Annual Progress Report (APR)



East Lothian Council

2025 Air Quality Annual Progress Report (APR) for East Lothian Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

August 2025

East Lothian Council

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Executive Summary: Air Quality in Our Area

Air Quality in East Lothian

In 2024, there were no exceedances of any Air Quality Objectives (AQO) in East Lothian. In addition, East Lothian Council has not exceeded any AQO since 2016. AQO have been put in place by the Scottish Government to protect human health and East Lothian Council is required to monitor and report annually against these objectives.

The main pollutants of concern in East Lothian are NO₂, PM2.5 and PM10. The results from the monitoring in 2024 show a decrease in the annual mean concentration of NO₂ at all diffusion tube locations compared to the previous year. This trend is confirmed by our automatic monitoring station located in Musselburgh which recorded an annual mean NO₂ concentration of 10.8 μ g/m³ in 2024 compared to 17.1 μ g/m³ in 2023 (AQO for NO₂ is 40 μ g/m³). There were also no exceedances of the 1-hour NO₂ objective at our automatic monitoring location.

There was a decrease in the annual mean PM2.5 concentration from 6.9µg/m³ in 2023 to 6.4µg/m³ in 2024 (AQO for PM2.5 is 10µg/m³). The annual mean PM10 concentration was 11.4µg/m³ in 2024 which is well below the 18µg/m³ AQO. There was one day where the 24-hour mean of 50µg/m³ was exceeded for PM10, however, this is within the limit of the allowed seven exceedances per year.

For the data analysis this year, the national bias adjustment factor (0.83) was used instead of the local bias adjustment factor (0.85) in the annual mean concentration calculations due to poor overall precision and data capture. The observed drop in concentrations for 2024 may therefore be linked to the use of this value as opposed to an observed improvement in air quality. In addition, the automatic monitor captured valid data for 84.3% of the 2024 monitoring period. This slight gap in data may have also impacted the automatic annal mean concentration value.

East Lothian's AQMA

In 2013 East Lothian Council declared an Air Quality Management Area (AQMA) in Musselburgh due to a potential exceedance of the Nitrogen dioxide (NO₂) annual mean

AQO. A map of the extent and location of the AQMA is provided in Appendix A: Monitoring Sites and AQMA Maps. East Lothian Council have actioned a number of measures in Musselburgh to reduce NO₂ emissions which were mainly linked to congestion on Musselburgh High Street. As a result of the actions implemented by the Council, NO₂ pollution levels decreased to within the AQO and have stayed so for the past eight years.

In 2022 East Lothian Council carried out a Detailed Assessment of the Musselburgh AQMA (References). The results conclude that future exceedances of any AQO are unlikely. As such, East Lothian Council sought permission from the Scottish Government to revoke the Musselburgh AQMA, which was granted in December 2022. East Lothian Council are in the process of carrying out a consultation exercise with relevant stakeholders to seek their comments on the proposed revocation of the AQMA. A draft Revocation Report will be available to consultees as part of the revocation process. It is anticipated that the revocation of the AQMA will be completed by the end of 2025.

Actions to Improve Air Quality

East Lothian Council published the Musselburgh Air Quality Action Plan in February 2017 (References). The AQAP outlines short, medium and longer-term measures to be implemented to improve air quality within the AQMA and throughout the County in general.

Over the eight years since the AQAP was published, East Lothian Council have continued to work towards better air quality and have implemented actions such as **ECO Stars**, the **East Scotland Vehicle Emissions Partnership**, as well **as improving** interdepartmental links between transport, planning and climate teams.

The above actions implemented by the Council have helped to improve air quality in both Musselburgh and throughout East Lothian. More information on these actions can be found in 2.2 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

Local Priorities and Challenges

It is East Lothian Council's priority to ensure that there are no exceedances of any AQO moving forward. To do this we will continue to monitor air quality in the area as well as ensure effective collaborative working between relevant teams within the Council - Environmental Health, Planning, Transport and Climate. Our main aim being to ensure

that air quality is a key consideration when decisions are made regarding future development and growth within East Lothian.

In addition, it will be the Council's priority over the next year to revoke the Musselburgh AQMA as a result of the continued and maintained improvement of air quality in the area.

How to Get Involved

Further information on Air Quality within East Lothian, including access to annual air quality reports, can be obtained from East Lothian Council's Website.

Information on local and national Air Quality, including access to real-time data and maps can be obtained from the <u>Air Quality in Scotland website</u>.

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1 Local Air Quality Management

This report provides an overview of air quality in East Lothian during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), 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 East Lothian Council to improve air quality and any progress that has been made.

Table 1-1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO ₂)	200 µg/m³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO ₂)	40 μg/m³	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
Particulate Matter (PM ₁₀)	18 μg/m³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 μg/m³	Annual mean	31.12.2021
Sulphur dioxide (SO ₂)	350 µg/m³, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	125 µg/m³, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	266 µg/m³, 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/m³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003

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 publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

A summary of AQMAs declared by East Lothian 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 <u>East Lothian Council's AQMA webpage</u>.

Table 2-1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
High Street Musselburgh	NO2 Annual Mean	Musselburgh	High Street Musselburgh (A199) from its junction with Newbiggin and extending westwards to the junction with Bridge Street and Mall Avenue.	Air Quality Action Plan 2017

2.2 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process. East Lothian Council has taken forward a number of measures within the action plan during the current reporting year of 2024 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time.

Although the actions from East Lothian Council's 2017 AQAP (References) have proved as useful indicators of progress towards air quality goals, East Lothian Council have recognised that a number of these actions are no longer a focus for the Council. This is especially true as the Council is currently in the process of revoking the Musselburgh AQMA and aims to do this by the end of 2025. The actions that the Council are no longer working towards from the 2017 AQAP due to circumstances such as a lack of resource, funding and stakeholder buy-in, are listed below:

- Measure 3: Bus Stop Relocations on Musselburgh High Street.
- Measure 4: Enforcement of idling provisions of The Road Traffic (Vehicle Emission)
 (Fixed Penalty) (Scotland) Regulations 2003
- Measure 5: Electrification of Lothian Buses in Musselburgh
- Measure 7: SCOOT Traffic Management
- Measure 8: Longer Train Platforms at Musselburgh Rail Station
- Measure 9: AQMA Signage
- Measure 11: Development of Travel Plans
- Measure 12: Promotion of Cycling and Walking
- Measure 13: Provision of Information relating to Air Quality and Travel options

In order to streamline our actions and focus in on relevant measures which will allow the most progress to be made towards improving air quality in the area, East Lothian Council have identified five measures that will be the focus for the Council regarding air quality going forward. Four out of these five actions were included in East Lothian's 2017 AQAP and have only been updated to ensure relevance to the Council's current day air quality goals (the actions have been numbered with reference to their previous action plan number). East Lothian Council will continue to update and adapt these actions as priorities

change and new goals emerge. Details of all current actions completed, in progress or planned are set out in Table 2-2.

Key completed measures for this reporting year are:

• ECO Stars (action plan measure 6): East Lothian Council secured funding from the Scottish Government and has renewed its contract with Eco Stars Fleet Recognition Scheme within East Lothian. The scheme provides recognition for best operational practices and guidance for making improvements to fleet operators with the ultimate aim of reducing fuel consumption and reduced emissions. The Council's own fleet, together with Commercial Fleet Operators are encouraged to engage with the scheme which has a positive impact on emissions. East Lothian Council are members of the scheme and are proud to have been awarded a five-star rating. The table below shows how the scheme has grown annually since 2017 until November 2024:

YEAR	NUMBER OF MEMBERS	NUMBER OF VEHICLES
2020	205	7524
2021	219	7806
2022	222	7919
2023	247	8836
2024	262	9208

• East Central Scotland Vehicle Emissions Partnership (action plan measure 10): East Lothian Council works in partnership with Midlothian, West Lothian, Falkirk and, since 2019, Stirling Councils with a common aim of raising awareness of vehicle emissions and impacts on air quality amongst the general public. The partnership also investigates complaints of idling and provides an educational element to increasing awareness of air quality impacts from road traffic. Further information on the work of the Partnership can be found on the Switch Off and Breathe website.

Transport: East Lothian Council's transport team are taking air quality into account
in the development of the spatial strategy of the next Local Development Plan
(LDP) and through the assessment of sites that have been put forward for inclusion
in the LDP.

East Lothian Council expects the following measures to be completed over the course of the next reporting year:

- Revocation of Musselburgh AQMA: East Lothian Council will prioritise revoking
 the Musselburgh AQMA over the next reporting year. This will include producing a
 revocation report and consulting with stakeholders.
- Automatic Air Quality Infrastructure Review: East Lothian Council have
 experienced issues with the air quality recording infrastructure which has required
 analyser parts to be replaced and frequent officer visits to recording sites. As a
 result of this additional resource burden, the Council will undertake a review of the
 infrastructure in East Lothian and plan any upgrades and/or replacements needed
 in order to ensure compliance. The Council have already communicated this plan
 with the Scottish Government.
- Climate Change Strategy 2025-30: In the next reporting year, East Lothian will release its Climate Change Strategy which will include elements on air quality.

East Lothian Council has not identified any new measures since the last reporting year.

Table 2-2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/ Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1 (action plan measure 1)	Improve Links with Local Transport Strategy (LTS) and Team	Transport planning and infrastructure	Ongoing	N/A	Planned	N/A	1. Organise regular meetings with Transport Team. 2. Discuss and draft goals for the next reporting year. 3. Identify how air quality can be implemented in the next Local Transport Strategy.	N/A	Potential barriers include lack of stakeholder commitment and funding to implement more complex measures.
2 (action plan measure 2)	Improve Links with Local Development Plan (LDP) and Team	Policy guidance and development control	Ongoing	N/A	Planned	N/A	1. Organise regular meetings with Planning Team. 2. Discuss and draft goals for the next reporting year. 3. Identify how policies relating to air quality can be included in the next LDP.	N/A	Potential barriers include lack of stakeholder commitment and funding to implement more complex measures.
3 (new action)	Improve Links with Climate Change Strategy and Team	Policy guidance and development control	Ongoing	N/A	In Progress	N/A	1. Organise regular meetings with Climate Change Team. 2. Plan how teams can work in a more integrated manner. 3. Identify how the air quality team can work towards achieving goals set out in the East Lothian's Climate Change Strategy (2025-30).	1. Air quality and climate change team met to discuss and plan how the work of both teams can become more integrated.	Potential barriers include lack of stakeholder commitment and funding to implement more complex measures.

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4 (ad pla mea: 6	un Fleet Recognition	S Traffic	Ongoing	TRL	In Progress	Received funding from Scottish government.	1. Review accomplishments from previous years and see how we can further improve and tailor the service.	N/A	Lack of funding to implement more complex measures.
5 (ad pla mea: 10	n Scotland sure Vehicle	ral Traffic management	Ongoing	East Central Scotland Vehicle Emissions Partnership	In Progress	Received funding from Scottish Government.	Set up regular meetings/contact. Plan work for the next reporting year. Strategise where best to focus resource.	Met with partnership lead to discuss and plan work for the coming year.	Lack of funding to implement more complex measures.

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.

East Lothian Council undertook automatic (continuous) monitoring at one site during 2024. Table B.1 in Appendix B: Monitoring Results shows the details of the sites. National monitoring results are available on the <u>Scottish Air Quality Website</u>.

Maps showing the location of the monitoring sites are provided in Appendix A: Monitoring Sites and AQMA Maps. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix D: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

3.1.2 Non-Automatic Monitoring Sites

East Lothian Council undertook non-automatic (passive) monitoring of NO₂ at 25 sites during 2024. Table B.2 in Appendix B: Monitoring Results shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix A: Monitoring Sites and AQMA Maps. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix D: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

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 B.3 in Appendix B: Monitoring Results compares the ratified monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 μg/m³ at automatic monitoring sites.

Table B.4 in Appendix B: Monitoring Results compares the adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 μ g/m³ at non automatic monitoring sites.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix C: Full Monthly Diffusion Tube Results for 2024.

Table B.5 in Appendix B: Monitoring Results compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of 200 µg/m³, not to be exceeded more than 18 times per year.

In 2024, there was a decrease in the annual mean concentration of NO₂ at all diffusion tube locations compared to the previous year. This trend is confirmed by East Lothian's automatic monitoring station (located in Musselburgh) which recorded an annual mean NO₂ concentration of 10.8 μ g/m³ in 2024 compared to 17.1 μ g/m³ in 2023 (AQO for NO₂ is 40 μ g/m³). There were also no exceedances of the 1-hour NO₂ objective at our automatic monitoring location.

3.2.2 Particulate Matter (PM₁₀)

Table B.6 in Appendix B: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18 $\mu g/m^3$.

Table B.7 in Appendix B: Monitoring Results compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50 µg/m³, not to be exceeded more than seven times per year.

The annual mean for PM10 was 11.4µg/m³ in 2024 which is well below the 18µg/m³ AQO. There was one day where the 24-hour mean of 50µg/m³ was exceeded for PM10, however, this is within the limit of the allowed seven exceedances per year.

3.2.3 Particulate Matter (PM_{2.5})

Table B.8 in Appendix B: Monitoring Results compares the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years with the air quality objective of 10 µg/m³.

There was a decrease in the annual mean for PM2.5 from $6.9\mu g/m^3$ in 2023 to $6.4\mu g/m^3$ in 2024.

3.2.4 Sulphur Dioxide (SO₂)

East Lothian Council have phased out the monitoring of Sulphur Dioxide (SO2). The council will continue to review the monitoring of this pollutant as well as any potential new sources within East Lothian.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

East Lothian Council have phased out the monitoring of Carbon Monoxide, Lead and 1,3-Butadiene. The council will continue to review the monitoring of these pollutants and any potential new sources within East Lothian.

4 New Local Developments

4.1 Road Traffic Sources

Since the 2024 Annual Progress Report East Lothian Council can confirm that there are no new:

- Narrow, congested streets with residential properties close to the kerb
- Busy streets where people may spend one hour or more close to traffic
- Roads with a high flow of buses and/or HGVs
- Junctions
- New roads constructed or proposed
- Roads with significantly changed traffic flows
- Roads with new/ changed layout
- Bus or coach stations

4.2 Other Transport Sources

Since the 2024 Annual Progress Report East Lothian Council can confirm that there are no new:

- Airports
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure with 15m.
- Locations with a large number or movements of diesel locomotives, and potential long term relevant exposure within 30m.
- Ports for shipping

4.3 Industrial Sources

Since the 2024 Annual Progress Report East Lothian Council can confirm that there are no new:

• Industrial installations: new or proposed installations for which an air quality impact assessment has been carried out.

- Industrial installations: existing installations where emissions have increased substantially, or new relevant exposure has been introduced.
- Industrial installations: new or significantly changed installations with no previous air quality impact assessment.
- Major fuel storage depots storing petrol.
- Petrol stations.
- · Poultry farms.

East Lothian Council can confirm that a new petrol station has been built at Gladsmuir in the last reporting year.

4.4 Commercial and Domestic Sources

Since the 2024 Annual Progress Report East Lothian Council can confirm that there are no new:

- Biomass combustion plant individual installations.
- Areas where the combined impact of several biomass combustion sources may be relevant.
- Areas where domestic solid fuel burning may be relevant.
- Combined Heat and Power (CHP) plant.

4.5 New Developments with Fugitive or Uncontrolled Sources

Since the 2024 Annual Progress Report East Lothian Council can confirm that there are no new:

- · Landfill sites.
- Quarries.
- Unmade haulage roads on industrial sites.
- Waste transfer stations, etc.
- Other potential sources of fugitive particulate matter emissions.

5 Planning Applications

East Lothian Council can confirm that there have been no new consented major developments that would require an Air Quality Assessment since the 2024 Annual Progress Report.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The monitoring data for the period 1/01/2024 to 31/12/2024 indicates there were no exceedances of any AQO's in East Lothian. Concentrations of Nitrogen Dioxide (NO₂) within the AQMA are significantly below the Annual Mean AQO of $40\mu g/m3$ with an annual mean level of $10.8 \mu g/m^3$ in 2024 compared to $17.1 \mu g/m^3$ in 2023, in addition to a decrease in all concentrations recorded at diffusion tube locations within the AQMA. Furthermore, there have been no recorded exceedances of any AQOs relating to PM10 or PM2.5 concentrations in East Lothian during 2024.

6.2 Conclusions relating to New Local Developments

No new local developments are anticipated to have significant impact on local air quality that could result in any future breach of AQOs.

6.3 Proposed Actions

This report and monitoring results from 2024 confirm there are no exceedances of any AQOs for any pollutant during 2024 with the last exceedance recorded in 2016. Furthermore, the Detailed Assessment (Ref 1) confirms that future exceedances of the NO₂ annual mean AQO are unlikely.

As such, East Lothian Council sought permission from the Scottish Government to revoke the Musselburgh AQMA, which was granted in December 2022. East Lothian Council are in the process of carrying out a consultation exercise with relevant stakeholders to seek their comments on the proposed revocation of the AQMA. A draft Revocation Report will be available to consultees as part of the revocation process. It is anticipated that the revocation of the AQMA will be completed by the end of 2025.

Appendix A: Monitoring Sites and AQMA Maps

Figure 1: Map of Musselburgh AQMA





1:5000 06 July 2022

User: Colin Clark

Figure 2: Map of Automatic Monitoring Site in Musselburgh



Figure 3: Map of Non-Automatic Monitoring Sites in Musselburgh

Figure 4: Map of Non-Automatic Monitoring Sites in Wallyford

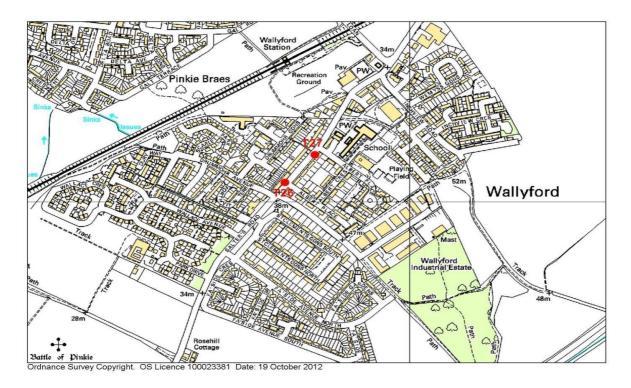


Figure 5: Map of Non-Automatic Monitoring Sites in Tranent

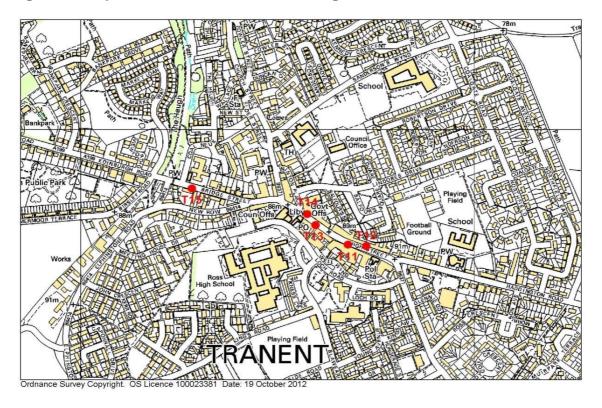


Figure 6: Map of Non-Automatic Monitoring Sites in Haddington

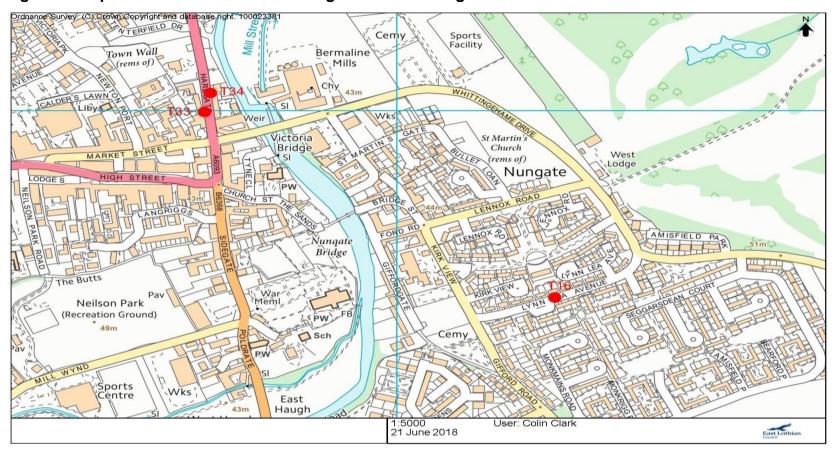
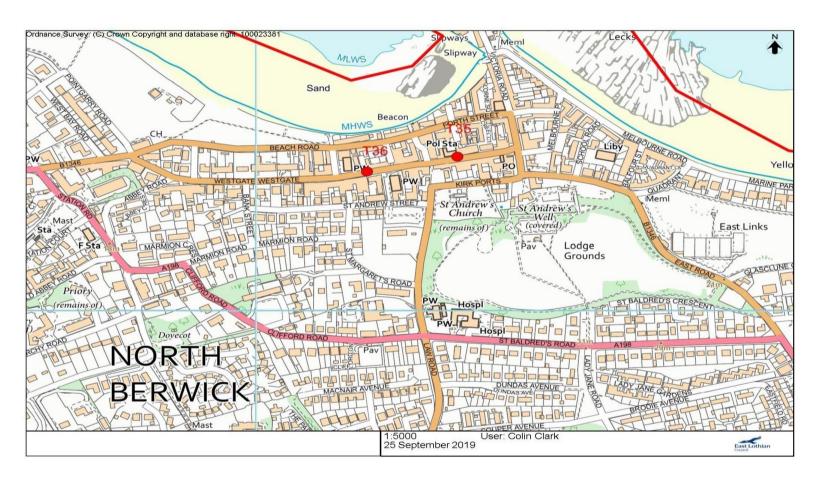


Figure 7: Map of Non-Automatic Monitoring Sites in North Berwick



Appendix B: Monitoring Results

Table B.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m)	Inlet Height (m)
NOx	Musselburgh North High Street – NO _x	Roadside	333941	672837	NO ₂	No	N/A	Gas Phase Chemiluminescent detection	5	3	1.5
PM ₁₀	Musselburgh North High Street - BAM	Roadside	333941	672837	PM ₁₀	No	N/A ET BAM1020 Beta- attenuation PM ₁₀ particulate analyser		5	3	1.5
PM _{2.5}	Musselburgh North High Street - PM _{2.5}	Roadside	333941	672837	PM _{2.5}	No	N/A	ET BAM1020 Beta attenuation PM _{2.5} particulate analyser	5	3	1.5

Notes:

- (1) 0m 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 B.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? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m)	Tube co- located with a Continuous Analyser?	Tube Height (m)
T1	Musselburgh - Newbigging/High Street Junction	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	15.0	2.0	No	3.0
T4	Musselburgh - 87 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	15.0	4.0	No	3.0
T6	Musselburgh - 147 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	15.0	2.0	No	3.0
Т7	Musselburgh - 183 High Street (Day Centre)	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	15.0	4.0	No	3.0
Т8	Musselburgh - Mall Avenue (Opposite tesco)	Roadside	334000	672000	NO ₂	No	20.0	3.0	No	3.0
T9	Musselburgh - 45 Bridge Street	Roadside	334000	672000	NO ₂	No	20.0	3.0	No	3.0
T10	Musselburgh - 150 North High Street	Roadside	333000	672000	NO ₂	No	25.0	4.0	No	3.0
T11	Tranent - 89 High Street	Roadside	340000	672000	NO ₂	No	3.0	4.0	No	3.0
T12	Tranent - 82 High Street (Opposite chip shop)	Roadside	340000	672000	NO ₂	No	3.0	4.0	No	3.0
T13	Tranent - 55 High Street	Roadside	340000	672000	NO ₂	No	3.0	3.0	No	3.0
T14	Tranent - 26 High Street - opposite Post office	Roadside	340000	672000	NO ₂	No	4.0	3.0	No	3.0
T15	Tranent - 58 Bridge Street	Roadside	340000	672000	NO ₂	No	4.0	3.0	No	3.0
T16	Haddington - Lynlea	Urban Background	352000	673000	NO ₂	No	2.0	2.0	No	3.0
T23, T24, T25	Musselburgh 133 North High Street - Co-located	Roadside	333000	672000	NO ₂	No	5.0	3.0	Yes	1.5
T26	Wallyford - 116 Salters Road	Roadside	336000	672000	NO ₂	No	5.0	3.0	No	3.0
T27	Wallyford - 71 Salters Road	Roadside	336000	672000	NO ₂	No	5.0	3.0	No	3.0
T28	Musselburgh - 15 Bridge Strreet	Roadside	334000	672000	NO ₂	No	5.0	2.0	No	3.0

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m)	Tube co- located with a Continuous Analyser?	Tube Height (m)
T29	Musselburgh - 167 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	5.0	2.0	No	3.0
T30	Musselburgh - 137 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	5.0	3.0	No	3.0
T31	Musselburgh - 69 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	5.0	3.0	No	3.0
T32	Musselburgh - 86 High Street	Roadside	334000	672000	NO ₂	Yes - Musselburgh AQMA	5.0	3.0	No	3.0
T33	Haddington - 23 Hardgate	Roadside	351000	673000	NO ₂	No	5.0	3.0	No	3.0
T34	Haddington - 2 Bothwell Bank, Hardgate	Roadside	351000	674000	NO ₂	No	5.0	3.0	No	3.0
T35	North Berwick - Police Station, High St	Roadside	355000	685000	NO ₂	No	5.0	2.0	No	3.0
T36	North Berwick - 108 High Street	Roadside	355000	685000	NO ₂	No	5.0	2.0	No	3.0

- (1) 0m 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 B.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (μg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
NO ₂	333941	672837	Roadside	84.3	84.3	15	16	14.5	17.1	10.8

Exceedances of the NO₂ annual mean objective of 40 µg/m³ are shown in bold.

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

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix D for details.

- (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%).

Table B.4 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
T1	334000	672000	Roadside	100.0	100.0	16.0	19.0	20.1	19.9	15.3
T4	334000	672000	Roadside	90.6	90.6	13.0	19.0	16.5	16.2	14.9
T6	334000	672000	Roadside	90.6	90.6	19.0	26.0	24.3	26.5	20.3
T7	334000	672000	Roadside	100.0	100.0	1.0	25.0	24.4	27.5	19.2
T8	334000	672000	Roadside	100.0	100.0	14.0	20.0	19.8	18.8	14.3
Т9	334000	672000	Roadside	100.0	100.0	12.0	19.0	15.3	18.2	12.5
T10	333000	672000	Roadside	100.0	100.0	19.0	21.0	16.9	19.4	16.1
T11	340000	672000	Roadside	100.0	100.0	17.0	23.0	23.7	21.0	15.7
T12	340000	672000	Roadside	92.5	92.5	15.0	21.0	20.7	20.6	14.5
T13	340000	672000	Roadside	100.0	100.0	15.0	20.0	19.6	19.6	14.2
T14	340000	672000	Roadside	92.5	92.5	11.0	17.0	16.1	17.0	11.8
T15	340000	672000	Roadside	100.0	100.0	11.0	14.0	12.6	12.8	10.2
T16	352000	673000	Urban Background	75.0	75.0	4.0	6.0	5.2	5.2	3.8
T23, T24, T25	333000	672000	Roadside	100.0	100.0	11.0	17.0	14.1	15.0	11.3
T26	336000	672000	Roadside	100.0	100.0	14.0	19.0	16.2	15.5	11.3
T27	336000	672000	Roadside	100.0	100.0	10.0	18.0	16.2	14.9	11.1
T28	334000	672000	Roadside	100.0	100.0	12.0	19.0	17.0	19.1	14.0
T29	334000	672000	Roadside	100.0	100.0	19.0	28.0	26.4	27.6	21.6
T30	334000	672000	Roadside	100.0	100.0	15.0	21.0	19.0	19.5	14.0
T31	334000	672000	Roadside	83.0	83.0	18.0	30.0	31.1	32.7	23.2
T32	334000	672000	Roadside	100.0	100.0	27.0	2.0	21.4	22.9	15.9
T33	351000	673000	Roadside	100.0	100.0	11.0	15.0	14.1	14.2	10.7
T34	351000	674000	Roadside	100.0	100.0	8.0	10.0	8.9	9.7	7.3
T35	355000	685000	Roadside	100.0	100.0	9.0	9.0	7.5	7.4	6.1
T36	355000	685000	Roadside	100.0	100.0	6.0	9.0	7.9	7.8	6.2

[☑] Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

[☑] Diffusion tube data has been bias adjusted.

Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.

Notes:

Exceedances of the NO₂ annual mean objective of 40 µg/m³ are shown in bold.

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

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG(22) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

- (3) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (4) 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%).

Table B.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200 μg/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
NO ₂	333941	672837	Roadside	84.3	84.3	0	0	0	0	0(55.8)

Exceedances of the NO₂ 1-hour mean objective (200 µg/m³ not to be exceeded more than 18 times/year) are shown in bold. If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

- (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%).

Table B.6 – Annual Mean PM₁₀ Monitoring Results (μg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%)	2020	2021	2022	2023	2024
PM ₁₀	333941	672837	Roadside	89	89	9.9	10.0	12.7	10.3	11.4

Exceedances of the PM₁₀ annual mean objective of 18 μg/m³ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix D for details.

- (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%).

Table B.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50 μ g/m³

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%)	2020	2021	2022	2023	2024
PM ₁₀	333941	672837	Roadside	89	89	0(23.2)	0	1(29.4)	0	1

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ not to be exceeded more than seven times/year) are shown in bold. If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

- (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%).

Table B.8 – Annual Mean PM_{2.5} Monitoring Results (μg/m³)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
PM _{2.5}	333941	672837	Roadside	93	93	N/A	N/A	7.2	6.9	6.4

Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

- (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%).

Appendix C: Full Monthly Diffusion Tube Results for 2024

Table C.1 - NO₂ 2024 Monthly Diffusion Tube Results (μg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(0.83)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
T1	334000	672000	24.0	19.0	15.0	12.0	17.0	15.0	17.0	14.0	15.0	18.0	22.0	33.0	18.4	15.3	•	
T4	334000	672000	20.0	20.0	16.0	12.0		17.0	15.0	15.0	17.0	18.0	26.0	22.0	18.0	14.9		
T6	334000	672000	30.0	23.0	22.0	23.0		23.0	21.0	19.0	27.0	26.0	29.0	26.0	24.5	20.3		
T7	334000	672000	17.0	22.0	21.0	23.0	30.0	21.0	23.0	18.0	25.0	24.0	31.0	22.0	23.1	19.2		
T8	334000	672000	19.0	17.0	11.0	15.0	17.0	12.0	11.0	14.0	15.0	19.0	31.0	26.0	17.3	14.3		
T9	334000	672000	21.0	17.0	18.0	13.0	16.0	12.0	12.0	10.0	3.0	19.0	23.0	16.0	15.0	12.5		
T10	333000	672000	23.0	20.0	17.0	18.0	19.0	15.0	15.0	15.0	16.0	23.0	28.0	24.0	19.4	16.1		
T11	340000	672000	22.0	23.0	21.0	15.0	20.0	17.0	13.0	17.0	18.0	19.0	23.0	19.0	18.9	15.7		
T12	340000	672000	26.0	17.0	25.0	18.0	22.0	16.0	12.0	8.0		15.0	19.0	14.0	17.5	14.5		
T13	340000	672000	20.0	17.0	17.0	13.0	20.0	15.0	13.0	14.0	15.0	18.0	22.0	22.0	17.2	14.2		
T14	340000	672000	15.0	13.0	19.0	15.0	22.0	12.0	9.0	5.0		13.0	18.0	15.0	14.2	11.8		
T15	340000	672000	14.0	11.0	16.0	10.0	13.0	9.0	11.0	10.0	3.0	12.0	16.0	23.0	12.3	10.2		
T16	352000	673000	5.0	3.0	5.0	3.0		3.0		4.0	3.0		9.0	6.0	4.6	3.8		
T23	333000	672000	14.0	15.0	16.0	14.0	15.0	11.0	9.0	7.0	14.0	14.0	16.0	23.0	-	-		Triplicate Site with T23, T24 and T25 - Annual data provided for T25 only
T24	333000	672000	17.0	14.0	13.0	14.0	17.0	10.0	10.0	10.0	14.0	14.0	19.0	7.0	-	-		Triplicate Site with T23, T24 and T25 - Annual data provided for T25 only
T25	333000	672000	17.0	12.0	16.0	13.0	16.0	10.0	9.0	10.0	14.0	14.0	18.0	16.0	13.7	11.3		Triplicate Site with T23, T24 and T25 - Annual data provided for T25 only
T26	336000	672000	18.0	13.0	14.0	13.0	15.0	12.0	13.0	10.0	12.0	14.0	16.0	13.0	13.6	11.3		
T27	336000	672000	16.0	16.0	20.0	8.0	16.0	10.0	8.0	9.0	11.0	14.0	17.0	16.0	13.4	11.1		
T28	334000	672000	18.0	16.0	20.0	15.0	24.0	12.0	13.0	12.0	17.0	18.0	20.0	17.0	16.8	14.0		
T29	334000	672000	22.0	25.0	28.0	25.0	38.0	23.0	21.0	20.0	28.0	25.0	34.0	23.0	26.0	21.6		
T30	334000	672000	18.0	16.0	23.0	15.0	22.0	13.0	5.0	15.0	20.0	17.0	20.0	19.0	16.9	14.0		
T31	334000	672000	32.0	25.0	32.0	30.0			24.0	23.0	29.0	25.0	34.0	26.0	28.0	23.2		
T32	334000	672000	23.0	20.0	26.0	12.0	15.0	11.0	16.0	17.0	18.0	22.0	26.0	24.0	19.2	15.9		
T33	351000	673000	17.0	16.0	14.0	10.0	12.0	10.0	11.0	9.0	12.0	13.0	16.0	14.0	12.8	10.7		
T34	351000	674000	12.0	10.0	8.0	6.0	10.0	6.0	4.0	8.0	8.0	9.0	15.0	10.0	8.8	7.3		
T35	355000	685000	10.0	8.0	8.0	3.0	10.0	6.0	6.0	6.0	7.0	8.0	10.0	6.0	7.3	6.1		
T36	355000	685000	9.0	6.0	8.0	4.0	10.0	6.0	6.0	7.0	7.0	8.0	9.0	9.0	7.4	6.2		

[☑] All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1.

Notes:

[☑] Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

[☐] Local bias adjustment factor used.

[☑] National bias adjustment factor used.

[☑] Where applicable, data has been distance corrected for relevant exposure in the final column.

[☑] East Lothian Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Exceedances of the NO_2 annual mean objective of 40 $\mu g/m^3$ are shown in **bold**.

 NO_2 annual means exceeding 60 μ g/m³, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**. See Appendix C for details on bias adjustment and annualisation.

Please see screenshot below of National Bias Adjustment Factor Spreadsheet.

National Diffusion Tube	Bias Adjust	tment F	acto	or Spreadsheet			Spreadsheet Version Number: 04/25			er: 04/25
Follow the steps below in the correct order to Data only apply to tubes exposed monthly and Whenever presenting adjusted data, you should This spreadsheet will be updated every few months.	are not suitable for co	rrecting individual	dual sh	ort-term monitoring periods version of the spreadsheet	eir immediato	e use.		at t	readsheet w he end of Ju	
The LAQM Helpdesk is operated on behalf of Defra ar and the National Physical Laboratory.	nd the Devolved Administ	rations by Burea	u Verita			et maintained by y Air Quality Cor		hysical La	aboratory. O	riginal
Step 1:	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	Wher	e there is only one study for a chosen combi more than one study, use the		_				Vhere there is
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 ²	lf yo	u have your own co-location study then see footn LAQMHel		ain what to do then auveritas.com or 08		Air Quality	Management	Helpdesk at
Analysed By ¹ -▼	Method To undo your selection, shoose (All) from the pop-up list	Year ⁵ To undo your selection, choose (All)	Length of Diπusion Tube Monitor Mean Tube Δdjustm							
Edinburgh Scientific Services	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	11	41	36	16.8%	Р	0.86
Edinburgh Scientific Services	50% TEA in acetone	2024	R	Sirling Council	12	17	14	23.1%	G	0.81
Edinburgh Scientific Services	50% TEA in acetone	2024		Overall Factor ³ (2 studies)					Use	0.83

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

New or Changed Sources Identified Within East Lothian During 2024

East Lothian Council has not identified any new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by East Lothian During 2024

East Lothian Council are in the process of carrying out a consultation exercise with relevant stakeholders to seek their comments on the proposed revocation of the AQMA. A draft Revocation Report will be available to consultees as part of the revocation process. It is anticipated that the revocation of the AQMA will be completed by the end of 2025.

QA/QC of Diffusion Tube Monitoring

Diffusion tubes for East Lothian Council were analysed during 2024 by Edinburgh Scientific Services. The method of preparation is 50% TEA in acetone.

AIR-PT combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme.

The AIR PT scheme uses laboratory spiked Palmes type diffusion tubes to test each participating laboratory's analytical performance on a quarterly basis and continues the format used in the preceding WASP PT scheme.

The summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme (AIR PTAR063 April– June 2024) reported that 100% of results submitted by Edinburgh Scientific Services were satisfactory (References).

The monitoring has been completed in adherence with the 2024 Diffusion Tube Monitoring Calendar.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within East Lothian recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

East Lothian Council have applied a national bias adjustment factor of 0.83 to the 2024 monitoring data. A summary of bias adjustment factors used by East Lothian Council over the past five years is presented in **Error! Reference source not found.**.

The national factor was used over the local bias adjustment factor of 0.85 due to poor overall precision and data capture from East Lothian's co-location study. However, the similarity in the local and national values highlight that similar results would have been attained using each of the said values.

The national value used was taken from April 2025 National Spreadsheet Bias Adjustment Factor Database. There were two studies applicable to this factor.

Table D. 1 - Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.83
2023	Local	-	0.99
2022	Local	-	0.91
2021	Local	-	1.00
2020	National	09/19	0.88

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within East Lothian required distance correction during 2024.

QA/QC of Automatic Monitoring

Data management of the automatic monitoring site is carried out by Ricardo Energy and Environment on behalf on the Scottish Government. Local Site Operator (LSO) duties are

carried about by East Lothian Council, where the automatic monitors are calibrated monthly and are audited/serviced through our service and maintenance contract with Enviro Technology. Data is ratified by Ricardo Energy and Environment on behalf of the Scottish Government. All data provided in this report has been ratified and a summary of all ratified data for 2024 is available through the Scottish Air Quality Database Annual Report. Live data is available from the Scottish Air Quality Website.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of PM₁₀ and PM_{2.5} monitors utilised within East Lothian Council do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within East Lothian Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within East Lothian required distance correction during 2024.

Table D.1 - Local Bias Adjustment Calculations

	Local Bias Adjustment Input 1	Local Bias Adjustment Input 2	Local Bias Adjustment Input 3	Local Bias Adjustment Input 4	Local Bias Adjustment Input 5
Periods used to calculate bias	8				
Bias Factor A	0.85 (0.75 – 0.97) >				
Bias Factor B	18% (3% - 33%)				
Diffusion Tube Mean (µg/m³)	13				
Mean CV (Precision)	6.3%				
Automatic Mean (µg/m³)	11				
Data Capture	83%				
Adjusted Tube Mean (µg/m³)	11 10 – 13				

The national bias adjustment factor was used instead of the local bias adjustment factor due to poor overall diffusion tube precision (i.e. CV > 10%) and poor overall continuous monitor data capture (i.e. < 90%).

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	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
DT	Diffusion Tube
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NOx	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

- East Lothian Council, Detailed Assessment of Musselburgh AQMA, 2022. Available at:
 - https://www.eastlothian.gov.uk/downloads/file/33067/detailed_assessment_of_mus_selburgh_aqma_2022
- East Lothian Council, Air Quality Action Plan, 2017. Available at: https://www.eastlothian.gov.uk/downloads/file/23473/air_quality_action_plan_2017
- LAQM Helpdesk, Summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme, 2025. Available at: https://laqm.defra.gov.uk/wpcontent/uploads/2025/04/AIR-PT-Rounds-55-to-68-January-2023-to-February-2025.pdf