

Annual Progress Report (APR)



2018 Air Quality Annual Progress Report (APR) for
North Lanarkshire Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

2018

Local Authority Officer	Fiona Maguire
Department	Regulatory Services and Waste Solutions
Address	Municipal Buildings, Kildonan St, Coatbridge, ML5 3LF
Telephone	01236 638622
E-mail	Maguiref@northlan.gcsx.gov.uk
Report Reference number	APR2018FINAL
Date	November 2018

Executive Summary: Air Quality in Our Area

Air Quality in North Lanarkshire Council

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 North Lanarkshire, 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 and PM_{2.5}), 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 2017 has indicated that annual mean concentrations of Nitrogen Dioxide (NO₂) recorded at automatic monitoring sites were below the annual mean objective level. Exceedance of the NO₂ annual mean objective level was identified at one diffusion tube monitoring site however on investigation it was concluded that there was no potential for relevant public exposure for the long-term (annual mean) objective, and that concentrations were below that likely to cause concern with respect to the short-term objective (one hour) for NO₂.

Measured NO₂ concentrations at all other locations were below the objective levels, although monitoring at one other location indicated elevated annual mean NO₂ concentrations (within 10% of the objective level) at Lauchope Street, Chapelhall, where a substantial increase was noted compared with 2016 levels. No equivalent increase was measured at the passive diffusion tube in Main Street, Chapelhall, but

an increase was noted (albeit to a lesser extent) at the automatic analyser in Main Street. Further scrutiny of monitoring results in this area will be undertaken over the coming year to try to establish the reasons for the increase. One explanation however, could be due to local traffic congestion on the road network as a result of the altered traffic routing from the new road network associated with the M8 upgrade that was completed and opened in 2017. It is the Council's intention to undertake a study of the M8/A8 corridor to establish and quantify the impact of the motorway upgrades on the surrounding local road network.

In terms of Particulate Matter (PM₁₀), results from all the Council's automatic air monitors indicate that PM₁₀ levels recorded at all automatic sites were below the annual mean objective in 2017. This continues the continuing downward trend that has been noted over recent years, with the exception of Kirkshaws roadside monitoring unit. It is worthy of note that there was no corresponding measured increase in PM₁₀ concentrations in 2017 to the increase in NO₂ noted in the Chapelhall AQMA.

In 2017 the Council installed a new FIDAS particulate analyser at the Chapelhall monitoring site, which monitors PM_{2.5} in addition to PM₁₀. This fulfils the Council's new statutory responsibility to monitor PM_{2.5}. As the monitor was only operational for half of the year the valid data capture was only 46% and the monitored annual mean level was 5 µg/m³, which is below the objective level of 12 µg/m³ annual mean.

Monitoring undertaken at the Croy AQMA in 2017 continued the downward trend in PM₁₀ levels and if the decrease continues over the next year then the Council will move to begin the revocation of the Croy AQMA.

Actions to Improve Air Quality

The Council undertook a number of initiatives in 2017 to in terms of air quality work in North Lanarkshire. This included the purchase and installation of five new FIDAS particulate monitors which monitor PM₁₀ and PM_{2.5} simultaneously. They have been located in existing monitoring sites to replace older equipment and fulfil the Council's new requirement to monitor PM_{2.5}. In addition to this the Council have been able to rent a further three electric pool cars to be used as pool vehicles for NLC staff journeys. 2017 also saw work begin on an update of the Council's Air Quality Action Plan and a steering group was set up and stakeholder and public consultations undertaken in respect of this. This also helped to increase awareness of air quality,

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among the stakeholders and the wider public as a whole as the consultation was promoted on social media. As well as this the Council's participation in National Clean Air Day involved work with St Patrick's Primary School, Coatbridge, and highlighted travel to school and electric vehicles. This event was reported on by the local press, and a copy of the press photo is included below.

Collaborative work was undertaken with South Lanarkshire Council to prepare a leaflet on access to Strathclyde Park and information signage boards for access are being produced. In terms of cycling, we commissioned a feasibility study into a public cycle hire scheme for Motherwell.

We have continued to be an active voice in planning decisions both in strategic and development management planning. In particular we have ensured air quality has been considered in projects such as the redevelopment of the Ravenscraig site and the City Deal projects.



National Clean Air Day, June 2017, St Patrick's Primary School, Coatbridge

Local Priorities and Challenges

The priorities for 2018 in North Lanarkshire will include continuing with our extensive monitoring network and in particular scrutinising the results from the new diffusion tube sites we have commissioned, as well as PM_{2.5} levels from our new FIDAS air monitors. We will endeavour to engage with local bus companies to encourage uptake of our Eco Stars scheme and in particular we will run a bus operators workshop in conjunction with colleagues at South Lanarkshire Council. Work will also be undertaken to improve awareness of air quality issues, and this will focus initially on schools within AQMAs, as well as on cycling initiatives. The Motherwell cycle hire feasibility study will be discussed and progressed as appropriate.

The Council does not propose to make any changes to the AQMAs at Motherwell, Coatbridge and Chapelhall, however discussions have begun around the possible revocation of the AQMA at Croy given that levels at this location have met the air quality objectives for the past few years.

Finances and staffing levels do continue to be a critical challenge for North Lanarkshire Council, however we are committed to running one of the most extensive air quality monitoring networks in Scotland, and undertaking our duties under LAQM as effectively and efficiently as we possibly can.

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

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1. Local Air Quality Management

This report provides an overview of air quality in North Lanarkshire during 2017. 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 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
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

There were no changes to the existing AQMAs in North Lanarkshire in 2017, and details of the current AQMAs can be viewed in Table 2.1

In the coming year we propose to consider evidence for the possible revocation of the Croy AQMA, although the decision to revoke will depend on the levels of PM_{2.5} in this AQMA.

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	NO ₂ annual mean PM ₁₀ 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	PM ₁₀ 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 2017 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 air quality Action Plan relating to each AQMA. Key completed measures are:

- A comprehensive review of our NO₂ monitoring sites has been undertaken and a number of background sites decommissioned and new, more relevant monitoring sites set up to take account of new development and receptor location;
- We have undertaken the purchase and installation of five new FIDAS particulate monitors to monitor PM₁₀ and PM_{2.5}, replacing some of our older monitoring equipment at existing sites;
- A further three electric pool cars have been rented and are now used as pool cars. This was paid for using Scottish Government grant funding;

Work began on preparing the update to the Council's Air Quality Action Plan in 2017. Specifically this involved engaging with other Council departments and other relevant stakeholders to form a steering group and stakeholder meetings were held to gather information on air quality related initiatives and to begin the process of developing action plan measures for the updated plan.

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

- The Council's updated Air Quality Action Plan will be presented to committee for ratification and thereafter published;
- Further Assessment work will be undertaken to establish baseline monitoring and traffic information for the Motherwell Town Centre area in order to determine gaps in our information base and to inform future modelling scenarios involving the redevelopment of the Ravenscraig site and its impact on the Motherwell AQMA;

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- Further Assessment work will be undertaken to establish the impact of the recently completed M8 upgrade on the surrounding local road network and in particular the Chapelhall and Coatbridge AQMAs;
- The project we have been working on with South Lanarkshire Council to produce an access leaflet for routes to Strathclyde Park will be completed and launched;
- In conjunction with South Lanarkshire Council will we run an Information Session for buses to try to encourage bus operators to join our Eco Stars Scheme.

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	<p>NLC Vehicle Fleet and Work Journeys</p> <ul style="list-style-type: none"> The Council will strive to reduce car journey for work purposes eg. By teleconferencing. For instancing where work travel is necessary the Council's pool car fleet will be utilised with electric/hybrid vehicles provided where possible Further consideration will be given to reducing the number of private vehicles used for Council business, introducing bus/sustainable transport where possible 	Promoting Travel Alternatives	Workplace travel planning	NLC All Depts	2018/19	2019-21	NA	Anticipated reduction in car travel and thus AQ improvement in AQMAs	Ongoing	Ongoing initiative	
2	<p>Vehicle Fleet Efficiency</p> <ul style="list-style-type: none"> Tracking devices will continue to be fitted to NLC fleet vehicles in order to provide info on managing idling/speeding and unnecessary journeys Driver Certificate of Professional Competence training will be provided for all Council drivers, including modules on safe and efficient driving The Council will introduce scheduling of council vehicles eg coordinating school bus/minibus/community transport vehicles 	Vehicle Fleet Efficiency/Traffic management	Driver training and ECO driving aids	NLC Fleet and Transport	2018	2018-21	NA	Anticipated reductions in NLC vehicle fleet contributions to overall AQ	Ongoing	Ongoing initiative	

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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
3	Subject to Scot Govt funding the Council will continue to operate the NLC Eco Stars fleet recognition scheme and use this to engage with certain vehicle sectors on route planning as appropriate to avoid AQMAs	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	NLC Protective Services and External consultant who delivers Eco Stars	2018	2018-21	NA	Targeted reduction of certain vehicles sectors in AQMAs leading to reduced emissions in AQMAs	Ongoing	Ongoing initiative	
4	The Council will continue to increase the provision of electric vehicle (EV) charging points, where possible ensuring that they are accessible to both NLC staff and the general public. The Council will engage with other public sector agencies (eg NHS Lanarkshire) to encourage similar provision to ensure adequate coverage of EV charging points across NLC area.	Promoting low emission transport	Promotion of EV recharging	NLC/other public bodies in area	2018/19	2018-21	NA		Ongoing	Ongoing initiative	
5	The Council will abide by their statutory duty of sustainable procurement and include vehicle standards in the sustainability section of the sourcing methodology documentation, which will consequently feed through into the specification/award criteria where appropriate	Promoting low emission transport	Public vehicle procurement-prioritising uptake of low emission transport	NLC procurement	2018/19	2018-21	NA		Ongoing	Ongoing initiative	

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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
6	<p>Increasing levels of sustainable travel</p> <ul style="list-style-type: none"> The council will work with agencies such as SPT and Sustrans (among others) to develop and implement measures which will encourage Modal Shift to public transport and active travel A programme of awareness-raising and promotion initiatives will be progressed around walking and cycling for leisure and commuting in North Lanarkshire. This will incorporate information on routes to key destinations in the NLC area 	Promoting travel alternatives	Intensive travel campaign and infrastructure	NLC – protective services, roads, city deal. Also external agencies	2018/19	2018-21	NA	Unknown	NA	Ongoing initiative	
7	The Council will engage with SPT and other relevant local authorities to develop common engine standards for all tendered school bus contracts	Promoting sustainable travel	Public vehicle procurement – promoting uptake of low emission vehicles	NLC SPT Neighbouring local authorities	2018	2018-21	NA	Anticipated reduction in emissions as result of newer bus fleet operating in AQMAs	NA	2012	
8	The Council will continue to progress their Workplace Travel Plan especially in view of other relevant NLC policies, such as property rationalisation, home working policy etc.	Promoting sustainable travel	Workplace travel planning	NLC All services	2018-21	2018	21	NA	Unknown	Workplace Travel plan prepared a few years ago, requires updating and taking forward	
9	The Council will continue to run and publicise Vehicle Emission Testing and Vehicle Idling Enforcement campaigns in areas of known and suspected persistent idling	Traffic management	Anti-idling enforcement/testing vehicle emissions	NLC Protective Services	2018/19	2018-21	NA	Unknown	NA	2021	

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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
10	The Council will introduce car parking on-street enforcement in town centres in North Lanarkshire in order to reduce inappropriate parking in town centres and other areas	Traffic management	Parking enforcement	NLC SPT	2018	2019-21	NA	NA	NA	Ongoing	
11	The Council will investigate options for improving bus provision in North Lanarkshire <ul style="list-style-type: none"> • Encourage partnership with SPT and bus operators to ensure major new/existing developments are fully connected from the outset • Investigate/implement better bus infrastructure, particularly bus priority measures to encourage greater uptake of bus travel and reduce emissions from buses, helping congestion • Work with bus operators (eg via Eco Stars0 to improve emission standards for buses operating in North Lanarkshire and particularly within AQMAs 	Transport planning and infrastructure Traffic management Vehicle fleet efficiency	Bus route improvement Bus priority Promoting low emission transport	NLC SPT	2018/18	2018-21	NA	Anticipated reduction in emissions due to lower emissions from buses	NA	Ongoing	
12	Fully support and input to where possible the planned Strategic Travel Hub for Motherwell, ensuring project objectives include air quality indicators. Part of this will include taking forward the findings of the Motherwell Cycle Hire Feasibility study recently undertaken for the town.	Transport planning and infrastructure	Public transport improvement-interchanges, stations and services. Also publiccycle hire schemes	NLC City Deal Team	2018-21	2018021	NA	Anticipated reduction in emissions through greater modal shift and sustainable travel in Motherwell AQMA	NA	Unknown	
13	The Council will investigate all potential options for the improvement of traffic flow, and therefore air quality, through the Chapelhall AQMA	Transport planning and infrastructure	Traffic management	NLC Roads	??	??	NA	Anticipated reduction in emissions in Chapelhall AQMA as a result of works	Ongoing	Ongoing	

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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
14	The Council will ensure that air quality issues are duly considered for proposed major infrastructure projects which have the potential to impact on the Council's AQMAs	Policy guidance and development control	Air quality planning and policy guidance	NLC planning	2018	2018-21	NA	Unknown	Ongoing	Ongoing	
15	The Council will ensure that all policies in relation to the Public Sector Climate Change responsibilities will take due cognisance of air quality implications as appropriate, particularly where there is potential for adverse air quality impacts	Policy guidance and development control	Other policy	NLC planning	2018	2018-21	NA	Unknown	Ongoing	Ongoing	
16	The Council will continue to ensure that air quality is appropriately considered in all relevant planning applications and ensure that planning decisions and policy at both strategic and local level will take due cognisance of the Cleaner Air For Scotland (CAFS) Strategy and the Council's Air Quality Action Plan	Policy guidance and development control	Air quality planning and policy guidance	NLC planning	2018	2018-21	NA	Unknown	Ongoing	Ongoing	

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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	<p>The Council will endeavour to ensure the highest quality of air monitoring data is produced in order to provide robust evidence for air quality decision-making. Specifically:-</p> <ul style="list-style-type: none"> • A review, including a GIS mapping exercise will be undertaken of all NLC operated air quality monitoring sites (automatic and non-automatic) to ensure monitoring is being carried out at the most appropriate locations in terms of receptor exposure and sources of air pollution. • The automatic air monitoring unit at Motherwell Civic Centre will be relocated to a more representative location which will enable a comparison of air quality before and after the planned road infrastructure changes and other major development in the area • In line with new statutory requirements the Council will set up a monitoring network for PM2.5 • An updated dispersion modelling exercise will be undertaken of the A73, Monklands and Motherwell areas in order to obtain an accurate picture of air quality levels in North Lanarkshire 	Public information	Awareness-raising	NLC protective Services	Ongoing	Ongoing	NA	NA	Ongoing	Ongoing	
18	The Council will ensure that air quality is included within the Council's input to the NHS Lanarkshire Joint Health Protection Plan and carry out work with local health boards to improve awareness of air pollution as a public health issue	Public information	Other	NLC NHS Lanarkshire	2018-21	2018-21	NA	NA	NA	NA	

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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
19	The council commits to working with neighbouring authorities where appropriate on air quality projects to ensure consistency of approach as well as raising awareness of air quality issues among a wider audience	Public information	Joint/partnership working	NLC Neighbouring authorities	2018	2018-21	NA	NA	Already working on joint mapping project with SLC. Further projects planned	Ongoing	
20	The Council pledges to carry out awareness raising of air quality issues with communities and schools. Part of this will involve taking part in National Clean Air Day as well as other relevant air quality initiatives and events.	Public information	Awareness raising	NLC Protective Services NLC Roads	2018	2018-21	NA	NA	Ongoing	Ongoing	
21	<p>Planning policy</p> <ul style="list-style-type: none"> • The Council pledges to develop planning policy to reflect the increasing demand/requirement for Electric Vehicle charging points in new public and private development • Planning guidance for developers will be updated to reflect current best practice including guidance on domestic wood burning, commercial heating and biomass 	Policy guidance and development control	Low emissions strategy/air quality planning and policy guidance	NLC Planning NLC Protective Services	2018	2018-21	NA	NA	Planning guidance already prepared however update will be undertaken	2020	
22	The Council will undertake a feasibility study into strategic planting of "green wall" structures in relevant areas of North Lanarkshire	??	??	NLC	2018-21	2018-21	NA	NA	Unknown	2021	

2.3 Cleaner Air for Scotland

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution further to protect human health and fulfil Scotland’s legal responsibilities as soon as possible. A series of actions across a range of policy areas are outlined, a summary of which is available at <http://www.gov.scot/Publications/2015/11/5671/17>. Progress by North Lanarkshire Council against relevant actions within this strategy is demonstrated below.

2.3.1 Transport – Avoiding travel – T1

All local authorities should ensure that they have a corporate travel plan (perhaps within a carbon management plan) which is consistent with any local air quality action plan. At the time of writing North Lanarkshire Council has a draft Workplace Travel Plan which was produced a few years ago. One of the action plan measures within the updated Air Quality Action Plan is to update this draft WTP and further progress it over the coming two years.

2.3.2 Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2

Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered. North Lanarkshire Council has a draft Carbon Management Plan which looks at emissions from the Council’s assets via fuel/energy use and business mileage.

2.3.3 Environmental Fleet Recognition Scheme

In line with CAFS, North Lanarkshire Council continues to run (via the consultancy TRL Ltd) an environmental fleet recognition scheme, known as Eco Stars. 2017 saw us build on our membership to 167 members, which includes 6862 vehicles.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

North Lanarkshire Council undertook automatic (continuous) monitoring at 10 sites during 2017. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at www.scottishairquality.co.uk

Maps showing the location of the monitoring sites are provided in a supplementary document to the main report. 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 80 sites during 2017. Table A.2 in Appendix A shows the details of the sites. It should be noted that a number of sites were decommissioned and new sites set up at more representative locations in 2017. Details of the changes to the sites are as follows:-

- DT102 – Emily Drive, Motherwell moved to Windmillhill St (1), Motherwell
- DT103 – Kethers Lane, Motherwell moved to Windmillhill St (2), Motherwell
- DT106 Camp Street, Motherwell moved to Civic Centre (1), Motherwell
- DT107 Braehead Farm, Bargeddie moved to Civic Centre (2), Motherwell
- DT108 – MSA Factory, Shawhead moved to Civic Centre (3), Motherwell
- DT116 – Delburn Street, Motherwell moved to Airbles Rd (near Electric Bar), Motherwell
- DT118 – Shawhead roundabout, Coatbridge moved to Merry St/Dalziel St jct, Motherwell
- DT120 – Watsonville, Motherwell moved to Kirkshaws Rd, Coatbridge
- DT127 – Main Street, Bellshill (near Tesco delivery road) moved to Wishaw Cross/Stewarton Street, Wishaw

- DT137 – Auchenkilns, Cumbernauld moved to Main St, Cumbernauld Village
- DT141- Main St, Harthill (1), nr shops moved to Station Road, Shotts
- DT142 - Salsburgh house no 337 R15) moved to Stane Gdns, Shotts
- DT54 – Lochend Rd, Gartcosh jct A752 moved to Columba Ct/Old Edinburgh Rd, Viewpark
- DT55 – Whitelaw Rd end, Glenboig moved to Old Edinburgh Rd, Viewpark
- DT56 – Garnqueen Ave, Glenboig moved to Dykehead Rd, Bargeddie

Maps showing the location 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 in excess of the annual mean objective levels were only measured at one location in 2017, a passive diffusion tube site in Central Way, Cumbernauld. The site is not located at a location of relevant public exposure for the annual mean objective and has been located to determine indicative hourly mean NO₂ concentrations relevant to the bus station at this location.

The only other location at which monitoring indicated elevated annual mean NO₂ concentrations (within 10% of the objective level) was at Lauchope Street, within the Chapelhall AQMA. Measured concentrations at Lauchope Street show a substantial increase from measured levels in 2016. No equivalent increase was measured at the Main Street passive diffusion tube sites in Chapelhall. An increase was observed at the automatic analyser, however the increase was less than at the Lauchope Street passive diffusion tube sites and the annual mean concentration was below the objective level.

Measured concentrations at all other automatic monitoring stations were substantially below objective levels.

For diffusion tubes, the full 2017 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 200µg/m³, not to be exceeded more than 18 times per year. Six exceedances of the hourly mean objective level were measured at Chapelhall in 2017. No exceedances were measured at any of the other automatic monitoring sites. There were no measured annual mean concentrations in excess of 60 µg/m³ in 2017, indicating that further exceedance of the 1-hour mean objective is unlikely at these 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 18µg/m³. There were no measured exceedances of the annual mean objective in 2017. With the exception of Kirkshaws roadside analyser measured concentrations were lower than in 2016, continuing the downward trend from 2013. It is noted that there is no corresponding increase in PM₁₀ concentrations to the increase in NO₂ noted in the Chapelhall AQMA.

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 50µg/m³, not to be exceeded more than 7 times per year. Only one measured exceedance of the 24-hour objectives was measured in 2017, at Croy.

3.2.3 Particulate Matter (PM_{2.5})

Table A.7 in Appendix A compares the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past 5 years with the air quality objective of 10µg/m³. Monitoring was undertaken at one site, Chapelhall, and measured concentrations were substantially below (50%) the annual mean objective level. It is noted however that the data capture rate was low in 2017.

3.2.4 Sulphur Dioxide (SO₂)

Table A.8 in Appendix A compares the ratified continuous monitored SO₂ concentrations for year 2017 with the air quality objectives for SO₂. Monitoring was undertaken at one site in 2017, Croy. Measured concentrations were substantially below SO₂ objectives, with no exceedances of the standards noted. With the agreement of Scottish Government the monitoring of SO₂ in North Lanarkshire has been decommissioned.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Table A.9 in Appendix A compares the ratified continuous monitored CO concentrations for the year 2017 with the air quality objectives for CO. Monitoring was undertaken at one site in 2017, Croy. Measured concentrations were substantially below CO objectives, with no exceedances of the standards noted. No monitoring was undertaken for Lead or 1,3-Butadiene concentrations within the Council area in 2017. No significant sources of these pollutants have been identified in the 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 2017, and the following information is reported.

- Narrow congested streets with residential properties close to the kerb – there are no new roads that meet this criteria;
- Busy streets where people may spend one hour or more close to traffic – there are 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 – please see further explanation below of the works to the M8/M74 motorways which were completed in 2017
- Roads with significantly changed traffic flows – please see further explanation below of the works to the M8/M74 motorways which were completed in 2017
- Bus or coach stations – there are no new bus or coach stations to report

In 2017 there were a number of major road infrastructure changes that took place in relation to the M8 and M74 motorways. This work had the potential to impact on the surrounding road network. Details of the trunk road upgrades are as follows:-

- M8 Junction 8, Baillieston – a signalised roundabout shall be provided at the junction of the A8 Glasgow and Edinburgh Rd and Rhindhouse Road. A roundabout shall be provided at the junction of the A89 Coatbridge Road and the A8 APR. A signalised junction shall be provided at the intersection of the A752 Gartcosh Road and Langmuir Road with the A89 Coatbridge Road.
- M8 Junction 7A Shawhead Junction – a signalised junction shall be provided at the junction of the A725 with the A8 APR Shawhead Westbound Slip road and North Road. A signalised junction shall be provided at the junction of the A725 and A725 North Road with the A8 APR Shawhead Eastbound Slip Road. A signalised junction shall be provided at the junction of the A725 North Road and Whifflet Street with Hagmill Road and Kirkshaws Road.

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- M8 Junction 7, Eurocentral Junction M8, M73, M74 Motorway improvements DBFO agreement schedule 2 – new works requirements part 2 : specific requirements. Financial Close page 12 of 401 – a roundabout shall be provided at the junction of the Eastbound A8 APR with the Eurocentral Eastbound M8 Diverge Slip road, the Eurocentral overbridge and the Orchard Farm Pool East SUDS Pond Access Track. A signalised roundabout shall be provided at the junction of the Westbound A8 APR with the Eurocentral Westbound M8 Merge Slip road, the Eurocentral Overbridge, Townhead Avenue and Shawfoot Road.
- M8 Junction 6A, Chapelhall Junction – a partially signalised roundabout shall be provided at the junction of the Eastbound A8 APR with the Chapelhall Eastbound M8 Diverge Slip Road, the Chapelhall Junction Link Road and the Chapelhall Junction to Bo'ness Road North Link Road. A partially signalised roundabout shall be provided at the junction of the Westbound A8 APR with the Chapelhall Westbound M8 Merge Slip Road, the Chapelhall Junction Link Road and the Chapelhall Junction to Bo'ness Road South link Road. A roundabout shall be provided at the junction of Bo'ness Road with the Chapelhall Junction to Bo'ness Road north Link Road, Woodhall Mill Road and the BioCity Scotland Access road. A roundabout shall be provided at the junction of Bo'ness Road with the Chapelhall Junction to Bo'ness Road South Link Road, McNeil Drive and Rowantree Avenue.
- M8 Junction 6 Newhouse – A roundabout shall be provided at the junction of the Newhouse Eastbound A8 APR diverge slip road with the A73 Bellside Road, the Newhouse Eastbound A8 APR merge slip road, the Newhouse Westbound A8 APR diverge slip road and the Newhouse Westbound A8 APR merge slip road.
- M74 Junction 5 Raith Interchange – a signalised roundabout will be provided at the junctions of – Bellshill Road, M74 Northbound Merge Slip, M74 Southbound Diverge Slip, A725 Northbound Merge Slip, A725 Southbound Diverge Slip, Strathclyde Country Park Access, M74 Southbound Merge. A

signalised junction will be provided at the junction of the A725 Northbound Diverge Slip, Bellshill Road and access to the Industrial Estate. A signalised junction will be provided at the junction of Bellshill Road and Bothwell/Hamilton Road.

Air quality was duly considered during the planning process for these roads projects. Despite considering air quality, however, the works will inevitably have resulted in increases in traffic volumes at peak journey times on a number of surrounding roads as a result of unavoidable traffic management, diversion arrangements etc. to accommodate the works. 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

North Lanarkshire Council has considered the relevant criteria set out 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 are regularly stationary for 15 minutes – no relevant sources in North Lanarkshire
- Locations with large numbers 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 was consulted for information in relation to industrial sources in North Lanarkshire. The following information was identified.

- Industrial installations: new or proposed installations for which an air quality assessment has been carried out in North Lanarkshire – SEPA confirmed there have been no new installations for which an air quality assessment has been carried out. There has been a proposed installation, however, which comprises a proposed energy plant at Carnbroe, Coatbridge. SEPA has advised that air quality assessments will have been carried out for planning and will be required to be submitted along with the PPC application.

- Industrial installations: existing installations where emissions have increased substantially or new relevant exposure has been introduced – SEPA confirmed that there are no existing installations where emissions have increased substantially or new relevant exposure has been introduced.
- There are no significantly changed installations with no previous AQ assessment.
- The following are new installations with no previous AQ assessment:
 - WML/L/1155771 – Unit 303 Brownsburn ind Estate, Airdrie
 - WML/L/1157391 – Olleco, Coatbridge
 - WML/L/1164170 – Envo Energy Solutions Ltd, Recycling Facility.
- Major fuel storage depots storing petrol – there are no major fuel storage depots storing petrol.
- Petrol stations – SEPA confirmed that no new petrol stations, nor any with substantially increased emissions in 2017. Please note that currently there are 33 permitted petrol stations in the area, 20 Stage I PVR and 13 Stage I and II.
- Poultry farms – SEPA confirmed that there are no poultry farms.

4.4 Commercial and Domestic Sources

- Biomass combustion plant (individual installations) – SEPA confirmed that they are not aware of any new biomass combustion plants (both individual installations and situations of several biomass combustion sources).
- Areas where domestic solid fuel burning may be relevant – there are no areas in North Lanarkshire where domestic solid fuel burning is relevant.
- Combined Heat and Power (CHP) plant – SEPA confirmed there are no new CHP plants to be considered in North Lanarkshire.

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 with fugitive or uncontrolled sources of PM

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- Quarries – there are no new quarries with fugitive or uncontrolled sources of PM
- Unmade haulage roads on industrial sites – SEPA is not aware of any unmade haulage roads on industrial sites with fugitive or uncontrolled sources of PM
- Waste transfer stations etc – SEPA advised on the following waste transfer stations – WML/L/1155771, WML/L/1157391
- Other potential sources of fugitive particulate matter emissions – PPC/B/1150981 Bedrock Plant Hire Ltd

5. Planning Applications

North Lanarkshire Council Planning and Development Management Service were consulted for details of any relevant major planning applications under consideration and planning applications which were granted planning consent in 2017 that have the potential to impact on local air quality. All relevant information is presented in Table 5.1 below.

Table 5.1 – Relevant Planning Applications from 2017

Application Number	Brief Description of Development	AQ Impact	Comment/Further info
17/00389/PPP	Residential development including associated infrastructure – Shotts area	AQIA requested however no adverse impact on local AQ predicted. Location not in/near AQMA	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/00471/MSC	Residential development, Cleekhimin, Ravenscraig	No AQIA required. Not in/near AQMA	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/00643/PPP	Erection of hotel and conference centre, with associated infrastructure at Stirling Rd, Greengairs	No AQIA required. Location not in/near AQMA	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01090/FUL	Residential development at Meadowhead Rd, Craigneuk	No AQIA required. Location not in/near AQMA	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01233/FUL	Residential development between Oakridge Rd and Drumpellier Golf Course, Glasgow Rd, Coatbridge	AQIA submitted in support of application. Not in/near AQMA. AQIA satisfactory	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
17/01664/FUL	Residential development south of Orchid Pl/Acer Way, Viewpark.	Location not in/near AQMA and no AQ considerations	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
14/01849/PPP and	Residential development at land	Location not in/near AQMA.	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/

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16/01850/MSC	south of Johnston Loch, Gartcosh (up to 300 houses)	AQIA submitted - satisfactory	applications/
14/01594/PPP	Residential development at Glenboig, M73	Location not in/near AQMA. AQIA submitted - satisfactory	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/02305/FUL	New distribution centre at Eurocentral	Location not in/near AQMA. AQIA submitted - satisfactory	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/00237/FUL	Residential development – 88 houses at Chapelton Rd, Cumbernauld	Location not in/near AQMA. AQIA not required	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/02253/FUL	Installation of Plant (Combined Heat and Power Unit) and associated apparatus, Wardpark, Cumbernauld	Location not in/near AQMA. AQIA not required.	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/01372/FUL	Installation of biogas energy/anaerobic digestion plant, Shotts	Location not in/near AQMA.	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/00508/MSC	Residential development of 210 dwellings, Calder St, Whifflet	Location is near AQMA. AQIA submitted and satisfactory	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/02234/MSC	Residential development, 155 houses, Gartcosh	Location not in/near AQMA	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/02009/FUL	Re-profiling of former Springbank Quarry to create coarse fishery	Not in/near AQMA. No AQ considerations	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/
16/01367/FUL	Residential development, site E of Glasgow Rd, Coatbridge, 160 houses	Not in/near AQMA but adjacent to waste facility. AQIA submitted and satisfactory	Further info available at :- https://eplanning.northlanarkshire.gov.uk/online-applications/

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The conclusions drawn from the monitoring data identified in 2017 can be summarised as follows:

- Annual mean concentrations of Nitrogen Dioxide (NO₂) recorded at all automatic monitoring sites in 2017 were below the annual mean objective level of 40µg/m³. One breach of the annual mean objective for NO₂ was observed at one of the Passive Diffusion Tubes (Central Way, Cumbernauld), however this site does not have relevant public exposure for the annual mean objective. It was sited to determine indicative hourly mean NO₂ concentrations relevant to the bus station at this location. Concentrations recorded at this passive diffusion tube were not significant to indicate a breach of the hourly mean objective for NO₂ either. As in previous years this location will remain under close observation, and relevant action taken in the event of an increase in NO₂ levels close to the objective level.
- Measured concentrations of NO₂ at two passive diffusion tubes in Lauchope Street, Chapelhall, and the automatic analyser in Chapelhall have indicated an increase on previous years, to within 10% of the objective level. It should be stressed that the measured concentrations do remain within the statutory objective level, however the Council intends to keep a close eye on this location and in particular work towards a roads engineering solution to congestion in this area. Anecdotally it is suggested that the alterations to the existing road network to accommodate the upgrade to the junctions of the M8 in this area could be a contributory factor to increased congestion and possibly increased NO₂ levels in the area. It should be noted, however, that there is no corresponding increase in PM₁₀ concentrations to the increase in NO₂ noted in the Chapelhall AQMA.
- Having re-organised some of the passive diffusion tube network during 2017 to take account of new developments, changes in sensitive receptor locations etc. it is the Council's intention in 2018 to undertake close scrutiny of the new monitoring sites and take any further action as necessary. Close scrutiny will

be undertaken particularly in areas that will potentially have experienced changes to traffic flow, composition etc. as a result of the upgrade to the M8, M73 and M74 motorways.

- 2017 saw the start of the process of purchase of 5 new FIDAS particulate monitors which will be installed at some of our existing monitoring sites. These new FIDAS will measure PM₁₀ and PM_{2.5}

6.2 Conclusions relating to New Local Developments

Having taken due cognisance of the outcome of consultation with the planning department and in reviewing air quality impact assessments that were submitted in support of planning applications in 2017 it was concluded that there are no significant issues in relation to new local developments. This was due to the proposed developments not being in areas where air quality levels are close to the objective and/or the developments themselves did not present air quality issues to surrounding sensitive receptors. The Pollution Control team will continue to work with our colleagues in planning to identify any future developments that may present air quality issues, and take any action deemed appropriate.

6.3 Proposed Actions

Over the coming reporting year (2018) North Lanarkshire Council intends to focus on the following areas of work:

- Air quality monitoring will continue at all automatic monitoring sites and the new particulate analysers will be purchased via a procurement process. These will monitor both PM₁₀ and PM_{2.5} and will be installed in 5 of our existing automatic monitoring sites;
- The review of the Council's Nitrogen Dioxide (NO₂) diffusion tube monitoring network will be scrutinised to identify any emerging issues, particularly in areas where we previously had no monitoring equipment;
- The Council's Air Quality Action Plan has been updated and re-written through a process of collaboration with other Council departments and other relevant stakeholders. Robust consultation also formed part of the action planning process. It will be launched over the coming months.
- The Council does not propose to make any changes to the current four Air Quality Management Areas (AQMA) in 2018 however the Croy AQMA does

remain consistently below the objective and as such may be revoked in the coming years. The remaining four AQMAs do not require any changes in boundaries, pollutants etc.

- The remaining automatic monitoring sites that are not currently within the official validation process carried out by Ricardo on behalf of the Scottish Government will be duly added in 2018 now that funding has been secured for this.
- A comprehensive review of traffic data and corresponding effects to local air quality will be undertaken for Motherwell and the M8 corridor. The study will consider post-development traffic flows on the completed M8, but more critically local access roads and links to the distributor road network. Consideration will be given to available data from Transport Scotland as well as data from a number of proposed development projects in the vicinity of the new road network. The assessment will consider the changes to local traffic and will inform Further Assessment of local air quality effects by dispersion modelling. The Further Assessment will, in particular, give cognisance to changes to local air quality at around the Chapelhall and Coatbridge AQMAs.
- A publicity campaign will be carried out to improve public awareness of air quality. This will involve collaborative work with South Lanarkshire Council to launch our joint leaflet on access to Strathclyde Park and information signage boards for access. Also included will be work with schools in AQMAs to ensure maximum uptake of school travel planning, air quality educational resources etc. and participation in National Clean Air Day;
- We will continue to be an active voice in planning decisions both in strategic and development management planning. In particular we will ensure air quality is given due consideration in projects such as the redevelopment of the Ravenscraig site and the City Deal projects;
- The conclusions from the public cycle hire feasibility scheme will be duly considered and if viable, taken forward to the next stage;
- Further expansion of the Council's Eco Stars scheme will be continued in 2018. Specifically a joint Eco Stars workshop will be held with South Lanarkshire Council. This will be aimed at local bus operators and will focus on funding streams for fleet improvement and retrofitting, as well as encouraging uptake of Eco Stars membership among local operators.

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 ;PM _{2.5}	Y	Chemiluminescent TEOM until 25/5/17 then FIDAS	20	10	2
CM2	Croy	Special – by quarry	272775	675738	PM ₁₀ ;NO ₂ ; SO ₂ ;CO	N	Chemiluminescent; TEOM	30	10	2
CM3	Whifflet (Coatbridge)	Urban background	273674	663927	PM ₁₀	Y	TEOM	20	30	2
CM4	Menteith Rd (Motherwell)	Roadside	275458	656792	PM ₁₀	Y	TEOM	20	8	2
CM5	Shawhead (Coatbridge)	Roadside	273411	662997	PM ₁₀ ;NO ₂	Y	Chemiluminescent; BAM	22	20	2
CM6	Kirkshaws (Coatbridge)	Roadside	272523	663030	PM ₁₀ ;NO ₂	Y	Chemiluminescent; BAM	20	8	2

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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)
CM7	New Edinburgh Rd	Roadside	269144	661496	PM ₁₀ ;NO ₂	N	Chemiluminescent;BAM	30	10	2
CM8	Sunnyside Rd	Roadside	273056	665234	PM ₁₀ ;NO ₂	N	Chemiluminescent;BAM	30	10	2
CM9a	Cumbernauld (before 2015)	Mobile lab	274117	674020	PM ₁₀ ;NO ₂	N	Chemiluminescent;TEOM	NA	NA	NA
CM9b	Civic Centre (Motherwell) from 2015	Mobile lab	275788	656219	PM ₁₀ ;NO ₂	Y	Chemiluminescent;TEOM	50	15	3
CM10	Kenilworth Dr (Airdrie)	Roadside	277385	665837	PM ₁₀ ;NO ₂	N	Chemiluminescent;BAM	30	10	2
CM11	Moodiesburn	Roadside	269921	670389	PM ₁₀ ;NO ₂	N	Chemiluminescent;BAM	50	5	2

(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	668204	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	2	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	Gartcosh, Lochend Rd & Cbrindge 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 lamp LHS0, Glenboig	Urban background	271751	668432	NO ₂	N	50	2	N
DT57	Main St jct Carrick View (1 st lam LHS), Glenboig	Urban background	272030	668564	NO ₂	N	10	2	N
DT58	Lamppost nr 115 Glenboig Rd	Urban background	272743	668103	NO ₂	N	2	2	N
DT59	Adj to 10-16 Coronation Pl, Mount Ellen	Urban background	269356	669173	NO ₂	N	20	2	N
DT61	Under bridge Central Way (eastbound) Cumbernauld	Roadside	275778	674440	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?
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 Drive, 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
DT104	Coursington Rd, Motherwell	Urban background	276178	657344	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?
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, Coatbridge	Roadside	273830	662676	NO ₂	N	500	50m to A8	N
DT110	New Edinburgh Rd(1), nr M74, Uddingston	Roadside	272789	675735	NO ₂	N	30	2	N
DT111	New Edinburgh Rd(2), nr M74, Uddingston	Roadside	272789	675735	NO ₂	N	15	2	N
DT112	New Edinburgh Rd(3), nr M74, Uddingston	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?
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	656986	NO ₂	N	20	2	N
DT118	Shawhead roundabout, Coatbridget	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

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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?
DT121	Flannigan Grove, Bellshill	Urban background	273180	660350	NO ₂	N	30	2	N
DT122	Main St, Mossend	Roadside	274082	660308	NO ₂	N	60	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 jct Mwell 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

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?
DT130	Main St, Wishaw (bottom)	Roadside	279118	655327	NO ₂	N	5	2	N
DT131	Brandon Place, Bellshill	Roadside	279118	655327	NO ₂	N	5	2	N
DT132	Airdrie Road, Caldercruix	Roadside	281713	667517	NO ₂	N	10	2	N
DT133	Coatbridge 1, Bank Street	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 Street, Airdrie	Kerbside	277276	665615	NO ₂	N	10	2	N
DT136	Airdrie 3, Springwells Crescent	Roadside	274162	674130	NO ₂	N	30	2	N
DT137	Auchenkilns, Cumbernauld	Roadside	274164	674130	NO ₂	N	30	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?
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
DT140	Dundyvan Rd, Coatbridge	Kerbside	273293	664120	NO ₂	N	5	1	N
DT141	Main St(1), Harthill (nr shops)	Kerbside	290652	664493	NO ₂	N	10	2	N
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

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?
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, lamppost R33	Kerbside	278119	663075	NO ₂	Y	15	2	N
DT150	Eastfield Rd, Cumbernauld (lamp post 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

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?
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
DT159	Glenview Crescent, Moodiesburn	Roadside	270391	671505	NO ₂	N	10	2	N
DT160	The Cuillins	Roadside	270067	671604	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
	Deedes St, Airdrie	Roadside	274819	665005	NO ₂	N	7	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?
DT163	12 Inchwood Rd, Westfield, Cumbernauld	Roadside	273098	673321	NO ₂	N	10	1	N
DT164	12 Leckethill Ct, Westfield, Cumbernauld	Roadside	272634	672994	NO ₂	N	10	1	N
NewDT102	Windmillhill St (1), Motherwell	Roadside	275738	656400	NO ₂	Y	50	1	N
NewDT103	Windmillhill St (2), Motherwell	Roadside	275733	656439	NO ₂	Y	20	1	N
NewDT106	Civic Centre (1), Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT107	Civic Centre (2), Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT108	Civic Centre (3), Motherwell	Roadside	275911	656237	NO ₂	Y	100	30	Y
NewDT116	Airbles Rd, (nr Electric Bar), Motherwell	Roadside	274814	656147	NO ₂	N	15	5	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?
NewDT118	Merry St (jnc with Dalziel St), Motherwell	Roadside	275444	657312	NO ₂	N	15	5	N
NewDT120	Kirkshaws Rd, Coatbridge	Roadside	272438	663018	NO ₂	Y	15	2	N
NewDT128	Wishaw Cross (Stewarton St), Wishaw	Roadside	279587	655125	NO ₂	N	30	2	N
NewDT137	Main St, Cumbernauld Village	Roadside	276710	676098	NO ₂	N	10	2	N
NewDT141	Station Rd, Shotts	Roadside	286840	656978	NO ₂	N	20	2	N
NewDT142	Stane Gdns, Shotts	Roadside	287954	659620	NO ₂	N	20	2	N
NewDT54	Columba Ct/Old Edinburgh Rd, Viewpark, Uddingston	Roadside	271259	661016	NO ₂	N	15	2	N
NewDT55	Old Edinburgh Rd, Viewpark, Uddingston	Roadside	270463	661441	NO ₂	N	15	2	N

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?
NewDT56	Dykehead Rd, Bargeddie	Roadside	270201	664281	NO ₂	N	10	2	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 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
CM1 - Chapelhall	Roadside	Automatic	99.3	99.3	33.8	32.7	33.5	32	33.8
CM2 - Croy	Special-by quarry	Automatic	60.6	60.6	20.6	20	19.3	20	20.4
CM5 - Shawhead	Roadside	Automatic	46	46	34.3	32.4	36	30	28.5
CM6 - Kirkshaws	Roadside	Automatic	98.8	98.8	-	20.3	25	33	22
DT10 – Castle Ct, Castlecary	Roadside	Diffusion Tube	100%	100%	27.0	31.7	28.5	23.3	34.2
DT47 – Layby in Stand	Roadside	Diffusion Tube	100%	100%	23.0	22.5	21.4	22.7	21.0
DT48 – Bus stop, Bron Way, Cumbernauld	Kerbside	Diffusion Tube	100%	100%	33.8	32.3	32.9	29.1	28.9
DT49 – Swimming pool, Kilsyth	Kerbside	Diffusion Tube	92%	92%	21.3	22.1	18.8	18.3	17.4
DT50 – 1791 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	22.7	25.2	24.7	21.9	22.4
DT51 – 131 Cumbernauld Rd, Stepps	Kerbside	Diffusion Tube	100%	100%	27.5	28.6	23.3	23.7	24.8
DT52 – traffic lights A80 eastbound, Moodiesburn	Kerbside	Diffusion Tube	100%	100%	24.5	25.6	22.0	18.0	17.4
DT53 – traffic lights A80, westbound, Moodiesburn	Kerbside	Diffusion Tube	100%	100%	19.2	22.6	22.0	20.7	20.9
DT54 – Lochend Rd/Cbridge Rd, A752Gartcosh	Urban background	Diffusion Tube	17%	17%	24.6	24.5	24.6	21.1	22.8
DT55 – Whitelaw Rd end, Glenboig	Urban background	Diffusion Tube	25%	25%	21.3	13.6	13.6	12.0	9.7

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT56 – Garnqueen Ave, 1 st Lamp LHS, Glenboig	Urban background	Diffusion Tube	17%	17%	16	14.2	14.8	12.4	14.3
DT57 – Main St/Carrick View, Glenboig	Urban background	Diffusion Tube	100%	100%	18.4	17.1	16.7	15.9	16.2
DT58 – Lamp post nr 115 Glenboig Rd	Urban background	Diffusion Tube	100%	100%	17.7	16.2	16.0	15.0	21.8
DT59 – Adj to 10-16 Coronation Pl, Mount Ellen	Urban background	Diffusion Tube	100%	100%	19.8	20.8	18.8	19.3	17.2
DT61 – Under bridge, Central Way, eastbound, Cumbernauld	Roadside	Diffusion Tube	58%	58%	56	<u>65.1</u>	<u>74.3</u>	<u>61.5</u>	51.3
DT62 – Under bridge, Central Way, westbound, Cumbernauld	Roadside	Diffusion Tube	58%	58%	41.4	41.3	44.8	38.1	38.1
DT63 – Central Way, westbound, Cumbernauld	Roadside	Diffusion Tube	25%	25%	37.3	31.7	35.4	34.8	26.5
DT100 – Civic Centre, Motherwell	Roadside	Diffusion Tube	100%	100%	34.1	39.7	38.9	32.3	
DT101 – Shields Rd, Motherwell	Roadside	Diffusion Tube	100%	100%	28.8	23.3	24.6	24.4	23.2
DT102 – Emily Drive, Motherwell	Urban background	Diffusion Tube	25%	25%	12.2	10.6	11.1	10.0	10.8
DT103 – Kethers Lane, Motherwell	Urban background	Diffusion Tube	25%	25%	17	13.9	12.8	12.8	15.8
DT104 – Coursington Rd, Motherwell	Urban background	Diffusion Tube	83%	83%	10.5	9.6	11.6	11.7	11.9
DT105 – Craigneuk Rd, Carfin	Urban background	Diffusion Tube	92%	92%	17.3	15.1	15.6	14.6	13.5

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT106 – Camp St, Motherwell	Urban background	Diffusion Tube	25%	25%	19.5	18.1	22.6	18.7	18.2
DT107 – Braehead Farm, Bargeddie	Roadside	Diffusion Tube	25%	25%	44.4	37.5	42.7	32.2	23.7
DT108 – MSA Factory, Coatbridge	Roadside	Diffusion Tube	25%	25%	40	36.5	43.5	30.5	27.7
DT110 – New Edinburgh Rd (1), nr M74, Uddingston	Roadside	Diffusion Tube	92%	92%	35.6	33.8	31.8	33.9	33.7
DT111 – New Edinburgh Rd (2), nr M74, Uddingston	Roadside	Diffusion Tube	83%	83%	39.2	36.5	38.4	29.8	31.7
DT112 – New Edinburgh Rd (3), nr M74, Uddingston	Roadside	Diffusion Tube	100%	100%	37.7	35.0	33.8	30.0	32.7
DT113 – Tinkers Lane, Motherwell	Roadside	Diffusion Tube	100%	100%	24.5	22.6	21.5	19.2	21.8
DT114 – Main St, Overtown	Kerbside	Diffusion Tube	100%	100%	21.6	17.8	17.4	17.8	19.6
DT115 – Ravenscraig Bypass	Roadside	Diffusion Tube	100%	100%	16.5	16.4	15.7	14.6	13.3
DT116 – Delburn St, Motherwell	Urban background	Diffusion Tube	25%	25%	28.1	26.1	27.9	22.8	23.1
DT117 – Hamilton Rd. Motherwell	Urban background	Diffusion Tube	100%	100%	35.9	53.8(35.2)	30.2	27.5	30.3
DT118 – Shawhead roundabout, Coatbridge	Kerbside	Diffusion Tube	25%	25%	35.3	30.2	33.8	28.2	28.2

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT119 – Kirkshaws Rd, Coatbridge	Roadside	Diffusion Tube	1005	100%	39.9	36.2	34.1	30.9	31.3
DT120 – Watsonville, Motherwell	Kerbside	Diffusion Tube	25%	25%	26.9	22.0	17.0	19.4	14.8
DT121 – Flannigan Gr, Bellshill	Urban background	Diffusion Tube	100%	100%	25	19.6	18.4	18.7	19.5
DT122 – Main St, Mossend	Roadside	Diffusion Tube	92%	92%	35.7	29.3	27.1	26.1	28.2
DT123 – Hamilton Rd, Orbiston, Bellshill	Kerbside	Diffusion Tube	100%	100%	29.6	23.1	22.5	23.3	25.2
DT124 – Scotmid, Tannochside	Kerbside	Diffusion Tube	100%	100%	38.7	25.8	25.4	25.9	25.6
DT125 – Main St, Bellshill (nr Bellshill Academy)	Kerbside	Diffusion Tube	1005	100%	20.8	17.3	16.0	17.2	19.6
DT126 – Main St, Bellshill (nr Jcn Mwell Rd)	Roadside	Diffusion Tube	92%	92%	28.7	21.5	18.2	22.3	19.8
DT127 – Main St, Bellshill (nr Tesco delivery rd)	Roadside	Diffusion Tube	25%	25%	23.7	18.5	19.8	17.5	18.2
DT128 – Matalan, Wishaw	Roadside	Diffusion Tube	100%	100%	29.3	24.7	24.7	23.5	27.1
DT129 – Newmains Police Station	Roadside	Diffusion Tube	100%	100%	34.7	32.9	26.3	27.0	26.5
DT130 – Main St, Wishaw (bottom)	Roadside	Diffusion Tube	100%	100%	17.9	15.8	14.8	15.0	14.4
DT131 – Brandon Pl, Bellshill	Roadside	Diffusion Tube	100%	100%	-	-	-	18.9	19.3

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT132 – Airdrie Rd, Caldercruix	Roadside	Diffusion Tube	92%	92%	-	-	-	-	14.3
DT133 – Coatbridge 1, Bank St	Roadside	Diffusion Tube	83%	83%	37.2	32.1	27.7	26.8	33.4
DT134 – Coatbridge 2, Whifflet Court	Kerbside	Diffusion Tube	83%	83%	25.5	25.0	20.1	23.0	23.0
DT135 – Grahamshill St, Airdrie	Kerbside	Diffusion Tube	92%	92%	37.9	38.7	29.0	33.9	33.0
DT136 – Airdrie 3, Springwells Crescent	Roadside	Diffusion Tube	83%	83%	18.5	16.8	13.6	16.8	20.1
DT137 – Auchenkilns, Cumbernauld	Roadside	Diffusion Tube	17%	17%	22.0	20.7	17.9	23.8	24.8
DT138 – Main St, Chapelhall (nr shops)	Roadside	Diffusion Tube	83%	83%	27.9	23.6	26.9	24.3	25.0
DT139 – Lauchope St/Main St jcn, Chapelhall	Roadside	Diffusion Tube	100%	100%	42.9	35.6	33.8	30.1	39.0
DT140 – Dundyvan Rd, Coatbridge	Kerbside	Diffusion Tube	100%	100%	29.4	23.9	20.4	21.7	23.6
DT141 – Main St (1), Harthill, nr shops	Kerbside	Diffusion Tube	25%	25%	20.3	14.9	11.8	16.5	14.8
DT142 – Salsburgh, house no 337, R15	Roadside	Diffusion Tube	17%	17%	26.0	20.7	20.4	22.0	14.4
DT143 – Main St (2), Harthill, nr shops	Roadside	Diffusion Tube	100%	100%	21.1	19.2	17.0	17.8	15.9
DT144 – Lab 1, Constarry Rd, Croy	Roadside	Diffusion Tube	100%	100%	19.2	15.8	14.1	16.8	17.2

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Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT145 – Lab 2, Constarry Rd, Croy	Roadside	Diffusion Tube	100%	100%	19.9	17.0	14.8	18.2	17.0
DT146 – Lab 3, Constarry Rd, Croy	Roadside	Diffusion Tube	92%	92%	18.5	18.1	17.9	17.0	16.7
DT147 – Ban St, Coatbridge (nearest house)	Roadside	Diffusion Tube	92%	92%	30.9	31.7	26.3	30.5	31.6
DT148 – Main St, Chapelhall, lamp post R32	Kerbside	Diffusion Tube	92%	92%	37.7	29.8	35.4	28.7	28.8
DT149 – Main St, Chapelhall, lamp post R33	Kerbside	Diffusion Tube	100%	100%	36.4	34.4	26.8	31.9	31.0
DT150 – Eastfield Rd, Cumbernauld, lamp post R6P783	Kerbside	Diffusion Tube	83%	83%	29.6	28.0	26.1	24.7	20.1
DT151 – Main St, Holytown	Urban background	Diffusion Tube	67%	67%	26.4	20.6	19.8	21.6	24.7
DT152 – Coatbridge Rd, Townhead, nr shops	Roadside	Diffusion Tube	92%	92%	32.2	30.0	32.4	25.0	28.9
DT153 – 72 Townhead Rd, Coatbridge	Roadside	Diffusion Tube	100%	100%	23.5	21.4	20.4	25.0	17.7
DT154 – Sunnyside Rd, Coatbridge	Roadside	Diffusion Tube	92%	92%	37.3	32.9	28.5	26.8	33.9
DT156 – Stirling St, Airdrie	Roadside	Diffusion Tube	92%	92%	42.2	37.0	32.9	27.5	33.8
DT157 – 31 Station Rd, Muirhead	Roadside	Diffusion Tube	92%	92%	24.2	27.1	25.4	22.4	25.6
DT158 – Croftmoraig Ave, Moodiesburn	Roadside	Diffusion Tube	92%	92%	21.9	27.1	-	16.7	17.9

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT159 – Glenview Crescent, Moodiesburn	Roadside	Diffusion Tube	92%	92%	21.5	20.4	-	16.1	15.7
DT160 – The Cuillins, Moodiesburn	Roadside	Diffusion Tube						17.0	15.7
DT161 – Bridgend Cres, Moodiesburn	Roadside	Diffusion Tube	100%	100%	18.5	16.0	18.3	14.9	14.6
DT162 – Auchingoch Rd, Moodiesburn	Roadside	Diffusion Tube	100%	100%	21.4	19.2	17.2	17.1	19.5
DT163 – 12 Inchwood Rd, Westfield, Cumbernauld	Roadside	Diffusion Tube	83%	83%	16.3	17.2	18.9	21.7	22.8
DT164 – 12 Leckethill Court, Westfield, Cumbernauld	Roadside	Diffusion Tube	100%	100%	28.8	41.3 (32.9)	31.3	17.8	18.2
Deedes Street, Airdrie	Roadside	Diffusion Tube	-	-	-	-	-	27.4	34.4
DT102new – Windmillhill St (1), Motherwell	Roadside	Diffusion Tube	58%	58%	-	-	-	-	17.9
DT103new – Windmillhill St (2), Motherwell	Roadside	Diffusion Tube	75%	75%	-	-	-	-	21.1
DT106new – Civic Centre (1), Motherwell	Roadside	Diffusion Tube	58%	58%	-	-	-	-	19.6
DT107new – Civic Centre (2), Motherwell	Roadside	Diffusion Tube	75%	75%	-	-	-	-	19.6
DT108new – Civic Centre (3), Motherwell	Roadside	Diffusion Tube	75%	75%	-	-	-	-	17.0
DT116new – Airbles Rd (nr Electric bar), Motherwell	Roadside	Diffusion Tube	75%	75%	-	-	-	-	17.7
DT118new – Merry St/Dalziel St, Motherwell	Roadside	Diffusion Tube	75%	75%	-	-	-	-	27.7
DT120new – Kirkshaws Rd, Coatbridge	Roadside	Diffusion Tube	75%	75%	-	-	-	-	26.2

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2013	2014	2015	2016	2017
DT128new – Wishaw Cross/Stewarton St, Wishaw	Roadside	Diffusion Tube	75%	75%	-	-	-	-	26.5
DT137new – Main St, Cumbernauld	Roadside	Diffusion Tube	67%	67%	-	-	-	-	24.0
DT141new – Station Rd, Shotts	Roadside	Diffusion Tube	67%	67%	-	-	-	-	15.0
DT142new – Stane Gdns, Shotts	Roadside	Diffusion Tube	75%	75%	-	-	-	-	14.8
DT54new – Columba Ct/Old Edinburgh Rd, Viewpark, Uddingston	Roadside	Diffusion Tube	67%	67%	-	-	-	-	22.9
DT55new – Old Edinburgh Rd, Viewpark, Uddingston	Roadside	Diffusion Tube	67%	67%	-	-	-	-	29.8
DT56new – Dykehead Rd, Bargeddie	Roadside	Diffusion Tube	67%	67%	-	-	-	-	20.3

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.

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 2017 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2013	2014	2015	2016	2017
CM1	Roadside	Automatic	99.3	99.3	0	2	-	1	6
CM2	Special-by quarry	Automatic	60.6	60.6	0	0	0	0	0(104)
CM5	Roadside	Automatic	46	46	0	0	0	0	0(125)
CM6	Roadside	Automatic	98.8	98.8	-	0(21)	0	0	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 2017 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2013	2014	2015	2016	2017
CM1	Roadside	85.3	85.3	19.1	19.2	18.5	15.4	12
CM2	Special-by quarry	62	62	17.6	15.4	12	13	11.3
CM3	Urban background	72.7	72.4	15.1	13.1	12	12	11.4
CM4	Roadside	98.6	98.6	18.2	15.1	13	13	13
CM5	Roadside	88.2	88.2	14	13.3	16	12	14
CM6	Roadside	84	84	-	14.8	13	11	9

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.

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2017 (%) (2)	PM ₁₀ 24-Hour Means > 50µg/m ³ (3)				
				2013	2014	2015	2016	2017
CM1	Roadside	85.3	85.3	0	1(-)	-	0(22)	0
CM2	Special-by quarry	62	62	4(46)	3	1	2(26)	1(35)
CM3	Urban background	72.4	72.4	0	0	1	0(18)	0(29)
CM4	Roadside	98.6	98.6	2(38)	0	0(35)	0	0
CM5	Roadside	88.2	88.2	1(31)	0(19)	1(36)	0	0
CM6	Roadside	84	84	-	0(21)	0	0	0(26)

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 98.1st percentile of 24-hour means is provided in brackets.

Table A.7 – Annual Mean PM_{2.5} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽²⁾	PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2013	2014	2015	2016	2017
CM1	Roadside	79.3	46	-	-	-	-	5

Notes: Exceedences of the PM₁₀ annual mean objective of 10µg/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.

Table A.8 – SO₂ Monitoring Results

Site ID	Site Type	Valid Data Capture for monitoring Period (%) ⁽¹⁾	Valid Data Capture 2017 (%) ⁽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	Special-by quarry	61.6	61.6	0(10)	0(8)	0(2)

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 2017

Table B.1 – NO₂ Monthly Diffusion Tube Results for 2017

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)	
	DT100 Civic Centre, Motherwell	43.3	58.3	41.6	44.4	24.2	34.6	25.2	30.7	33.6	42.5	34.5			43.2
DT101 Shields Rd, Motherwell	28.9	36.3	31.3	27.3	22.1	18.7	16.5	21	21.4	24.2	26.6	35.6	25.8	23.2	
DT102 Emily Dr, Motherwell	14.9	18.2	15.8	-	-	-	-	-	-	-	-	-	16.3	14.7	
DT103 Kethers Lane, Motherwell	23.7	25	22.6	-	-	-	-	-	-	-	-	-	23.8	21.4	
DT104 Coursington Rd, Motherwell	31.6	22.2	13.6	13.9	-	6.8	9.3	-	8.2	6.1	7.9	13.1	13.3	11.9	
DT105 Craigneuk Rd, Motherwell	24	25.8	18.9	15.5	14.3	1.8	-	9.6	7	12	11.4	24.2	15.0	13.5	
DT106 Camp St, Motherwell	30.3	28.3	23.3	-	-	-	-	-	-	-	-	-	27.3	24.6	
DT107 Braehead Farm, Bargeddie	43.3	28.3	35.4	-	-	-	-	-	-	-	-	-	35.7	32.1	
DT108 MSA Factory, Shawhead	43.6	51.2	29.9	-	-	-	-	-	-	-	-	-	41.6	37.4	
DT110 New Edinburgh Rd (1), Uddingston	46	53	41.2	42.4	33.8	27.8	20.4	26.6	-	37.4	27.4	52	37.4	33.7	
DT111 New Edinburgh Rd (2), Uddingston	39.3	45.1	42.6	38.7	34.8	30.5	28.6	-	-	37.2	34.2	20.8	35.2	31.7	

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)
DT112 New Edinburgh Rd (3), Uddingston	41.4	47.4	43.4	36.7	35.5	37	25.8	25.4	29	31.8	33	50.3	36.4	32.7
DT113 Tinkers Lane, Motherwell	28.8	32.9	27.6	28.2	19.6	15.4	19.6	23.6	19.5	13.6	21.1	40.6	24.2	21.8
DT114 Main St, Overtown	38.3	31.1	22.1	24.6	16.8	15.5	15	14.3	15.6	16.2	19.3	32.3	21.8	19.6
DT115 Ravenscraig Bypass	22.9	23.7	21.1	15.5	12.1	9	7.8	8.6	10.3	9.1	12.1	25.2	14.8	13.3
DT116 Delburn St, Motherwell	31.2	41.1	31.9	-	-	-	-	-	-	-	-	-	34.7	31.3
DT117 Hamilton Rd, Motherwell	40.4	45.2	41.3	39.4	27.2	29.1	24.3	23.9	31.5	27.4	27.6	47	33.7	30.3
DT118 Shawhead roundabout, Coatbridge	45.4	51.9	29.9	-	-	-	-	-	-	-	-	-	42.4	38.2
DT119 Kirkshaws Rd, Coatbridge	45	55	32.5	33.5	39	24	25.8	22.5	30.2	27.8	34.2	48	34.8	31.3
DT120 Watsonville, Motherwell	29.6	12.7	24.4	-	-	-	-	-	-	-	-	-	22.2	20.0
DT121 Flannigan Grove, Bellshill	28.6	30.1	22.7	24.2	19.4	18.7	14.8	15.1	14.8	19.6	17.8	34.5	21.7	19.5
DT122 Main St, Mossend	35.2	41.2	35.2	41.7	28.7	28	20.6	21.8	17.9	29.1	-	44.8	31.3	28.2
DT123 Hamilton Rd, Orbiston, Bellshill	39.6	40.7	25.6	35.2	24.2	19.7	16.7	18.7	22.3	27	25.2	41.7	28.1	25.2
DT124 Scotmid, Tannochside	25.8	43.7	29	31.1	27.3	23.8	21.9	19.8	20.4	28	24	46.3	28.4	25.6

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)	
	DT125 Main St, Bellshill (nr Bellshill Academy)	28.1	29.1	19.9	26.5	17.3	21	15.4	12.1	19.5	22	17.6			33.3
DT126 Main St/Motherwell Rd, Bellshill	35.3	36.7	29.8	23.6	18.1	15.9	11.4	18.2	12.9	23.9	15.6	-	21.9	19.8	
DT127 Main St, Bellshill (Tesco delivery rd)	27.4	32.6	22.2	-	-	-	-	-	-	-	-	-	27.4	24.7	
DT128 Matalan, Wishaw	39.9	40.5	30.6	30.9	29.3	22.7	23.5	18.8	23	24.2	28.9	48.5	30.1	27.1	
DT129 Police Station, Newmains	26.9	43	35	34.3	24.3	23.6	24.6	19.1	23.9	28.7	23.1	46.8	29.4	26.5	
DT130 Main St (bottom). Wishaw	17.8	24.1	18.6	18.6	14.6	10.2	7.9	11	10.9	14.2	14.6	29.9	16.0	14.4	
DT131 Brandon Pl, Bellshill	23.4	30.8	21.8	28.2	21.3	12.1	17.3	14.9	16.2	17.9	15.7	37.3	21.4	19.3	
DT132 Airdrie Rd, Caldercruix	27	16	17.8	10.6	14.8	11.4	11.1	16	14.6	22.5	13	-	15.9	14.3	
DT133 Bank St, Coatbridge (1)	27.3	49.4	44.9	54.6	32.6	26	25.8	29.9	-	36.5	44.2	-	37.1	33.4	
DT134 Whifflet Court, Coatbridge (2)	38	38.6	23.3	31.8	17.7	17.2	12.7	-	20.6	18	-	38	25.6	23.0	
DT135 Grahamshill St, Airdrie	30.6	54.2	39.3	48	34.3	33.2	20.2	23.1	-	32.9	31.1	56	36.6	33.0	
DT136 Airdrie (3), Springwells Cres	27	32.4	20.7	36.8	-	13.5	13.5	12.2	14.6	20.1	32.6	-	22.3	20.1	
DT137, Auchenkilns, Cumbernauld	35.5	41.6	-	-	-	-	-	-	-	-	-	-	38.6	34.7	

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	33.4	43.6	26.4	35	16	17	-	17.4	-	21.2	27	41.3	27.8	25.0
Dt139 Lauchope St, Chapelhall	48.1	62.3	48.3	53.6	44.9	31.7	34.9	28.6	40.1	40.7	43.3	55.9	44.4	39.9
Dt140 Dundyvan Rd, Coatbridge	33.1	45	32.2	34.8	20.1	18.3	12.6	15.4	16.4	21.8	22	42.5	26.2	23.6
DT141 Main St, Harthill (1),nr shops	25.1	24.5	17.2	-	-	-	-	-	-	-	-	-	22.3	20.0
DT142 Salsburgh house no 337 (R15)	20.8	23.8	-	-	-	-	-	-	-	-	-	-	22.3	20.1
DT143 Main St, Harthill (2) nr shops	20.6	28.3	19.1	18.9	16.7	15.3	12.8	11.6	13.3	14.5	16.1	24.9	17.7	15.9
DT144 Lab 1, Constarry Rd, Croy	25	31.5	21	25.5	12.5	16.1	11.4	12.9	14	18.5	15.1	26.3	19.2	17.2
DT145 Lab 2, Constarry Rd, Croy	25.1	30.7	19.1	26.7	13.2	15.9	11.9	12.5	14.4	14.8	15.8	26.3	18.9	17.0
DT146 Lab 3, Constarry Rd, Croy	24	33	20.6	24.7	12.7	15.9	11.6	14.2	15.4	15.3	16.8	-	18.6	16.7
DT147 bank St (nearest house), Coatbridge	44.5	54.6	39	47.5	24.7	30	22.3	23.8	24.4	-	29.3	45.9	35.1	31.6
DT148 Main St, Chapelhall (post R32)	34.4	49.3	37.2	37	25.3	31.9	23.4	25.7	26	29.9	32.1	-	32.0	28.8
DT149 Main St, Chapelhall (post R33)	41.1	40.2	39	42.9	24.5	33.5	21.1	24.7	31.6	35.4	33.1	46.2	34.4	31.0
DT150 Eastfield Rd, Cumbernauld(R6P783)	26.7	26.8	-	55.6	16.7	11.8	11.6	13.8	16.1	18	25.7	-	22.3	20.1

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)
DT151 Main St, Holytown	26.1	35.9	35.7	35.7	22.9	21.4	18	-	19.4	19.4	-	37.4	27.1	24.4
DT152 Coatbridge Rd, Townhead (nr shops)	38.1	48.6	-	38.9	31.9	27.5	21.7	15.8	23.2	28.4	31.2	48.3	32.1	28.9
DT153 72 Townhead Rd, Coatbridge	7.1	38.3	25.7	24.7	16.6	15.6	14.4	11.2	15.3	17.3	17.8	32.3	19.7	17.7
DT154 Sunnyside Rd, Coatbridge	42.7	50.9	22.4	45.8	37.6	34.3	17.8	22.7	-	67.4	26.2	46.4	37.7	33.9
DT156 Stirling St, Airdrie	45.7	50.9	40.7	45	32.7	31.8	25.5	21.6	31.3	36.1	-	51.6	37.5	33.8
DT10 Castle Court, Castlecary	-	42.9	33.3	38.2	20.7	20.6	19.3	16.1	22.9	24.6	33.8	45	28.9	26.0
DT157 31 Station Rd, Muirhead	31.9	39.5	29.5	18.7	30.8	21.5	16	-	-	22.3	-	46.1	28.5	25.6
DT158 Croftmoraig Cres, Moodiesburn	22.7	33.2	22.3	15.2	15	13.4	10.3	12.9	-	23	22.6	26.1	19.7	17.7
Deedes St, Airdrie	38.3	58.3	39.6	-	35.9	36	29.5	22.6	31.6	40.4	26.7	61	38.2	34.4
DT159 Glenview Cres, Moodiesburn	26.2	35.4	-	16.5	16.6	14	7.7	14.2	14.4	13.5	28.5	32	19.9	17.9
DT160 The Cuillins, Moodiesburn	26.2	31.3	20.5	12.9	5.7	13.4	9.4	10.8	14.1	11.3	24.1	29.8	17.5	15.7
DT161 Bridgend Cres, Moodiesburn	23.7	29.7	19.4	10.8	14.8	10.5	9.7	10	12.6	10.2	16.3	26.6	16.2	14.6
DT162 Auchhingoch Rd, Moodiesburn	25.4	-	24.9	15.3	17.8	14.8	12.7	11.7	15.1	15.9	-	63	21.7	19.5

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)
DT163 12 Inchwood Rd, Westfield, Cumbernauld	27.9	44.5	30.6	19.1	26	23.1	15.1	11.7	17.4	31.8	28.1	28.5	25.3	22.8
DT164 12 Leckethill Ct, Westfield, Cumbernauld	36.9	32.1	25.3	-	14.7	12.2	9.6	15.2	14.5	12.6	23.2	26.2	20.2	18.2
DT47 Layby in Stand	29.3	38.3	23.5	29.1	13.5	20.3	9.5	16.8	19.3	18.3	29.7	32.5	23.3	21.0
DT48 Bus stop Bron Way, Cumbernauld	42.1	45.1	36.6	39.7	21.3	21.3	21.5	23.6	23.3	19.2	40.6	50.9	32.1	28.9
DT49 Swimming pool, Kilsyth	20.7	34.3	17.4	21.2	13.2	14.2	9.8	14.9	15.4	-	21.7	29.7	19.3	17.4
DT50 1791 Cumbernauld Rd, Stepps	34.5	32.3	27.7	17.8	29.5	17.8	16.5	16.7	20.3	21.2	26.2	37.6	24.8	22.4
DT51 131 Cumbernauld Rd, Stepps	36.3	42.3	27.9	22.2	25.5	23.6	17.6	18.9	20.8	23.4	32.7	39.5	27.6	24.8
DT52 A80 eastbound, traffic lights, Moodiesburn	29.3	28	21.1	13.5	18.6	14.5	11.8	12.6	15.8	15.7	23.2	28.4	19.4	17.4
DT53 A80 westbound, traffic lights, Moodiesburn	34	22.7	28.2	18.1	18.2	22.5	17.6	15.4	18.3	17.5	32.6	34	23.3	20.9
DT54 Lochend Rd, Gartosh jctA752	-	38.4	25.6	-	-	-	-	-	-	-	-	-	32.0	28.8
DT55 Whitelaw Rd end, Glenboig	17.1	22.7	3.9	-	-	-	-	-	-	-	-	-	14.6	13.1
DT56 Garnqueen Ave, Glenboig	-	24.8	15.3	-	-	-	-	-	-	-	-	-	20.1	18.0

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)
DT57 Main St/Carrick View, Glenboig	23	25.9	17.9	15.8	10.7	12.6	10.5	12.3	15.9	12.5	23.5	35.9	18.0	16.2
DT58 115 Coatbridge Rd, Glenboig	21.4	26.6	19.1	17.1	17.8	24	16	17.8	24.1	26.3	35.8	45.1	24.3	21.8
DT59 10-16 Coronation Pl, Mount Ellen	23.6	33.8	19.7	19.2	10.7	14.5	10.9	11.2	16	9.8	26.4	34	19.2	17.2
DT61 under bridge Central Way eastbound, Cumbernauld	-	-	-	-	47.4	60.2	37.9	37.2	55.7	-	58.4	72.4	52.7	47.5
DT62 A Central Way, westbound, Cumbernauld	-	-	-	-	32	36.8	29.1	35.2	33.4	-	46.8	60.9	39.2	35.3
DT63 B Central Way, westbound, Cumbernauld	37.8	50.2	31.4	-	-	-	-	-	-	-	-	-	39.8	35.8
DT102 Windmillhill St (1), Motherwell	-	-	-	22.8	-	-	10.8	14.2	24.9	18.9	13.6	22.5	18.2	16.4
DT103 Windmillhill St (2), Motherwell	-	-	-	24.7	22.4	25.3	17.7	20.7	17.8	26.5	23.6	31.8	23.4	21.1
DT106 Civic Centre, Motherwell	-	-	-	-	17.3	-	31.5	14.5	15.3	18.9	18.4	27.7	20.5	18.5
DT107 Civic Centre (2), Motherwell	-	-	-	18.7	16.3	14.6	15.9	15.9	16.5	19.1	20.5	27.4	18.3	16.5
DT108 Civic Centre (3), Motherwell	-	-	-	17.6	16	13.8	14.6	15.4	17.5	19.4	19.9	35.9	18.9	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)	
	DT116 Airbles Rd nr Electric Bar, Motherwell	-	-	-	29.9	16.7	14.9	13.9	16.9	11.7	18.2	15.9			39.1
DT118 Merry St jnc Dalziel St, Motherwell	-	-	-	42.1	31.8	19.5	27.1	17.7	27.3	27.6	34.2	49.5	30.8	27.7	
DT120 Kirkshaws Rd, Coatbridge	-	-	-	33.9	33.1	20.1	19.5	19.9	24.5	30.4	27.8	52.9	29.1	26.2	
DT128 Wishaw Cross/Stewarton St, Wishaw	-	-	-	31.3	23.4	30.6	22.8	22.1	27.8	32.2	29.5	45.4	29.5	26.5	
DT137 Main St, Cumbernauld Village	-	-	-	47.8	24.6	-	13.8	17.4	18.1	18.6	19.3	33.4	24.1	21.7	
DT141 Station Rd, Shotts	-	-	-	21.3	-	11.4	13.1	7.8	13.4	15.7	11.9	23.1	14.7	13.2	
DT142 Stane Gdns, Shotts	-	-	-	22.4	17.7	12.9	8.5	9.9	15.7	16.6	15.3	29.2	16.5	14.8	
DT54 Columba Ct/old Edinburgh Rd, Viewpark	-	-	-	21.1	-	16.7	15.6	18.8	19.5	19.1	29.1	39.8	22.5	20.2	
DT55 Old Edinburgh Rd, Viewpark	-	-	-	22.8	-	28.2	19	21.4	31.1	21	37	53.7	29.3	26.3	
DT56 Dykehead Rd, Bargeddie	-	-	-	17	-	16.8	15.6	16	21	16.7	28.2	28.6	20.0	18.0	

(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 measurements of NO₂ in triplicate at Croy automatic monitoring site however a co-location evaluation was not carried out in this case as data capture for Croy in 2017 was only 60%. The bias factor from the national database is presented in Figure C.1

The bias adjustment factor for Glasgow Scientific Services (GSS) in 2017 was 0.9.

Discussion of Choice of Factor to Use

The national co-location bias adjustment factor (GSS) of 0.9 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.

National Diffusion Tube Bias Adjustment Factor Spreadsheet						Spreadsheet Version Number: 06/18				
Follow the steps below in the correct order to show the results of relevant co-location studies						This spreadsheet will be updated at the end of September 2018 LAQM Helpdesk Update				
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods										
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet										
This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.										
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.						Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.				
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ² shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data		If you have your own co-location study then see footnote ⁴ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAGMHelpdesk@uk:bureauveritas.com or 0800 0327953				
Analysed By ¹	Method ² <small>Tap on the year table cells, choose (M) from the pop-up list</small>	Year ³ <small>Tap on the year table cells, choose (All)</small>	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁵	Bias Adjustment Factor (A) (Cm/Dm)
Glasgow Scientific Services	20% TEA in water	2017	KS	Glasgow City Council	12	63	59	6.2%	G	0.94
Glasgow Scientific Services	20% TEA in water	2017	R	Glasgow City Council	12	45	36	24.5%	P	0.80
Glasgow Scientific Services	20% TEA in water	2017	KS	Marylebone Road Intercomparison	12	77	79	-2.2%	G	1.02
Glasgow Scientific Services	20% TEA in water	2017	R	East Dunbartonshire Council	11	32	26	11.6%	P	0.90
Glasgow Scientific Services	20% TEA in water	2017	R	East Dunbartonshire Council	11	29	25	15.5%	G	0.87
Glasgow Scientific Services	20% TEA in water	2017	R	East Dunbartonshire Council	11	22	21	4.1%	G	0.96
Glasgow Scientific Services	20% TEA in water	2017	R	East Dunbartonshire Council	11	38	33	15.5%	P	0.87
Overall Factor² (10 studies)								Use	0.90	

Figure C.1 Glasgow Scientific Services – National Average Bias Adjustment Factor 2017

Particulate Matter (PM) Monitoring Adjustment

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

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

Both 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 and ratified and gravimetric equivalent by Ricardo Energy and Environment.

NO₂ Monitoring Annualisation

The data capture for annual mean NO₂ was below 75% at a number (26) of diffusion tubes in 2017. The relatively high number was due to the cessation of monitoring at a number of sites and the commissioning of new sites throughout the Council area. As a result of this the annual mean concentrations were annualised in accordance with the technical guidance TG(16).

The annualisation process is summarised in the Table below.

Table C.1 Diffusion Tube Annualisation 2017

Automatic site		January	February	March	April	May	June	July	August	September	October	November	December	Annual
1	Grangemouth Moray	23.4	20.3	20.4	9.2	15.4	10.5	10.3	8.1	13.7	11.5	19.9	27.2	15.8
2	Waukmilligen Reservoir	15.5	14.4	12.8	6.2	7.8	6.5	6.1	6.2	9.7	6.2	9.8	11.5	9.4
3	Glasgow Townhead	36.4	26.7	29.0	18.1	15.9	14.1	14.2	17.9	22.0	23.2	38.0	45.1	25.0
4														
5														

Tube ID	D1												Period Mean	Months Available	Ra					
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12			Annualisation Ratio	Annualised Data	Data Capture %			
3	[102] Emily Drive, Motherwell	14.9	18.2	15.8										16.30	3	0.74	12.05	25%		
4	[103] Kethers Lane, Motherwell	23.7	25	22.6										23.77	3	0.74	17.57	25%		
7	[106] Camp Street, Motherwell	30.3	28.3	23.3										27.30	3	0.74	20.18	25%		
8	[107] Braehead Farm, Bargeddie	43.3	28.3	35.4										35.67	3	0.74	26.36	25%		
9	[108] Shawhead, MSA Factory	43.6	51.2	29.9										41.57	3	0.74	30.72	25%		
16	[116] Delburn Street, Motherwell	31.2	41.1	31.9										34.73	3	0.74	25.67	25%		
18	[118] Shawhead roundabout, Coatbridge	45.4	51.9	29.9										42.40	3	0.74	31.34	25%		
20	[120] Watsonville, Motherwell	29.6	12.7	24.4										22.23	3	0.74	16.43	25%		
27	[127] Main Street, near/at Tesco delivery road	27.4	32.6	22.2										27.40	3	0.74	20.25	25%		
37	[137] Auchenkilns, Cumbernauld	35.5	41.6											38.55	2	0.72	27.57	17%		
41	[141] Harthill Main Street(1), (Near shops)	25.1	24.5	17.2										22.27	3	0.74	16.46	25%		
42	[142] Salsburgh, (house number 337), R15.	20.8	23.8											22.30	2	0.72	15.95	17%		
51	[151] Holytown, Main Street	26.1	35.9		35.7	22.9	21.4	18			19.4		37.4	27.10	8	1.01	27.43	67%		
73	[54] GARTCOSH LOCHEND RD & CB JCT A		38.4	25.6										32.00	2	0.79	25.28	17%		
74	[55] GLENBOIG WHITELAW ROAD END	17.1	22.7	3.9										14.57	3	0.74	10.77	25%		
75	[56] Glenboig Garnqueen Ave 1st Post. Left		24.8	15.3										20.05	2	0.79	15.84	17%		
81	61 Under Bridge Central Way E Cumbernauld					47.4	60.2	37.9	37.2	55.7		58.4	72.4	52.74	7	1.08	57.02	58%		
82	62 A Central Way West Bound Cumbernauld					32	36.8	29.1	35.2	33.4		46.8	60.9	39.17	7	1.08	42.35	58%		
83	63 B Central Way West Bound Cumbernauld	37.8	50.2	31.4										39.80	3	0.74	29.42	25%		
84	[102] Windmillhill Street 1, Motherwell				22.8				10.8	14.2	24.9	18.9	13.6	22.5	18.24	7	1.09	19.88	58%	
86	[106] Civic Centre, Motherwell					17.3			31.5	14.5	15.3	18.9	18.4	27.7	20.51	7	1.06	21.78	58%	
93	[137] Village Main Street, Cumbernauld				47.8	24.6			13.8	17.4	18.1	18.6	19.3	33.4	24.13	8	1.10	26.63	67%	
94	[141] Station Road, Shotts				21.3				11.4	13.1	7.8	13.4	15.7	11.9	23.1	14.71	8	1.13	16.64	67%
96	[54] Viewpark (Columba Court & Old Ed Rd)				21.1				16.7	15.6	18.8	19.5	19.1	39.8	22.46	8	1.13	25.41	67%	
97	[55] Viewpark (Old Edinburgh Rd) Uddingston				22.8				28.2	19	21.4	31.1	21	37	53.7	29.28	8	1.13	33.11	67%
98	[56] Dykehead Rd, Bargeddie				17				16.8	15.6	16	21	16.7	28.2	19.99	8	1.13	22.61	67%	

Table C. 2 Annualisation for Annual Mean NO₂ at Automatic monitoring site CM2 – Croy

Month	Automatic Site CM2 – Croy	Grangemouth Moray	Walkmillglen Reservoir	Glasgow Townhead
January	29	23.4	15.5	36.4
February	22	20.3	14.4	26.7
March	-	20.4	12.8	29.0
April	-	9.2	6.2	18.1
May	-	15.4	7.8	15.9
June	-	10.5	6.5	14.1
July	12	10.3	6.1	14.2
August	13	8.1	6.2	17.9
September	17	13.7	9.7	22.0
October	17	11.5	6.2	23.2
November	28	19.9	9.8	38.0
December	38	27.2	11.5	45.1
Annual Mean		15.8	9.4	25.0
Period Mean	22.00			
Months Available	8	12	12	12
Annualisation Ratio	0.93			
Annualised Data	20.41			
Data Capture for the year	67%			

Table C.3 Annualisation for Annual Mean NO₂ at Automatic monitoring site CM5 – Shawhead (Coatbridge)

Month	Automatic Site CM5 – Shawhead	Grangemouth Moray	Waulkmillglen Reservoir	Glasgow Townhead
January	44	23.4	15.5	36.4
February	29	20.3	14.4	26.7
March	32	20.4	12.8	29.0
April	-	9.2	6.2	18.1
May	-	15.4	7.8	15.9
June	-	10.5	6.1	14.1
July	-	10.3	6.1	14.2
August	-	8.1	6.2	17.9
September	-	13.7	9.7	22.0
October	24	11.5	6.2	23.2
November	43	19.9	9.8	38.0
December	48	27.2	11.5	45.1
Annual Mean	-	15.8	9.4	25.0
Period Mean	36.67			
Months Available	6			
Annualisation Ratio	0.78			
Annualised Data	28.53			
Data Capture for the year	50%			

Table C.4 Annualisation for Annual Mean PM₁₀ at Automatic Site CM2 - Croy

Month	Automatic Site CM2 – Croy	Walkmillglen Reservoir	Glasgow Townhead
January	13	16.6	16.0
February	12	15.0	11.0
March	10	17.0	12.0
April	-	13.0	14.0
May	-	17.0	16.0
June	-	11.0	10.0
July	18	12.0	11.0
August	11	10.0	9.0
September	9	10.0	9.0
October	11	12.0	9.0
November	11	13.0	7.0
December	10	14.0	7.0
Annual Mean		13.3	10.9
Period Mean	11.67		
Months Available	9	12	12
Annualisation Ratio	0.97		
Annualised Data	11.34		
Data Capture for the year	75%		

Table C.5 Annualisation for Annual Mean PM₁₀ at Automatic Site CM3 – Whifflet, Coatbridge

Month	Automatic Site CM2 – Whifflet, Coatbridge	Walkmillglen Reservoir	Glasgow Townhead
January	12	16.6	16.0
February	11	15.0	11.0
March	14	17.0	12.0
April	11	13.0	14.0
May	16	17.0	16.0
June	10	11.0	10.0
July	11	12.0	11.0
August	10	10.0	9.0
September	10	10.0	9.0
October	9	12.0	9.0
November	-	13.0	7.0
December	-	14.0	7.0
Annual Mean		13.3	10.9
Period Mean	11.40		
Months Available	10	12	12
Annualisation Ratio	0.98		
Annualised Data	11.40		
Data Capture for the year	83%		

Table C.6 Annualisation for Annual Mean PM2.5 at Automatic Site CM1

Month	Automatic Site CM1 – Chapelhall	Walkmillglen Reservoir	Edinburgh, St Leonards
January	-	11.0	3.0
February	-	9.0	2.0
March	-	9.0	3.0
April	-	6.0	2.0
May	6	9.0	3.0
June	4	9.0	3.0
July	4	6.0	2.0
August	3	6.0	1.0
September	5	7.0	1.0
October	4	7.0	1.0
November	-	8.0	1.0
December	5	10.0	1.0
Annual Mean		7.8	1.8
Period Mean	4.43		
Months Available	7	12	12
Annualisation Ratio	1.13		
Annualised Data	4.99		
Data Capture for the year	58%		

QA/QC of Diffusion Tube Monitoring

NO₂ diffusion tubes 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 rounds in 2016 and 2017 based on a z-score of <+2 were as follows:-

September to October 2016 : 100%

January to February 2017 : 100%

April to May 2017 : 50%

July to August 2017 : 0%

September to October 2017 : 100%

Over a rolling five round WASP window, it is expected that 95% of laboratory results should be less than or equal to plus or minus 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 2017 is less than 95%.

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 TG(16) (Defra)

North Lanarkshire Council Air Quality Action Plan 2013-2016

North Lanarkshire Council Air Quality Action Plan 2018-2021