



Annual Progress Report (APR)

2019 Air Quality Annual Progress Report (APR) for
Scottish Borders Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

28 June 2019

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|--------------------------------|---|
| Local Authority Officer | Forbes Shepherd |
| Department | Regulatory Services |
| Address | Council HQ Bowden Road Newtown St Boswells MELROSE TD6 0SA |
| Telephone | 0300 100 1800 |
| E-mail | fshepherd@scotborders.gov.uk |
| Report Reference number | SBC/PR/2019 |
| Date | 28 June 2019 |

Executive Summary: Air Quality in Our Area

Air Quality in the Scottish Borders

Scottish Borders Council undertakes a program of Air Quality Assessment in accordance with the Guidance produced by the UK Government and Devolved Administrations⁽¹⁾⁽²⁾. Reports have been produced annually on a rolling program. Earlier rounds of review and assessment have shown that the main industrial pollutants are unlikely to exceed the UK Air Quality Objectives at any location within the Council's area and that only NO₂ from road traffic and PM₁₀ from domestic fuel consumption still required to be considered.

Subsequent work⁽²⁾ has indicated that there were no areas in the Borders at risk of exceeding any of the listed pollutants.

The new data and information collected for this report confirms the conclusions of previous reports and that a Detailed Assessment is not required for any pollutant.

Actions to Improve Air Quality

Scottish Borders Council is not currently engaged in any active air quality initiatives other than ongoing monitoring.

Local Priorities and Challenges

Scottish Borders Council has no specific priorities or challenges for the coming year beyond the statutory monitoring and reporting requirements.

How to Get Involved

Scottish Borders Council is in the process of finalising a web page dedicated to air quality matters. Work on this project has included the digitising of Smoke Control Area maps and a general update on air pollution advice for the Public.

This will provide information to members of the public on statutory and non-statutory air quality issues.

Contact details will be provided for persons who require further advice and information.

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1. Local Air Quality Management

This report provides an overview of air quality in the Scottish Borders Council area 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 Scottish Borders Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

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

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

2. Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective.

Scottish Borders Council currently does not have any AQMAs and does not propose to declare a new AQMA at this time.

2.2 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 Scottish Borders Council against relevant actions within this strategy is demonstrated below.

2.2.1 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. Scottish Borders Council has produced a Local Access and Transport Strategy.

This document is available at

https://www.scotborders.gov.uk/site/scripts/google_results.php?q=air+quality+strategy

2.2.2 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. Scottish Borders Council has Low Carbon Strategy which is available at

https://www.scotborders.gov.uk/download/downloads/id/1668/scottish_borders_low_carbon_economic_strategy.pdf

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

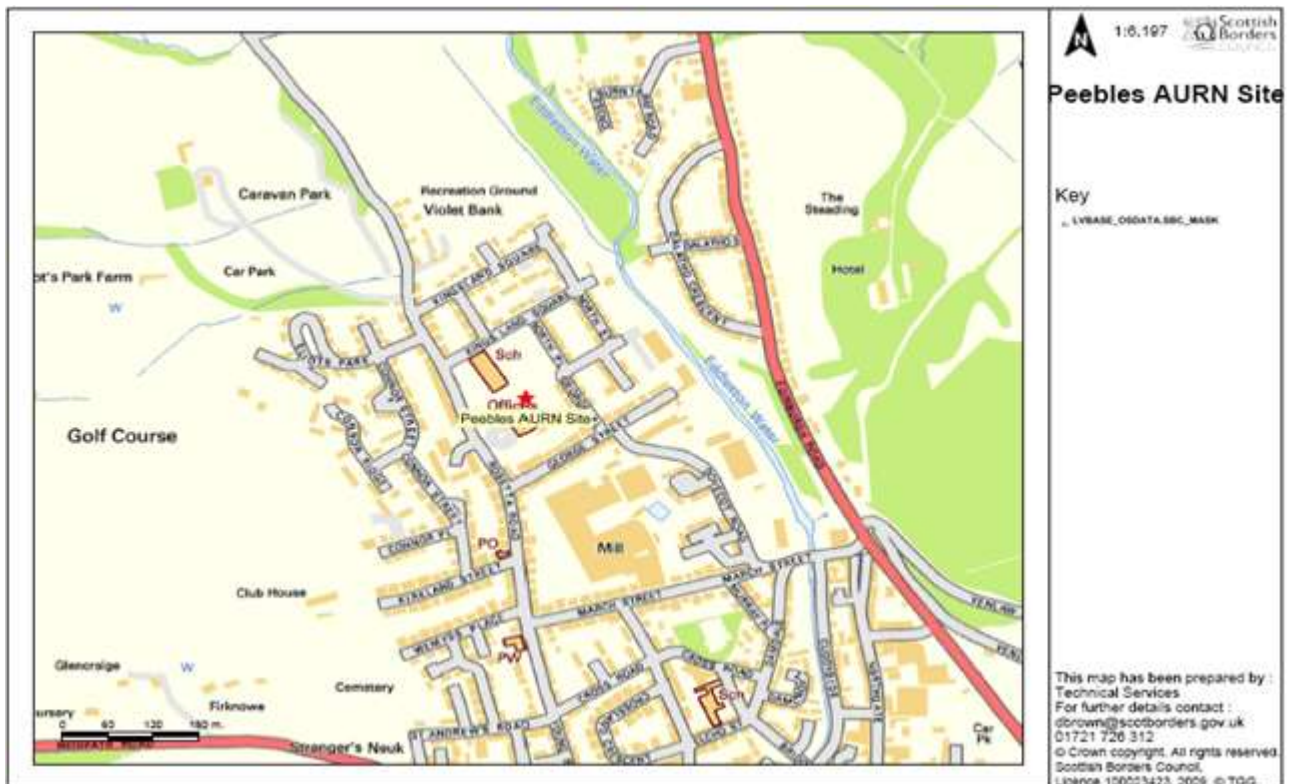
3.1 Summary of Monitoring Undertaken

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.

Scottish Borders Council undertook automatic (continuous) monitoring at one site during 2018. Table A.1 in Appendix A shows the details of the site. National monitoring results are available at <http://www.scottishairquality.co.uk/>.

A map showing the location of the monitoring site is provided in Figure 1 below.



Details on how the monitor is calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Scottish Borders Council undertook non-automatic (passive) monitoring of NO₂ at four sites during 2017. This is a reduction from 14 sites in 2016 as results from 10 other monitoring sites in Hawick and Galashiels indicated that there was no longer a risk of exceedance of the AQ limits.

Table A.2 in Appendix A shows the details of all the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. 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.

For diffusion tubes, the full 2018 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. No exceedances have been identified at any monitoring site.

3.2.2 Particulate Matter (PM₁₀)

Previous rounds of Review and Assessment have indicated that no site in the Scottish Borders is at risk of exceeding the air quality objectives for particulate matter.

3.2.3 Particulate Matter (PM_{2.5})

Using data from the maps produced by Air Quality Scotland⁽³⁾ and applying the adjustment factor detailed at 7.109 in TG(16)⁽⁴⁾, no areas within the Council's boundaries are predicted to exceed the objective for PM_{2.5}.

Scottish Borders Council therefore has no plans to undertake monitoring for this pollutant.

3.2.4 Sulphur Dioxide (SO₂)

Previous rounds of Review and Assessment have indicated that no site in the Scottish Borders is at risk of exceeding the air quality objectives for sulphur dioxide.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Previous rounds of Review and Assessment have indicated that no site in the Scottish Borders is at risk of exceeding the air quality objectives for Carbon Monoxide, Lead and 1,3-Butadiene.

4. New Local Developments

The Borders Railway is now in operation, running from Tweedbank to Edinburgh. Examination of the railway and consultation with SEPA has indicated that this development is not likely to impact on local air quality.

No other new developments which might impact on local air quality have been identified.

4.1 Road Traffic Sources

No new road traffic sources have been identified.

4.2 Other Transport Sources

No new other traffic sources have been identified.

4.3 Industrial Sources

SEPA was consulted by Scottish Borders Council in relation to this information and confirmed that there are no new industrial developments that are likely to have a significant impacts on local air quality and no existing operations that have increased their emissions by more than 30%.

There was a substantial variation to PPC Part A Permit has been granted under section 6.9(a) of the PPC Regs. This permits the operator (Rear Roadend) to increase the number of bird places from 60,000 to 130,000 at Hallmanor Farm, Peebles, EH45 9JW. A new poultry rearing site at Hutton Barns near Allanton with bird places for 96,000 was permitted in August 2018. Both are less than the 400 000 unit criteria to warrant further screening.

In terms of Part A and B processes, there have been no changes to these operations in the Borders and therefore no significant impact (positively or negatively) on local air quality. No Part A or B processes which have ceased to operate in 2017.

No new petrol stations with an annual throughput of over 2000 cubic metres of petrol have been identified and there are no new mineral extraction processes in the Borders.

4.4 Commercial and Domestic Sources

There have been a number of Planning Applications in respect of new biomass stoves and boilers.

These have been screened using the approved Screening Tool and none have been identified as impacting adversely on local air quality.

4.5 New Developments with Fugitive or Uncontrolled Sources

In August 2017, Scottish Borders Council received an application for the construction of a waste transfer station in Galashiels. The development is to replace the existing landfill facility with waste from the central Borders area being directed to the proposed site for sorting before being distributed to and disposed of at landfill sites or recycling facilities elsewhere.

The development was given approval in November 2017. This will be a SEPA regulated site under Waste Management Licensing regulations. Environmental Health did request further information regarding dust suppression measures. SEPA requested further information regarding stack heights and it is expected that the facility will meet licensing requirements when it becomes operational.

Further screening may need to be undertaken by Scottish Borders Council once the plant becomes operational.

5. Planning Applications

No other major Planning Applications have been identified which may impact on local air quality.

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The monitoring undertaken by Scottish Borders Council has not identified any potential or actual exceedances of the Air Quality Objectives at any relevant locations.

6.2 Conclusions relating to New Local Developments

Scottish Borders Council has identified the proposed waste transfer station in Galashiels as a new local development that may require further screening in relation to fugitive emissions.

6.3 Proposed Actions

The new monitoring data collected by Scottish Borders Council during the year has not identified the need to proceed to a Detailed Assessment for any pollutant.

At the time of writing, the Council has not identified the need to undertake any additional monitoring.

Review and assessment work will continue towards production of the Council's next Report in 2020.

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 | Peebles | Urban background | 324812 | 641083 | O ₃ / NO ₂ | N | UV Absorption/ Chemiluminescent | 5 | N/A | 2.8 |

(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? |
|---------|-------------------------------------|-----------|---------------|---------------|----------------------|----------|--|---|---|
| DT11 | Rogerson's High St Galashiels | Kerbside | 349063 | 636287 | NO ₂ | N | 1 | 1.5 | N |
| DT12 | Border Angling, High St, Galashiels | Kerbside | 348976 | 636371 | NO ₂ | N | 1 | 1.5 | N |
| DT13 | Edingtons, High St, Galashiels | Kerbside | 348982 | 636384 | NO ₂ | N | 1 | 1.5 | N |
| DT14 | Iceland, High St, Galashiels | Kerbside | 349063 | 636272 | NO ₂ | N | 1 | 1.5 | 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 2018 (%) ⁽²⁾ | NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|---------|------------------|-----------------|---|--|---|------|------|------|------|
| | | | | | 2014 | 2015 | 2016 | 2017 | 2018 |
| CM1 | Urban Background | Automatic | | | | | | | |
| DT11 | Kerbside | Diffusion Tube | 100 | 100 | 19 | 17 | 19 | 17 | 18 |
| DT12 | Kerbside | Diffusion Tube | 100 | 100 | 25 | 22 | 23 | 22 | 19 |
| DT13 | Kerbside | Diffusion Tube | 100 | 100 | 23 | 20 | 22 | 18 | 22 |
| DT14 | Kerbside | Diffusion Tube | 100 | 100 | 25 | 23 | 23 | 24 | 26 |

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

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance 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⁾ | | | | |
|---------|------------------|-----------------|---|--|--|------|------|------|------|
| | | | | | 2014 | 2015 | 2016 | 2017 | 2018 |
| CM1 | Urban Background | Automatic | NA | 99.14 | 0 | 0 | 0 | 0 | 0 |

Notes: Exceedances 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.

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⁾ | |
| | DT11 | 24.1 | 23.5 | 19.9 | 21.6 | 16.2 | 17.0 | 15.3 | 11.9 | 13.6 | 20.9 | 21.9 | | | 21.0 |
| DT12 | 26.0 | 36.0 | 34.4 | 23.9 | 19.1 | 23.0 | 22.3 | 20.8 | 20.7 | 26.9 | 30.4 | 29.2 | 20 | 19 | |
| DT13 | 18.6 | 18.4 | 34.4 | 25.9 | 19.5 | 23.4 | 20.7 | 16.0 | 16.7 | 24.9 | 31.6 | 26.0 | 23 | 22 | |
| DT14 | 31.5 | 37.3 | 33.7 | 25.4 | 23.6 | 24.5 | 22.9 | 20.3 | 21.3 | 24.0 | 30.5 | 25.4 | 27 | 26 | |

(1) See Appendix C for details on bias adjustment

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

QA/QC of Automatic Monitoring Station

The QA/QC work on the Peebles site is carried out under the auspices of the Automatic Urban and Rural Network (AURN) system. Routine calibrations are undertaken every four weeks by Council Staff as Local Site Operatives.

Data validation and ratification is undertaken by Bureau Veritas, Contractors appointed by DEFRA/Scottish Government.

Site audits are undertaken at regular intervals by AEA Technology and to date, and other than poor data capture in 2013, no overall issues have been identified.

QA/QC of non-automatic monitoring

QA/QC of diffusion tube monitoring

The laboratory used during 2018 for the Council's diffusion tube monitoring data follows the procedures set out in the Harmonisation Practical Guidance as recommended in LAQM.TG(09).

All diffusion tubes used by the Council are mounted and handled in accordance with the guidance contained in LAQM TG(09). Sites have been selected in consultation with the Scottish Government and SEPA to be representative of human exposure.

Tubes are exposed for periods in accordance with the published annual calendar of exposure dates.

Diffusion Tube Bias Adjustment Factors

The Laboratory used for the analysis of the Council's diffusion tubes was Edinburgh Scientific Services.

The laboratory uses the analytical method of 50% TEA in Acetone.

Over the year, Edinburgh Scientific Services participated in one co-location study.

A bias adjustment figure of 0.96 has been used for the results of this laboratory. Spreadsheet v03/18/FINAL.

Diffusion Tube Bias Adjustment Factors

Bias and precision factors have been obtained from the spreadsheet tool v03/18/FINAL on the Review and Assessment website.

Factor from Local Co-location Studies (if available)

Scottish Borders Council has not carried out any co-location studies.

Discussion of Choice of Factor to Use

Not Applicable.

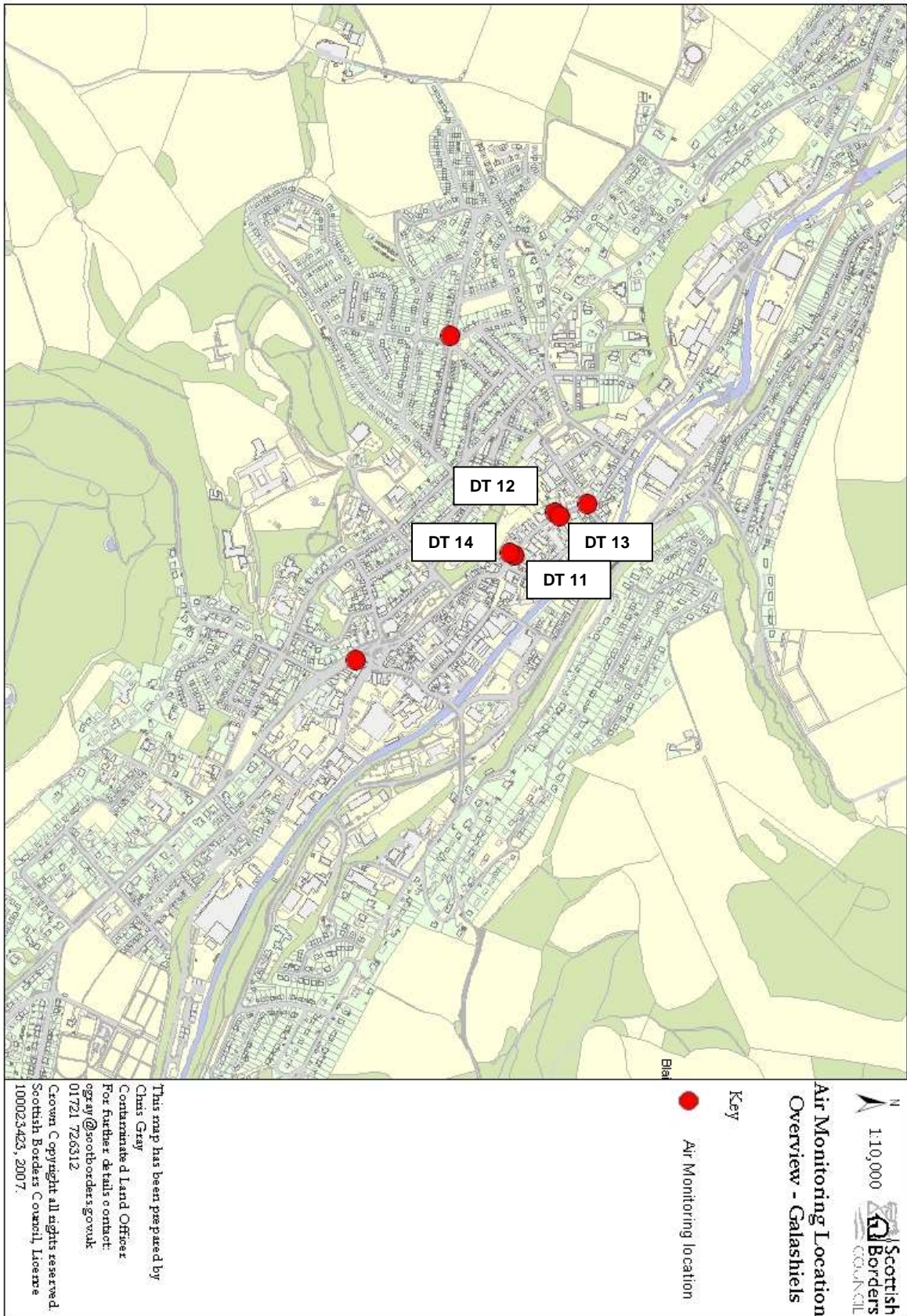
PM Monitoring Adjustment

Not Applicable.

Short-term to Long-term Data adjustment

Not Applicable.

Appendix D: Map of Diffusion Tube Sites



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

- 1). Local Air Quality Management Technical Guidance LAQM.TG(16)
- 2). 2015 Updating and Screening Assessment for Scottish Borders Council – SBC/USA/2015/1
- 3). <http://www.scottishairquality.co.uk/data/mapping?view=pm10>
- 4). Local Air Quality Management Technical Guidance LAQM.TG(16)
<http://laqm.defra.gov.uk/technical-guidance/>