20.9	22.6	-	33.7	31.3	25.9	25.4
DT158 – Croftmoraig Ave, Moodiesburn	-	29.1	29.6	23.7	12.4	10.9	10.2	13.4	15.7	21.3	27.9	27.2	20.1	19.7
DT159 – Glenviewn Cres, Moodiesburn	-	29.8	27.7	21.0	11.8	6.6	11.7	12.3	14.9	19.0	27.5	-	18.2	17.9
DT160 – The Cuillins, Moodiesburn	-	1.9	26.0	19.9	7.3	7.8	10.2	9.4	14.2	19.6	28.8	16.7	14.7	14.4
DT161 – Bridgend Cres, Moodiesburn	-	23.6	49.4	18.4	10.5	10.2	-	11.0	3.4	17.1	24.7	18.5	18.7	18.3

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	DT162 – Auchingoch Rd, Moodiesburn	-	19.6	27.3	22.2	10.1	8.8	13.2	14.0	13.8	22.9	29.4			11.3
DT163 – 189 Carfin Rd, New Stevenson	-	20.8	33.3	18.4	19.4	6.1	9.0	11.1	-	-	18.8	-	17.1	16.8	
DT164 – Deedes St, Airdrie	-	21.6	20.6	27.5	25.9	34.6	31.8	32.7	33.2	43.2	41.9	38.4	31.9	31.3	
DT165 – 12 Morar Way, Carfin	-	23.5	34.5	65.2	20.7	8.7	11.9	13.9	-	-	23.0	-	25.2	24.7	
DT166 – 12 Inchwood Rd, Westfield, Cumbernauld	-	37.5	36.1	34.0	8.8	10.3	14.6	18.9	-	-	23.1	30.2	23.7	23.2	
DT167 – 12 Leckethill Ct, Cumbernauld	-	28.0	27.5	22.6	15.6	10.3	10.5	12.2	13.2	28.6	24.6	19.8	19.4	19.0	

(1) See Appendix C for details on bias adjustment

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Bias Correction Factor from Local Co-Location Studies

North Lanarkshire Council undertake co-location measurements of NO₂ at Croy automatic monitoring site. Details of the co-location factor calculations, including the precision checks are presented in Figure C.1. The bias factor from the national database is presented in Figure C.2.

The co-location study gives a bias correction factor of 1.21 while the national adjustment factor is 0.98

Discussion of Choice of Factor to Use

The national co-location bias adjustment factor was considered more appropriate as it was based on a single co-location study and this included both roadside and kerbside sites. In contrast the Croy co-location site is specially sited close to a quarry and would be best described as urban (semi-rural) background site on the edge of Croy village. Consequently, it is judged that the national bias adjustment factor more accurately reflects the majority of the urban environment within North Lanarkshire. This is consistent with previous LAQM reports for North Lanarkshire Council.

Figure C.1 Co-location Study Croy

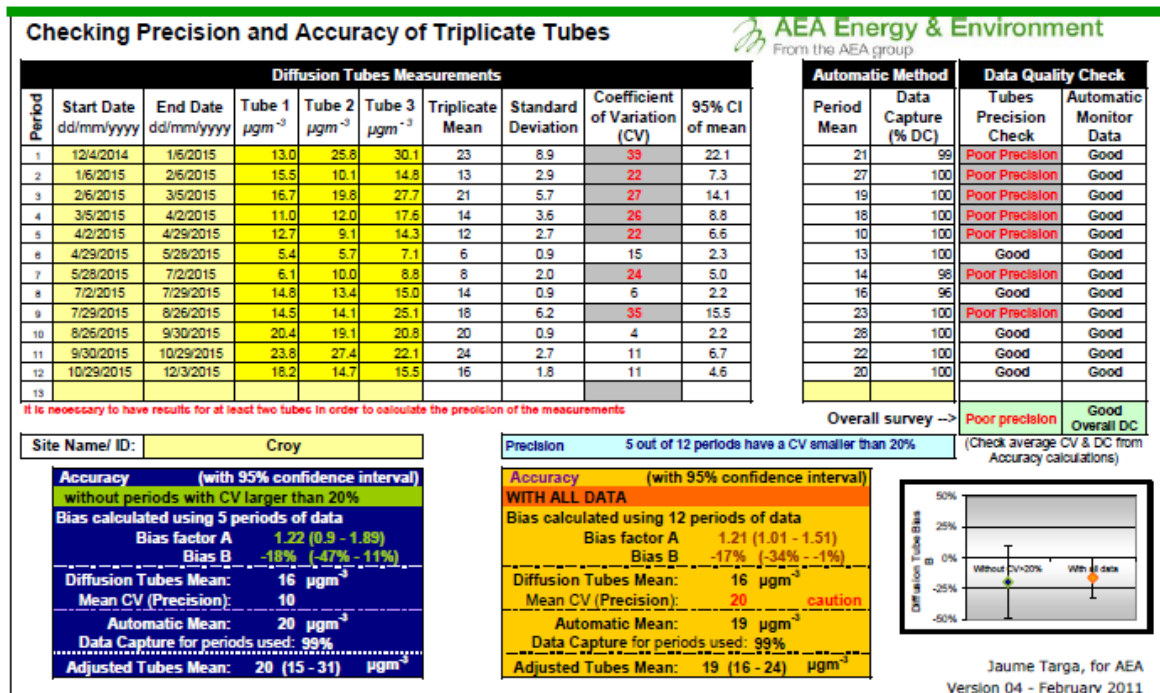
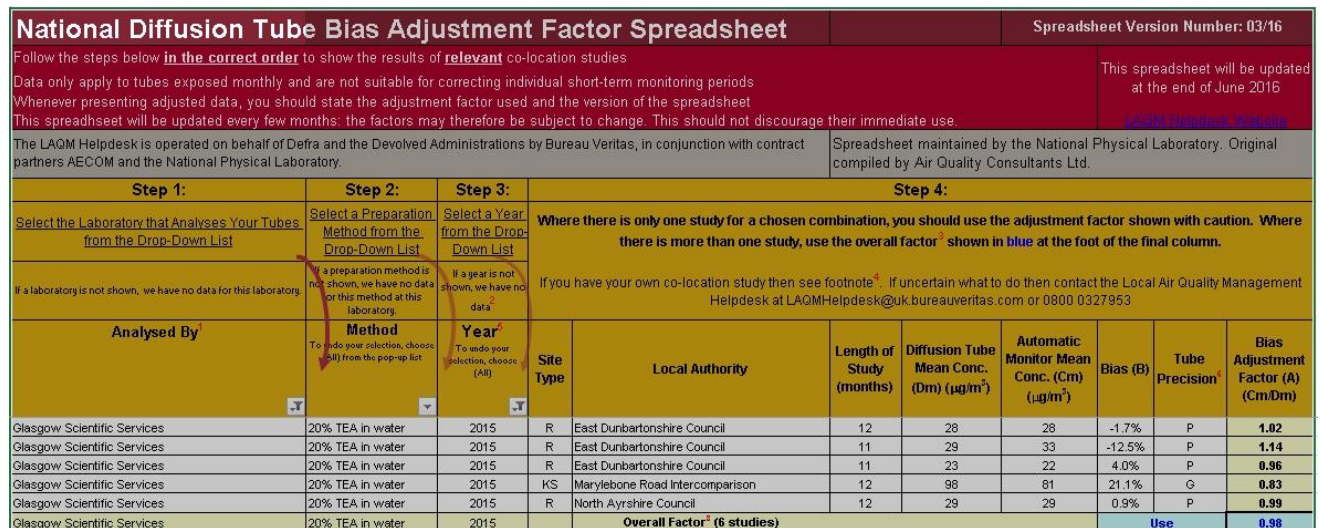


Figure C.2 Glasgow Scientific Services – National average bias adjustment factor 2015



PM Monitoring Adjustment

North Lanarkshire Council monitor PM₁₀ using two types of analyser :-

- Beta-attenuation monitor (BAM); and
- Tapered Element Oscillating Microbalance (TEOM)

Both the BAM and TEOM analysers are maintained by Horiba and undergo regular calibration.

The beta-attenuation monitors (BAMs) used by the Council have a heated inlet which has been found to cause evaporation of some semi-volatile particles thereby reducing the measured PM₁₀ concentration. All data have been provided ratified and gravimetric equivalent by Ricardo Energy and Environment.

NO₂ Monitoring Annualisation

Due to the data capture for annual mean NO₂ being below 75% at Chapelhall, the annual mean concentrations were annualised in accordance with the technical guidance (TG.16). The results are shown in Table C.1

Table C.1 Annualisation of NO₂ Concentration at Chapelhall

Month	Chapelhall	Grangemouth Moray	Waulkimillglen	Falkirk Grangemouth MC
jan		15	31	24
feb		20	32	29
mar		14		20
apr		15	7	20
may	26	10	9	12
jun	29	11	8	11
jul	25	12	8	11
aug	26	10	8	11
sep	30	17	14	18
oct	35	23	29	23
nov	40	18	20	19
dec	28	16	22	18
Annual Mean		15.1	17.1	18.0
Period Mean	29.9	14.6	14.8	15.4
Ratio Am/Pm		1.0	1.2	1.2
Average Ratio				1.1
Annualised Means				
Chapelhall	33.5			

Data capture was below 75% at 4 diffusion tuber sites, namely,

- DT49 – Swimming pool, Kilsyth
- DT137 – Auchenkilns
- DT163 – 189 Carfin Street
- DT165 – 12 Morar Way

The annual mean concentrations at these locations were annualised in accordance with the technical guidance TG.16. The results are shown in Tables C.2 – C.5.

Table C.2 Annualisation of NO₂ Concentration at Site (49) Swimming Pool, Kilsyth

Month	49 Swimming Pool Kilsyth	Grangemouth Moray	Waulkimillglen	Falkirk Grangemouth MC
jan	22.3	15	31	24
feb		20	32	29
mar		14		20
apr	19.9	15	7	20
may	19.4	10	9	12
jun	10.4	11	8	11
jul	14.3	12	8	11
aug	10.8	10	8	11
sep	19.3	17	14	18
oct	23.5	23	29	23
nov		18	20	19
dec		16	22	18
Annual Mean		15.1	17.1	18.0
Period Mean	16.8	14.6	14.8	15.4
Ratio Am/Pm		1.0	1.2	1.2
Average Ratio				1.1
Annualised Means				
49 Swimming Po	18.8			

Table C.3 Annualisation of NO₂ Concentration at Site (137) Auchenkilns

Month	(137) Auchenkilns	Grangemouth Moray	Waulkimillglen	Falkirk Grangemouth MC
jan	21.3	15	31	24
feb		20	32	29
mar	22.6	14		20
apr	14.2	15	7	20
may	2.1	10	9	12
jun	6.2	11	8	11
jul	11.2	12	8	11
aug	21.2	10	8	11
sep	19.6	17	14	18
oct	22.1	23	29	23
nov	21.9	18	20	19
dec	18.4	16	22	18
Annual Mean	16.43636364	15.1	17.1	18.0
Period Mean	16.0	14.6	14.8	15.4
Ratio Am/Pm		1.0	1.2	1.2
Average Ratio				1.1
Annualised Means				
(137) Auchenkilns	17.9			

Table C.4 Annualisation of NO₂ Concentration at Site (163) 189 Carfin Street

Month	(163) 189 Carfin St	Grangemouth Moray	Waulkimillglen	Falkirk Grangemouth MC
jan	20.8	15	31	24
feb	33.3	20	32	29
mar	18.4	14		20
apr	19.4	15	7	20
may	6.1	10	9	12
jun	9	11	8	11
jul	11.1	12	8	11
aug		10	8	11
sep		17	14	18
oct	18.8	23	29	23
nov		18	20	19
dec	17.1125	16	22	18
Annual Mean		15.1	17.1	18.0
Period Mean	16.9	14.6	14.8	15.4
Ratio Am/Pm		1.0	1.2	1.2
Average Ratio				1.1
Annualised Means				
(163) 189Carfin St	18.9			

Table C.5 Annualisation of NO₂ Concentration at Site (165) 12 Morar Way

Month	(165) 12 Morar Way	Grangemouth Moray	Waulkimillglen	Falkirk Grangemouth MC	
jan		23.5	15	31	24
feb		34.5	20	32	29
mar		65.2	14		20
apr		20.7	15	7	20
may		8.7	10	9	12
jun		11.9	11	8	11
jul		13.9	12	8	11
aug			10	8	11
sep			17	14	18
oct		23	23	29	23
nov			18	20	19
dec		25.175	16	22	18
Annual Mean			15.1	17.1	18.0
Period Mean		25.5	14.6	14.8	15.4
Ratio Am/Pm			1.0	1.2	1.2
Average Ratio					1.1

**Annualised Means
(163) 189Carfin St**

28.6

PM₁₀ Monitoring Annualisation

Due to the data capture for annual mean PM₁₀ being below 75% at Chapelhall. The annual mean concentrations were annualised in accordance with the technical guidance TG.16. The results are shown in Table C.6

Table C.6 Annualisation of PM₁₀ Concentration at Chapelhall

Month	Chapelhall	whifflet Coatbridge	Waulkimillglen	Falkirk Grangemou
jan		11	11	12
feb		13	12	12
mar		16	15	17
apr		15	14	15
may		11	5	13
jun	17	12	10	13
jul	18	10	9	11
aug	15	11	10	12
sep	16	13	10	13
oct	16	15	12	16
nov	18	11	13	10
dec	19	11	10	10
Annual Mean		12.4	10.9	12.8
Period Mean	17.0	11.8	9.9	12.3
Ratio Am/Pm		1.1	1.1	1.0
Average Ratio				1.1

**Annualised Means
Chapelhall**

18.2

Figure C.3 Ratified Data from Ricardo Energy and Environment for Chapelhall

Please note – this ratified data information was not sent by Ricardo Energy and Environment at the time by which report had to be submitted.

Figure C.4 Ratified Data from Ricardo Energy and Environment for Whifflet

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE COATBRIDGE WHIFFLET 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy and Environment

POLLUTANT	PM ₁₀ ⁺
Maximum hourly mean	137 µg m ⁻³
Maximum daily mean	55 µg m ⁻³
Average	12 µg m ⁻³
Data capture	94.0 %

* PM₁₀ Indicative Gravimetric Equivalent µg m⁻³

+ PM₁₀ as measured by a TEOM using a volatile correction model for Gravimetric Equivalent
Particulate matter concentrations are reported at ambient temperature and pressure.

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	1	1
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

Figure C.5 Ratified Data from Ricardo Energy and Environment for Croy

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE CROY 01 January to 31 December 2015

POLLUTANT	CO	PM ₁₀₊	NO ₂	NO _x	SO ₂
Maximum hourly mean	1.2 mg m ⁻³	223 µg m ⁻³	172 µg m ⁻³	763 µg m ⁻³	51 µg m ⁻³
Maximum daily mean	0.3 mg m ⁻³	52 µg m ⁻³	80 µg m ⁻³	329 µg m ⁻³	11 µg m ⁻³
Average	0.1 mg m ⁻³	12 µg m ⁻³	19 µg m ⁻³	38 µg m ⁻³	2 µg m ⁻³
Data capture	99.5 %	97 %	99.3 %	99.3 %	98.9 %

+ PM₁₀ as measured by a TEOM using a volatile correction model for Gravimetric Equivalent
 All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.
 NO_x mass units are NO_x as NO₂ µg m⁻³

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
Carbon Monoxide	Running 8-hour mean > 10.0 mg m ⁻³	0	0
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	1	1
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	0	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
Sulphur Dioxide	Annual mean > 20 µg m ⁻³	0	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

Figure C.6 Ratified Data from Ricardo Energy and Environment for Kirkshaws

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE KIRKSHAW 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy and Environment

POLLUTANT	PM ₁₀ +	NO ₂	NO _x	SO ₂
Maximum 15-minute mean	-	-	-	45 µg m ⁻³
Maximum hourly mean	144 µg m ⁻³	143 µg m ⁻³	935 µg m ⁻³	21 µg m ⁻³
Maximum 8-hour mean	-	-	-	8 µg m ⁻³
Maximum daily mean	47 µg m ⁻³	86 µg m ⁻³	319 µg m ⁻³	5 µg m ⁻³
99.9 th Percentile of 15-min mean	-	-	-	13 µg m ⁻³
99.7 th Percentile of hourly mean	-	-	-	11 µg m ⁻³
Average	13 µg m ⁻³	25 µg m ⁻³	50 µg m ⁻³	1 µg m ⁻³
Data capture	93.2 %	97.0 %	97.0 %	22.6 %

• PM₁₀ Instruments:

TEOM using a volatile correction model for Gravimetric Equivalent from 1 January 2015 to 31 March 2015

BAM using a gravimetric factor of 0.83333 for Indicative Gravimetric Equivalent from 1 April 2015

All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.

NO_x mass units are NO_x as NO₂ µg m⁻³

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	0	0
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	0	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
Sulphur Dioxide	Annual mean > 20 µg m ⁻³	0	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

Figure C.7 Ratified Data from Ricardo Energy and Environment for Moodiesburn

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE MOODIESBURN 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy and Environment

POLLUTANT	PM ₁₀ *+	NO ₂	NO _x
Maximum hourly mean	69 µg m ⁻³	122 µg m ⁻³	694 µg m ⁻³
Maximum daily mean	41 µg m ⁻³	68 µg m ⁻³	237 µg m ⁻³
98.08 th Percentile	30 µg m ⁻³	-	-
Average	10 µg m ⁻³	18 µg m ⁻³	40 µg m ⁻³
Data capture	82.8 %	99.4 %	99.4 %

* PM₁₀ Indicative Gravimetric Equivalent µg m⁻³

+ PM₁₀ instruments:

BAM using a gravimetric factor of 0.83333 for Indicative Gravimetric Equivalent from 1 January 2015

All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.

NO_x mass units are NO_x as NO₂ µg m⁻³

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	0	0
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	0	0

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

Figure C.8 Ratified Data from Ricardo Energy and Environment for Motherwell

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE MOTHERWELL 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy and Environment

POLLUTANT	PM ₁₀ *+
Maximum hourly mean	-
Maximum daily mean	57 µg m ⁻³
98.08th percentile of daily means	35 µg m ⁻³
Average	13 µg m ⁻³
Data capture	67.2 %

* PM₁₀ Indicative Gravimetric Equivalent µg m⁻³

+ PM₁₀ as measured by a TEOM using a volatile correction model for Gravimetric Equivalent. Particulate matter concentrations are reported at ambient temperature and pressure.

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	2	2
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

Figure C.9 Ratified Data from Ricardo Energy and Environment for Shawhead

Air Pollution Report

Produced by Ricardo Energy and Environment on behalf of the Scottish Government

N LANARKSHIRE SHAWHEAD COATBRIDGE 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy and Environment

POLLUTANT	PM ₁₀ ⁺	NO ₂	NO _x
Maximum hourly mean	155 µg m ⁻³	153 µg m ⁻³	656 µg m ⁻³
Maximum daily mean	54 µg m ⁻³	88 µg m ⁻³	277 µg m ⁻³
98.08th percentile of daily means	36 µg m ⁻³	-	-
Average	16 µg m ⁻³	36 µg m ⁻³	83 µg m ⁻³
Data capture	67.1 %	93.0 %	93.0 %

+ PM₁₀ instruments:

BAM using a gravimetric factor of 0.83333 for Indicative Gravimetric Equivalent from 1 January 2015

All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.

NO_x mass units are NO_x as NO₂ µg m⁻³

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	1	1
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	0	0

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

QA/QC of Diffusion Tube Monitoring

NO₂ diffusion tubers are supplied and analysed by Glasgow Scientific Services using a preparation mixture of 20% triethanolamine (TEA) in water. Glasgow Scientific Services is a UKAS accredited laboratory with documented Quality Assurance/Quality Control (QA/QC) procedures for diffusion tube analysis. The laboratory prepares the diffusion tubes using the 20% triethanolamine (TEA) in water method.

Glasgow Scientific Services have participated in recent AIR NO₂ PT rounds and the percentage (%) of results submitted which were subsequently determined to be

satisfactory during the previous five round in 2014 and 2015 based on a z-score of $<\pm 2$ were as follows:-

- October to November 2014 : 100%
- January to February 2015 : 100%
- April to May 2015 : 100%
- July to August 2015 : 100%
- October to November 2015 : 100%

Over a rolling five round WASP window, it is expected that 95% of laboratory results should be $\leq \pm 2$. If this percentage is substantially lower than 95% for a particular laboratory, within this five round window, then one can conclude that the laboratory in question may have significant systematic sources of bias in their assay. In this case the average percentage over the last five rounds up to the end of 2015 is 100%.

Supplementary Screening Assessments for Biomass Applications (NLC to add any additional info on planning applications here).

A small number of biomass plants have been installed in premises in North Lanarkshire in 2015. All of these are below the threshold at which SEPA would be involved. All of them were duly considered for their appropriate stack height and impact on any local receptors during the development control process and for their impact on local air quality and none of them are situated in AQMAs.

Details of the plants are as follows:-

- Clyde Valley High School, Overtown
- Greenfaulds High School, Cumbernauld
- Cumbernauld Academy, Cumbernauld (not approved at time of writing)
- 10 Caisteal Road, Castlecary, Cumbernauld (factory premises)

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

Local Air Quality Management Technical Guidance TG16

North Lanarkshire Council Air Quality Action Plan 2013-2016