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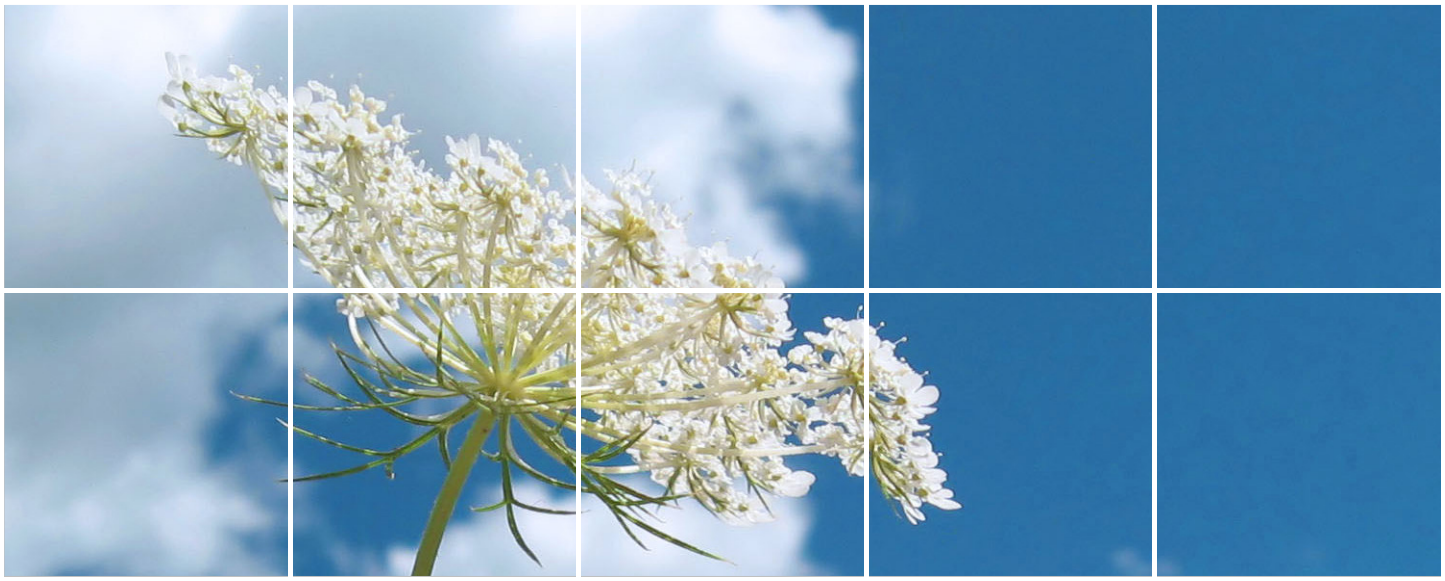

Air Quality Review and Assessment Progress Report for Scottish Borders Council 2008

Report to Scottish Borders Council

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Scottish Borders COUNCIL

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Executive summary

Scottish Borders Council has undertaken an Air Quality Assessment Programme under the strategic policy framework for air quality management published by the Scottish Government. Under this strategy, each local authority has to undertake an Updating and Screening Assessment (USA) to determine the progress of their local air quality management to date. A USA has to be submitted to the Scottish Government every three years and an annual progress report every other year until 2010.

Scottish Borders Councils USA 2006 and Progress Report 2007 concluded that the Air Quality Objectives for each of the pollutants were unlikely to be exceeded at any location in the district, and therefore a Detailed Assessment would not be required.

As part of their air quality monitoring programme, Scottish Borders Council monitors nitrogen dioxide (NO_2) using diffusion tubes at 19 different locations. Diffusion tube monitoring of NO_2 in 2007, at all sites has shown no exceedences of the NO_2 Objectives, with levels on average decreasing by 16%.

A yearlong PM_{10} monitoring programme commenced in June 2007 at Newcastleton following the Review of the 2003 Detailed Assessment. Data so far, has provided concentrations below the Scottish National Objectives for both annual and daily averages.

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

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1. Introduction

1.1 Description of the Scottish Borders Area

The Scottish Borders is located between Dumfries and Galloway in the west, South Lanarkshire and West Lothian in the north west, City of Edinburgh, East Lothian, Midlothian to the north; and the non-metropolitan counties of Northumberland and Cumbria in England to the south.

Geographically the region is hilly in the south, west and north, with the River Tweed flowing west to east through the region. The east of the region is primarily flat with isolated small groups of hills. The Tweed and its tributaries drain the entire region with the river flowing into the North Sea at Berwick-upon-Tweed, and forming the border with England for the last twenty miles or so of its length.

Parts of the area have historically been heavily industrialised, although much of this has now gone and the area as a whole is predominantly rural. The main routes through the area are the A1, A68, and A7, and the East Coast Mainline railway.

1.2 Purpose of the Progress Report

The provisions of Part IV of the Environment Act 1995[1] establish a national framework for air quality management, which requires all local authorities in England, Scotland and Wales to conduct local air quality reviews. Section 82 of the Act[1] requires these reviews to include an assessment of the current air quality in the area and the predicted air quality in future years. Should the reviews indicate that the standards prescribed in the The Air Quality Strategy for England, Scotland Wales and Northern Ireland[2] (AQS) will not be met, the local authority is required to designate an Air Quality Management Area (AQMA). Action must then be taken at a local level to ensure that air quality in the area improves. This process is known as 'Local Air Quality Management' (LAQM).

The Review and Assessment process has a three-year cycle with an Updating and Screening Assessment, followed by two Progress Reports. The annual Progress Report provides continuity of assessment between the 3-yearly Updating and Screening Assessments of local air quality.

This Progress Report has been prepared for Scottish Borders Council to comply with the LAQM system introduced in the Environment Act 1995. The report conforms to the Progress Report Guidance, LAQM.PRG(03)[3] the Policy Guidance, LAQM.PG(S)(03)[5] and Technical Guidance, LAQM TG(03)[4] issued under Section 88(1) of the Environment Act 1995. Pursuant to Section 88(2) of the Environment Act 1995 Scottish Borders Council and the author of this report have had due regard to the relevant guidance.

As outlined in LAQM.PRG(03), additional information should be included in the Progress Report, if relevant. This includes:

- Progress on implementation of action plans;
- An assessment of the monitoring data in relation to likely exceedences of the objectives;
- Progress on local air quality strategies
- A list of planning applications that have the potential to affect local air quality
- Progress on implementing those elements of the local transport strategy that might affect air quality; and
- Any relevant updates on planning policies that relate specifically to air quality.

Scottish Borders Council have not implemented any action plans or air quality strategies and have no new planning policies or planning applications that relate specifically to air quality. Hence, though considered, these topics have not been included in this Progress Report.

1.3 Air Quality Strategy Objectives

The AQS identifies eight ambient air pollutants that have the potential to cause harm to human health. These pollutants are associated with local air quality problems, with the exception of ozone, which is instead considered to be a regional problem.

The Air Quality Regulations set standards for the seven pollutants that are associated with local air quality. These objectives aim to reduce the health impacts of the pollutants to negligible levels.

Table 1: Objectives included in the Air Quality Regulations and Subsequent Amendments, for the purpose of Local Air Quality Management

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene			
All authorities	16.25 μg m^{-3}	running annual mean	31.12.2003
Authorities in England and Wales only	5.00 μg m^{-3}	annual mean	31.12.2010
Authorities in Scotland and Northern Ireland only	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			
Authorities in England, Wales and Northern Ireland only	10.0 mg m^{-3}	maximum daily running 8-hour mean	31.12.2003
Authorities in Scotland only	10.0 mg m^{-3}	running 8-hour mean	31.12.2003
Lead	0.5 μg m^{-3}	annual mean	31.12.2004
	0.25 μg m^{-3}	annual mean	31.12.2008
Nitrogen dioxide[a]	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
Particles (PM_{10}) (gravimetric)[b]			
All authorities	50 μg m^{-3} not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 μg m^{-3}	annual mean	31.12.2004
Authorities in Scotland only[c]	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
Sulphur dioxide	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

a. These objectives are provisional.
b. Measured using the European gravimetric transfer sampler or equivalent.
c. These 2010 Air Quality Objectives for PM_{10} apply in Scotland only, as set out in the Air Quality (Scotland) Amendment Regulations 2002.

In Scotland, the PM_{10} objectives for 2010 have been adopted into regulation and hence, assessment against these objectives is required. However, In England, Wales and Greater London the 2010 objectives for PM_{10} are not currently included in Regulations for the purpose of LAQM.

1.4 Summary of Conclusions of the 2006 Updating and Screening Assessment

The Scottish Borders Updating and Screening Assessment (USA) 2006[8] was performed for the seven UK criteria pollutants in the Scottish Borders Area. The aim was to determine whether there was the potential for exceedences of any of the Scottish and UK National Air Quality Objectives (stated in Table 1).

Results from this USA indicated that a Detailed Assessment would not be required for any of the seven pollutants assessed. None of the air quality objectives were likely to be breached within Scottish Borders area. There are no Local Air Quality Management Areas within the Scottish Borders Area.

1.5 Summary of Conclusions of the 2007 Progress Report

The Scottish Borders Progress Report 2007 concluded that though the Galasheils High Street site exceeded the national objective for NO_2 no further action was required. This conclusion was reached as additional sites near this location did not show exceedences; there was a gradual downward trend for NO_2 levels at this location; and the future introduction of the new A7 Inner Relief Road was expected to significantly reduce concentrations within Galasheils High Street.

2 Air Quality Monitoring

Prior to 2006 the air quality monitoring carried out by Scottish Borders consisted of 15 NO_2 Diffusion tubes situated around the district. The locations of these tubes can be seen in Table 2. During 2006, the number of NO_2 diffusion tubes locations was increased to 19, with the four new monitoring sites being introduced to assess the impact of the new A7 inner relief road at Galashiels. The locations of all sites are illustrated in Appendix 2.

The Diffusion Tubes used (which are 71mm long with an internal diameter of 11mm) are made up of two stainless steel gauzes at one end. These contain an absorbent to trap the pollutant to be measured, in the case of nitrogen dioxide the absorbent used is triethalamine, which converts the nitrogen dioxide to nitrate, and this is trapped in the steel gauze to be analysed later in the laboratory. The other end of the tube is left open to the atmosphere, facing down to earth to prevent any rain or dust entering the tube. To ensure that the tubes do not collect pollutant after leaving their site they are sealed before their journey to the laboratory.

The low cost of the tubes enables sampling at a number of points in an area of interest and this can be useful in highlighting 'hotspots' of high concentrations where more detailed studied may be required. However, with the low running costs and simplistic nature, and in line with recent studies, diffusion tubes are found to be less accurate than the automated monitoring. To overcome this inaccuracy a Bias Adjustment factor is applied.

As a result of the 2003 USA, a Detailed Assessment consisting of short-term continuous automatic monitoring was carried out during 2004/2005. The Pollutants monitored were NO_2 in Galashiels and SO_2 and PM10 in Newcastleton. From June 2007 to June 2008, continuous PM_{10} monitoring is being undertaken within Newcastleton following the Review of this Detailed Assessment.

Scottish Borders Council does not monitor the following AQS pollutants:

- Benzene
- 1,3 Butadiene
- Carbon Monoxide
- Lead
- Sulphur Dioxide

There are no existing or planned developments that are likely to result in any exceedences of these abovementioned pollutants. Furthermore, it was concluded in the Scottish Borders USA[8] that it is unlikely that any exceedences of the AQS objectives for any of these pollutants would occur and hence, no monitoring is required.

2.1 Quality Assurance and Quality Control

As outlined in Technical Guidance LAQM.TG(3)[4], it is important to employ adequate QA/QC procedures in order to ensure that the air quality monitoring data are reliable and credible. The following list outlines fundamental data requirements:

- Accuracy.
- Precision.
- Trace ability to national/international metrology standards.
- Long-term consistency.

The following section outlines the QA/QC procedures employed by South Yorkshire Trading Standards, who supply NO_2. diffusion tubes to Scottish Borders Council.

2.2.1 Bias Adjustment Factor

When using Diffusion Tube monitoring, co-location studies with Chemiluminescence automatic NO_2 analysers are carried out to determine the degree to which the diffusion tubes differ from the more accurate automated analysers. From these studies, a Bias Adjustment Factor is calculated and used to adjust the diffusion tube results, to give a more representative concentration.

Scottish Borders do not carry out a co-location study and have in turn used the bias adjustment factor of **0.84** provided by the Air Quality Review and Assessment Helpdesk Website[6], for their diffusion tube suppliers South Yorkshire Trading Standard. The value of 0.84 is the mean result of co-location studies in Barnsley, North Lincolnshire, Bournemouth and the AEA intercomparison sites in London. The 2007 figures stated in Table 2 are corrected using this bias factor (rounded up to the nearest μgm^{-3}**)**. From April 2008, Scottish Borders will be using Edinburgh City Analyst for their NO_2 diffusion tube supply and analysis.

2.2 Nitrogen Dioxide Monitoring

Table 2: Scottish Border Air Quality Sites NO_2 Concentrations

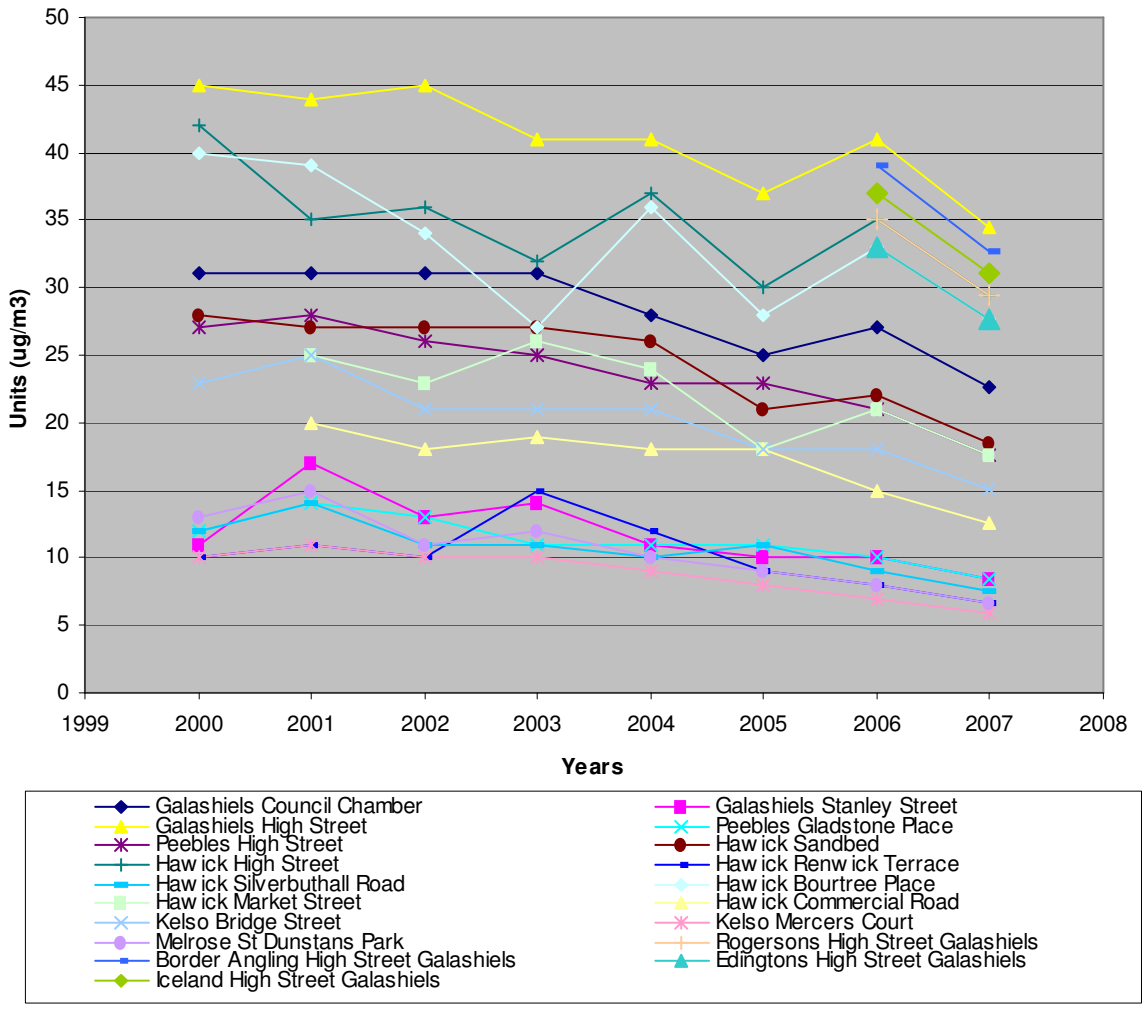
NO_2 Annual Mean Concentration (μgm^{-3})								
Site	**2003**	**2004**	**2005**	**2006**	**2007**	**% change between 2006 and 2007**	**2003 to 2007 mean**	**% change between 2003-2007 and 2007**
Galashiels City Chambers	31	28	25	27	22	-19	27	-19
Galashiels Stanley Street	14	11	10*	10*	8	-20	11	-27
Galashiels High Street	42	42	37	41	33	-20	39	-15
Peebles Gladstone Place	11	11	11	10	8	-20	10	-20
Peebles High Street	27	25	23	21	19	-10	22	-14
Hawick Sandbed	27	26	21	22	18	-18	23	-22
Hawick High Street	32	37	30	35	29	-17	33	-12
Hawick Renwick Terrace	15	12	9	8	7	-13	10	-30
Hawick Silverbuthall Road	11	10	11	9	8	-11	10	-20
Hawick Bourtree Place	27	36	28	33	28	-15	30	-7
Hawick Market Street	26	24	18	21	18	-14	21	-14
Hawick Commercial Road	19	18	18	15	12	-20	16	-25
Kelso Bridge Street	21	21	18	18	15	-17	19	-21
Kelso Mercers Court	10	9	8	7	6	-14	8	-25
Melrose St Dunstans Park	12	10	9	8	7	-13	9	-22
Rogersons High Street Galashiels				35#	29	-17	35	-17

NO_2 Annual Mean Concentration (μgm^{-3})								
Site	2003	2004	2005	2006	2007	% Change between 2006 and 2007	2003 – 2007 mean	% Change between 2003-2007 and 2007
Border Angling High Street Galashiels				39#	34	-13	40	-15
Edingtons High Street Galashiels				33#	26	-21	33	-21
Iceland, High Street Galashiels				37#	31	-16	38	-18

** indicates only 6 months of Data collected for that site.*
 # indicates only 9 months of data collected at that site.

The data obtained from the Scottish Borders sites (shown above in table 2) show a definite downward trend in NO_2 concentration levels from 2003 to 2007. This is further illustrated in Figure 1, where the downward trend extends back to the year 2000. This downward trend continued for all sites between 2006 and 2007. Compared to 2006 levels (where high NO_2 concentration were monitored throughout Scotland[10]) there was an average decrease of 16% across all Scottish Border sites.

Figure 1: Scottish Borders NO2 Annual Mean Concentrations



At Galasheils High Street site where 2006 concentrations where above the national objective of 40μg m^{-3}, levels have decreased by 20% to 33μg m^{-3}. This significant decrease within Galasheils town centre can be attributed to on going development of the new A7 Inner Relief Road. The four additional Galasheils High street sites installed in 2006 to monitor the effects of the new A7 Inner Relief Road also saw average decreases of 17%.

The last phases of the New A7 Inner Relief Road are still ongoing and are expected to be finished by March 2009. The Scheme was delayed by one year from the original schedule, due to land acquisition order issues. The A7 Inner Relief Road is designed to redirect the heavy traffic away from Galsheils High Street (currently part of the A7) in turn resulting in a reduction in NO_2 concentrations.

Due to the significant decrease in NO_2 concentrations throughout the Scottish Borders region, and in particular within Galasheils town centre, it recommended that no further action is required. However, it is recommended that the increased monitoring on Galashiels High Street should continue to show the continuing effect of the new road scheme being introduced.

2.3 PM_{10} Monitoring at Newcastleton

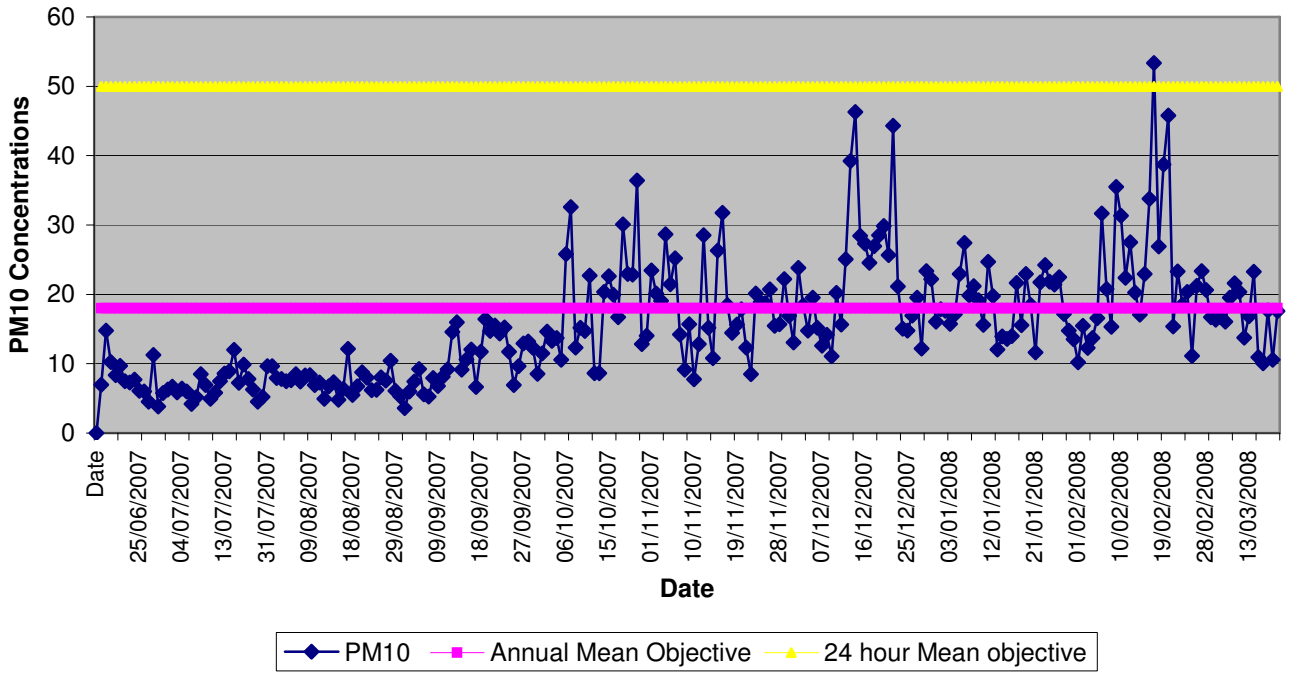
Following the Review of the 2003 Detailed Assessment, further PM_{10} monitoring in Newcastleton was requested by the Scottish Government to better assess concentrations in the area.

It was recommended that one years monitoring should be carried out using a Partisol Gravimetric PM_{10} Sampler, so as to provide a robust annual average concentration without the need for estimation based on cross referencing to other sites. The Partisol sampler was chosen due to it demonstrating equivalence to the EU reference method for PM_{10} monitoring and because of it being used at a number of Scottish Government sites. The filters being used at the Newcastleton Partisol are EMFAB Filters.

The location of the Partisol sampler is situated on Henry Street, Newcastleton. This site was chosen after modelling carried out identified this area to be susceptible to the highest PM_{10} concentrations in the year 2010 (refer to Appendix 3)[11].

Figure 3 illustrates the ratified daily PM_{10} concentrations (μgm^{-3}) collected between 17th June 2007 and 19th March 2008. The data collated so far shows the annual mean concentration for PM_{10} in Newcastleton to be **15.6µgm^{-3}**, under the National Objective of **18µgm^{-3}**. The 24 hourly mean objective of **50µgm^{3}** has been exceeded once (53.4μgm^{-3} on the 17th February 2008) over the period monitored so far. It is anticipated that the National Objective of 7 exceedences for the 24 hour mean will not be breached for the remainder of the monitoring period. However, as the monitoring has not yet been complete conclusions cannot yet be made to whether further action is required.

Figure 3: Newcastleton PM10 Concentrations (ugm-3) 2007 - 08



3 New Developments

The LAQM.PRG (03)[5] progress report guidance lists three categories of new developments that may affect air quality and thus should be assessed in the progress report. The three categories are:

- new industrial developments (PPC Part A, or Part B processes);
- new commercial, residential, transport or amenity developments likely to have an impact on air quality which have been granted planning permission; and
- new landfill or quarry locations with relevant public exposure.

The Environmental Protection UK (formerly NSCA) provides further guidance on the type of new commercial, residential, transport or amenity developments that are likely to cause significant impacts on local air quality. This guidance suggests that developments that should be considered for air quality impacts are those resulting in:

- increased congestion;
- a > 5% change in traffic flow;
- a >10kph change in vehicle speed;
- any road with greater than 10,000 vehicles per day;
- altering traffic composition (e.g. bus stations, HGV parks or increased delivery traffic from a retail distribution centre);
- new car parking facilities (>300 spaces), lorry or coach parks; and
- developments located close to sensitive ecological sites or within areas known to be of poor air quality. (Examples include construction of new residential properties close to a major road
  or within an AQMA, or developments within or near to designated environmental sites e.g. SSSIs).

These guidelines are also used to determine and assess new developments within Scottish Borders that could affect air quality.

3.1 New Industrial Developments

The following industrial developments have taken place within the Scottish Borders District:

Dalkia, a company that provides facility and energy management services, has shown an increase in NO_2 production of approximately 30%. However, the total generated from the company is still relatively small, just over 20 tonnes per annum, and well below the reporting threshold of just over 110 tonnes per annum[12].

The only other developments that have taken place during 2007 was the closure of the following Part B Processes:

- PPC/B/1005042 – Innerleithen Garage (PVR)
- PPC/B/1014894 – Jetharts Dry Cleaners, Jedburgh
- PPC/B/1003247 – Stanley Brash (mobile crushing plant)

3.2 New Transport, Commercial and Residential Developments.

There have been no new Commercial or Residential Developments during 2007. The Transport developments for 2007 are as follows.

3.2.1 A7 Inner Relief Road

The Inner relief road is part of a £12 million road scheme aimed at reducing congestion within Galashiels town centre. The construction will be carried out over four separate schemes as shown

below. (Data taken from Scottish Borders Council web page[7]). Appendix 1 shows a map of the proposed development.

Scheme 1:
Scheme 1 will be carried out in three phases, as shown below:

Phase one - 18 weeks
- Build a three-lane road bridge over Gala Water
- Build a new roundabout at Currie Road
- Provide a new, free, long-stay car park at the east end of Currie Road.

Phase two - 2 weeks
- Provide access to the Health Centre from the new road and roundabout formed in Phase One.

Phase three - 20 weeks
- Demolish Station Brae.
- Build a new Station Brae roundabout.
- Connect the roundabout to Melrose Road with a new road.
- Build a new bridge over the line of the proposed Waverley railway. Build a new, controlled pedestrian crossing to link Market Street to the Health Centre and the proposed Asda superstore.

Scheme 2: Development of Paton Street to Albert Place, scheduled to take place in 2006/7.

Scheme 3: Development of Ladhope Vale to Bridge Place, scheduled to take place in 2006/7.

Scheme 4: Town Centre Traffic Management will take place in 2007/8.The transport 'interchange' is linked with the Waverly rail project, with work proposed to take place in 2008/9.

Construction started on the relief road around Galashiels in January 2006. The target completion date was the end of February 08, however this has been delayed by approximately 1 year. The two remaining phases (Schemes 2 and 3) of the Inner Relief Road are now scheduled for competition in September 2008 and March 2009 respectively.

When the construction work is completed additional NO_2 monitoring will be taken along the new road. These new monitoring locations will be sited in consultation with SEPA and will run in parallel with the existing tubes within the High Street area.

3.2.2 Hawick High Street

On the 10th February 2008 Hawick High Street was made into a one-way system (southbound). This has greatly improved traffic flow along the road and a reduction in NO_2 concentrations is anticipated for 2008. This will be assessed in future in consultation with existing NO_2 monitoring and reported in subsequent Review and Assessment reports.

3.3 New Quarry and Landfill Developments

There were no New Quarry Developments made during 2007.

Easter Langlee Landfill site is now operating under a PPC permit and has opened up 2 new cells in the last year. This has the potential for increased gassing at the site as the gas management system has not yet been installed for the old site. However, the risk of increased pollution is considered low.

4 Conclusion

Scottish Borders Council USA 2006 concluded that the air quality objectives for each of the pollutants were unlikely to be exceeded at any location in the district, and therefore a Detailed Assessment would not be required.

Diffusion tube monitoring of NO_2 in 2007, at all sites has shown no exceedences of the NO_2 Objectives, with levels on average decreasing by 16%. It is therefore recommended that no further action is required by Scottish Borders Council concerning NO_2 monitoring.

The ongoing year long PM_{10} Monitoring programme situated in Newcastleton has so far provided data concentrations below the Scottish National Objectives for both annual and daily averages. It is anticipated that levels will stay below the objectives for the remainder of the monitoring period, and therefore no further action required from Scottish Borders Council.

The main development within the district is the continued development of the new road scheme within Galashiels. It is predicted that this work will alleviate traffic congestion within the town centre, especially the High Street area. The only other new development likely to significantly affect pollutant concentrations is the modification of Hawick High Street into a one-way system. It is anticipated that this scheme will lead to a continued reduction in NO_2 concentrations.

Hence it is concluded that the Scottish Borders Council do not need to proceed to a Detailed Assessment for any pollutant.

Scottish Borders Council accepts the above conclusions and will implement the recommendations.

5 References:

1. Part IV of the Environment Act 1995, Section 82, (http://www.opsi.gov.uk/acts/acts1995/Ukpga_19950025_en_1)
2. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, (CM7169NIA61/06-07), July 2007, (www.scotland.gov.uk/Publications/2003/02/16284/17626)
3. Local Air Quality Management, Progress Report Guidance LAQM PRG(03), DEFRA 2003. (http://www.defra.gov.uk/environment/airquality/local/guidance/pdf/progress-report.pdf)
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9. Air Quality in Scotland www.scottishairquality.co.uk
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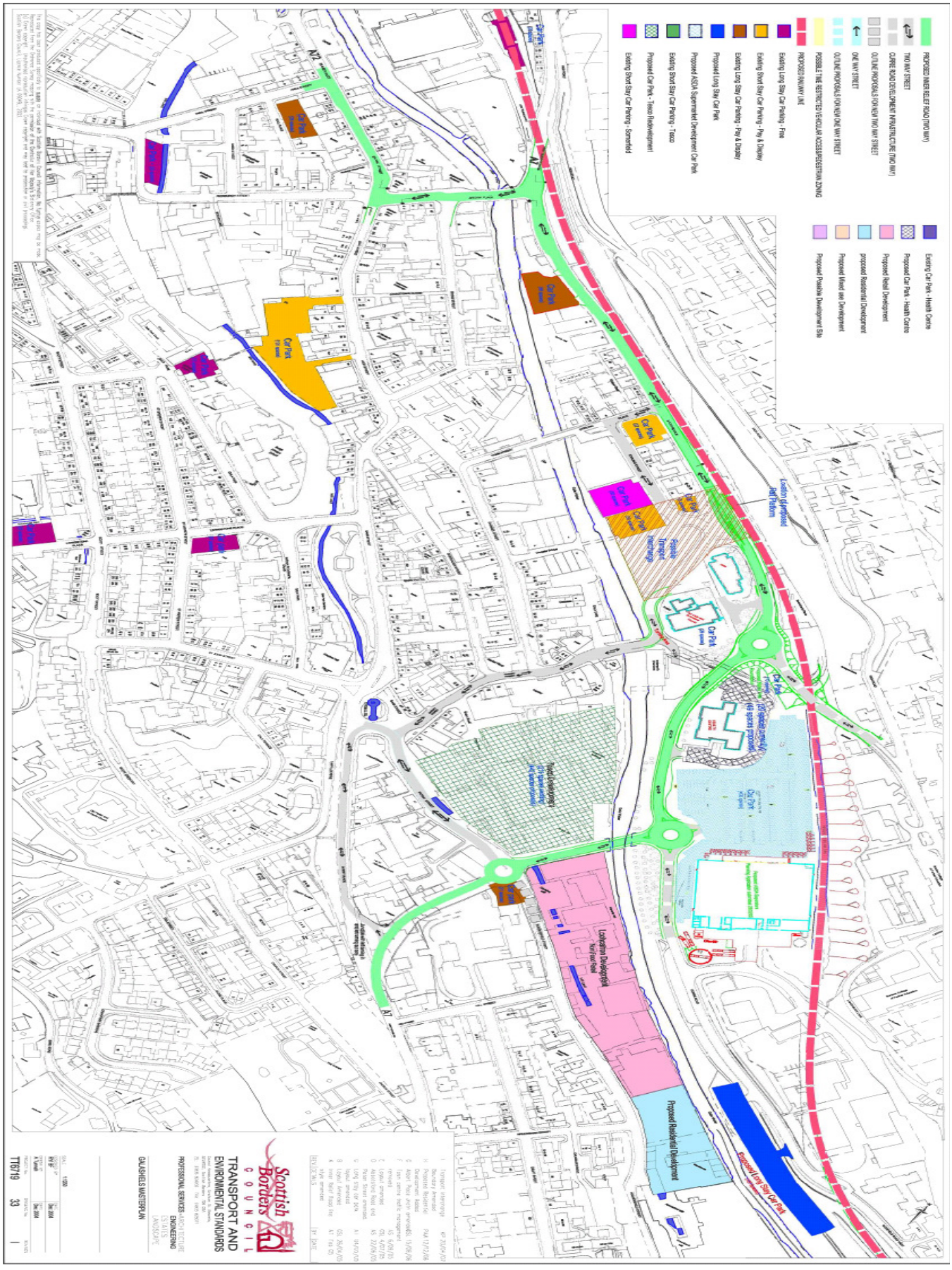
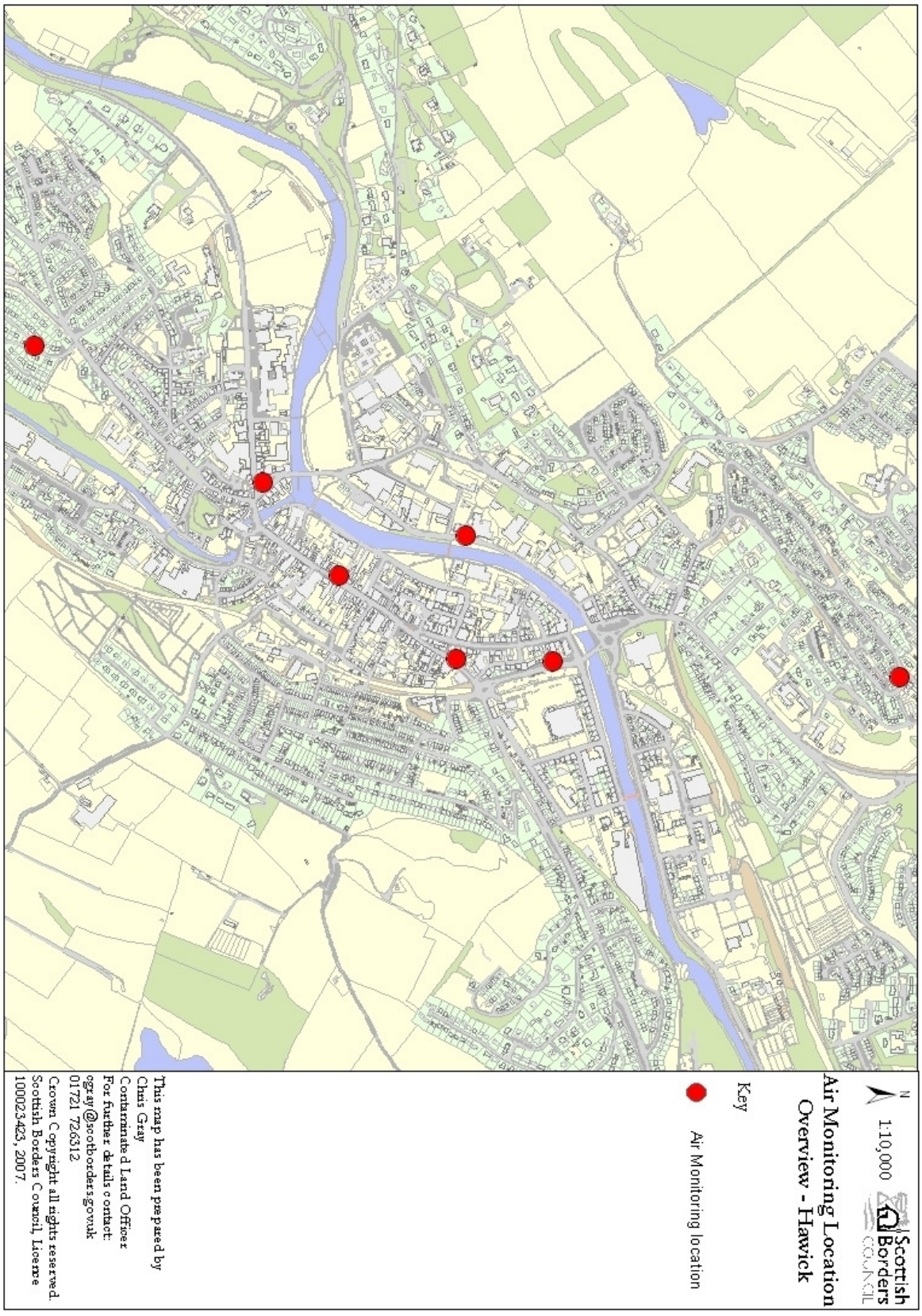
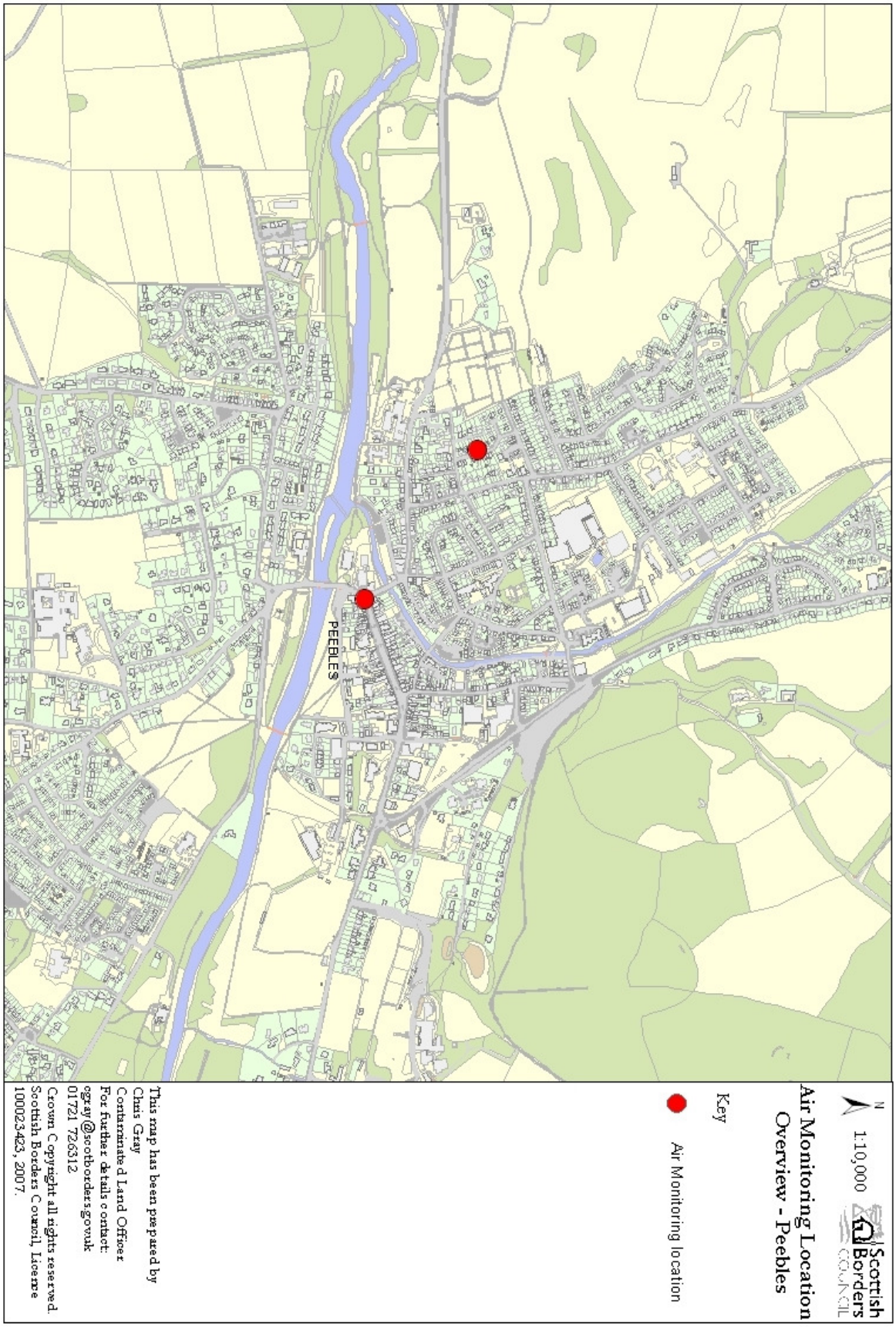
11. Air Quality Review and Assessment - Detailed, Domestic Fuel Combustion, A Report for Scottish Borders Council, Feb 2006.
12. Scottish Pollutant Release Inventory 2007. (www.sepa.org.uk/spri/index.htm)

Appendix 1: Galashiels Road Scheme Map: Masterplan



Appendix 2: Air Quality Monitoring Locations:




PEEBLES
Air Monitoring Location
Overview - Peebles
Key
Air Monitoring location
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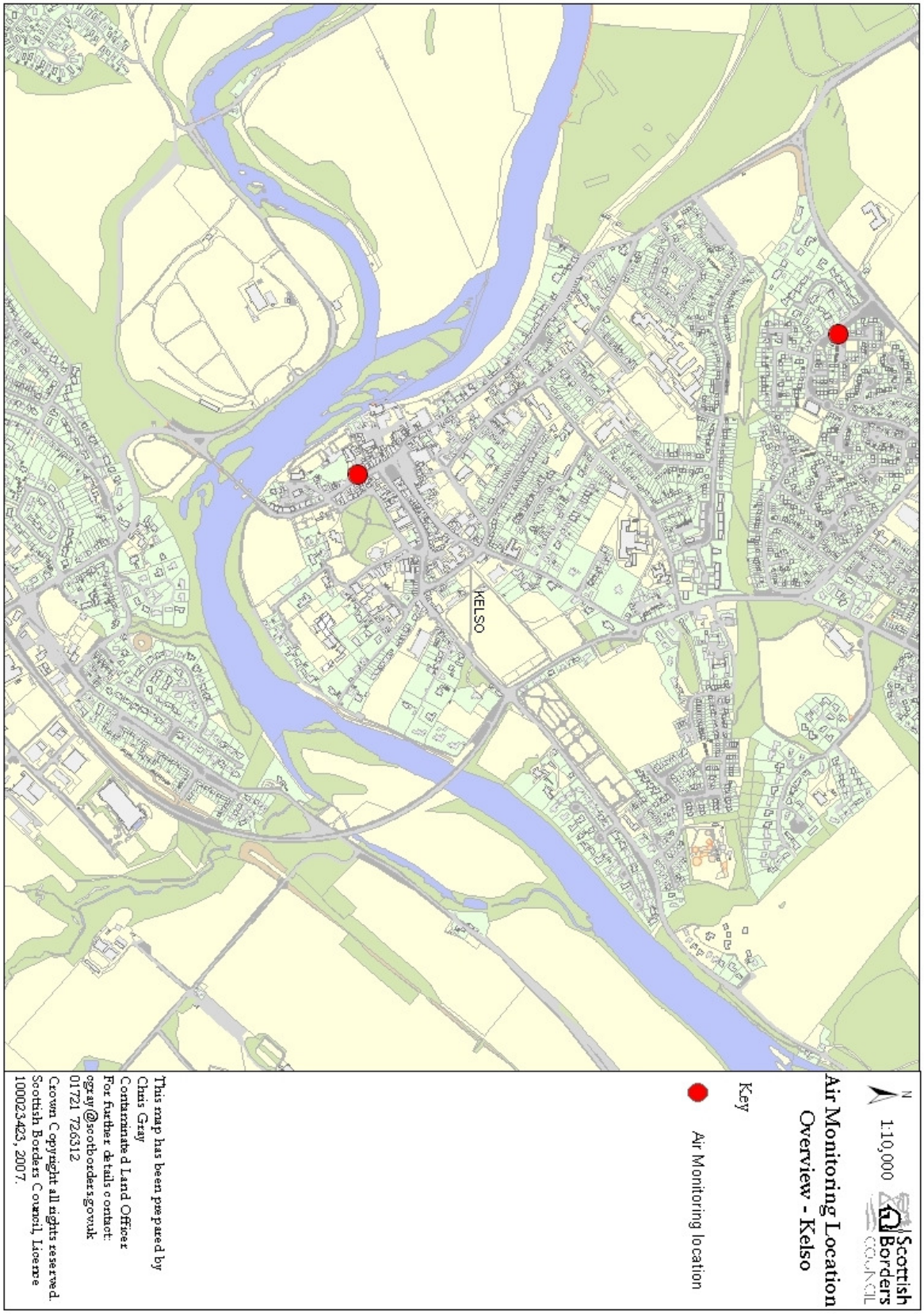
KELSO
Air Monitoring Location
Overview - Kelso
Key
Air Monitoring location
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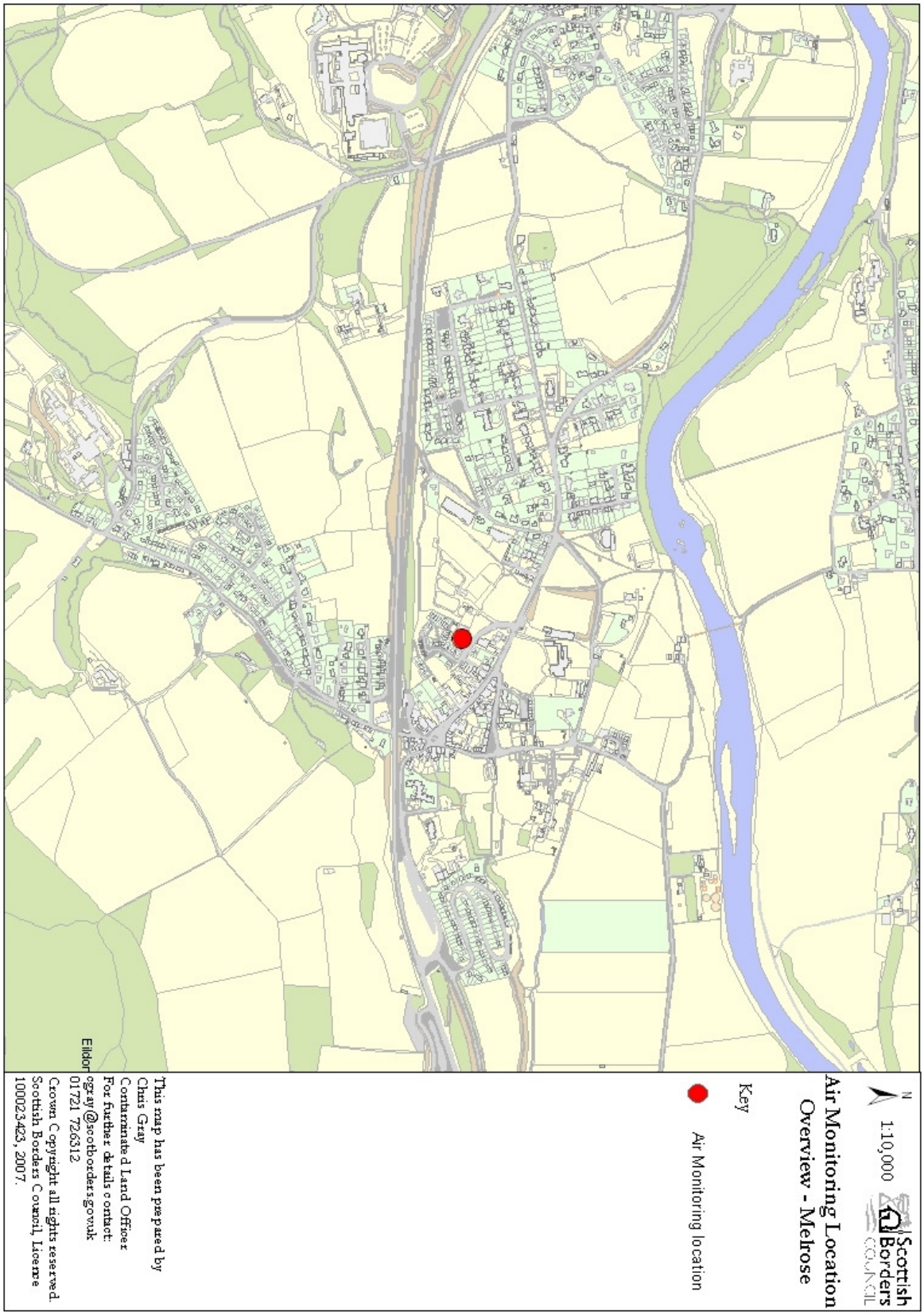
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Scottish Borders Council
Air Monitoring Location
Overview - Melrose
Key
Air Monitoring location
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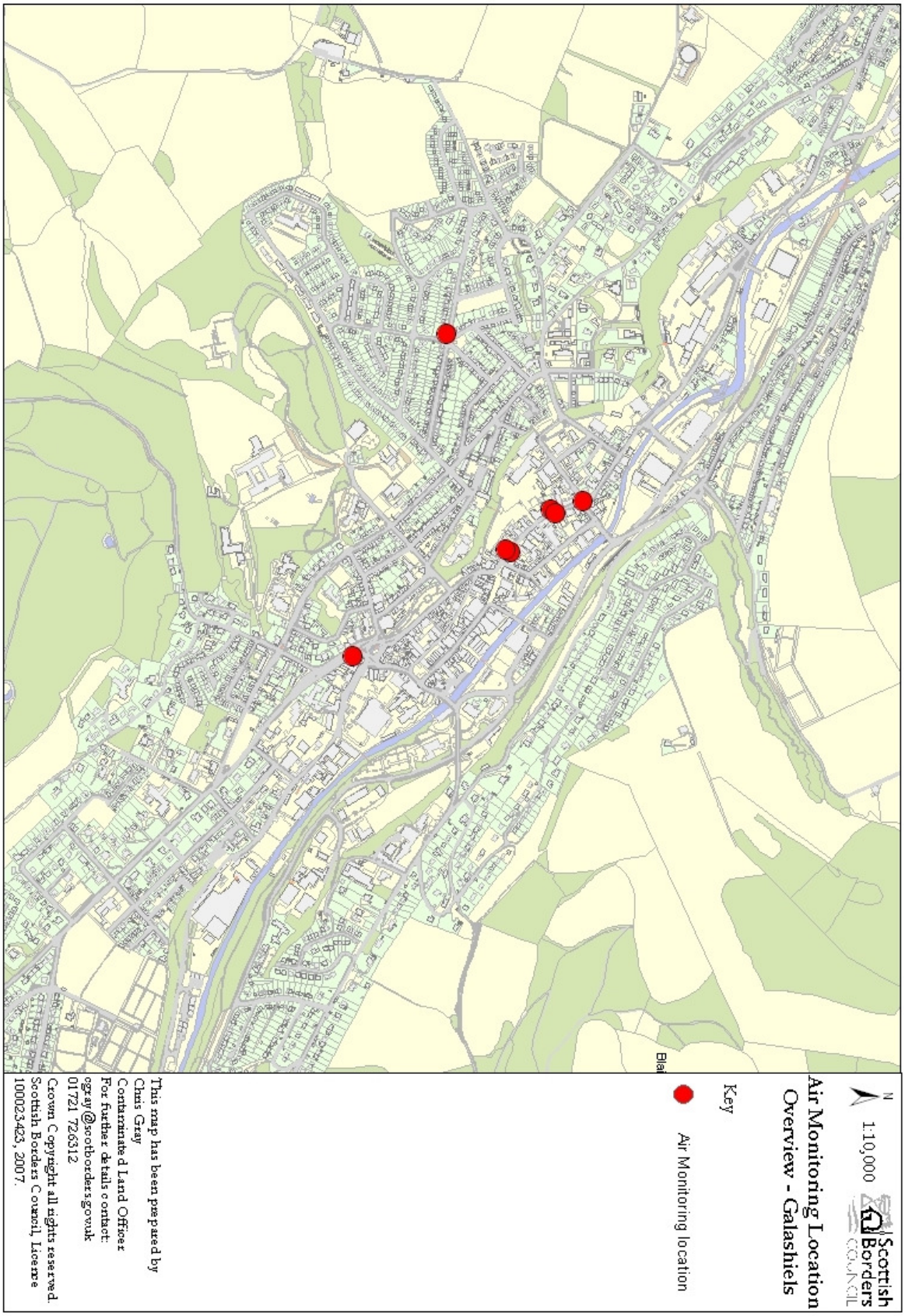
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Overview - Galashiels
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1:1,750
Scottish Borders Council
Air Monitoring Location
12. Commercial Road
Hawick
Key
Air Monitoring location
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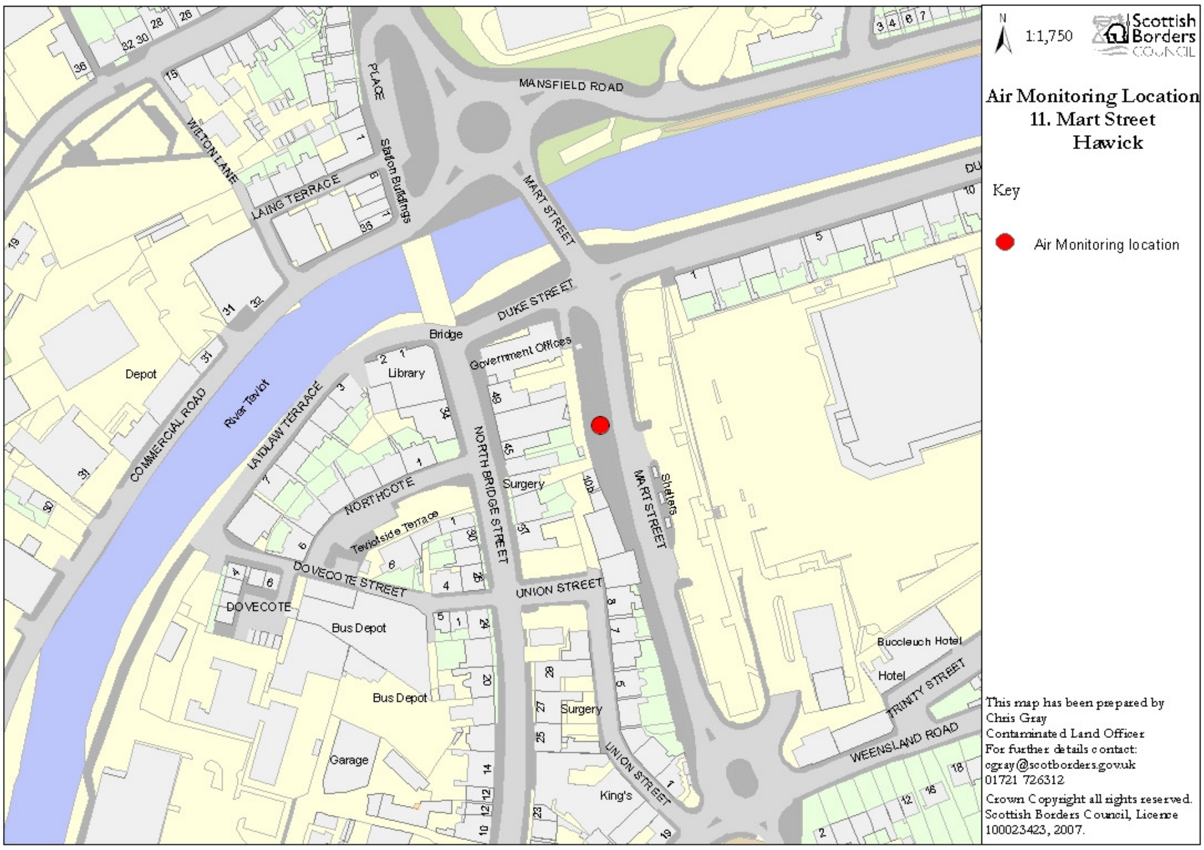
Builder's Yard
Garage
Factory
Borders College
Victoria Bridge
BATH STREET
PRINCES STREET
Wilton Path
WILTON PATH
UNDERDAMSIDE
COMMERCIAL ROAD
Works
HAWICK
CRESCENT
OLIVER CRESCENT
OLIVER
BAKER STREET
Warehouse
Bus Depot
DOVECOTE STREET
DOVECOTE
NORTHCOTE
CROFT ROAD
Garage


1:1,750
Scottish Borders Council
Air Monitoring Location
11. Mart Street
Hawick
Key
Air Monitoring location
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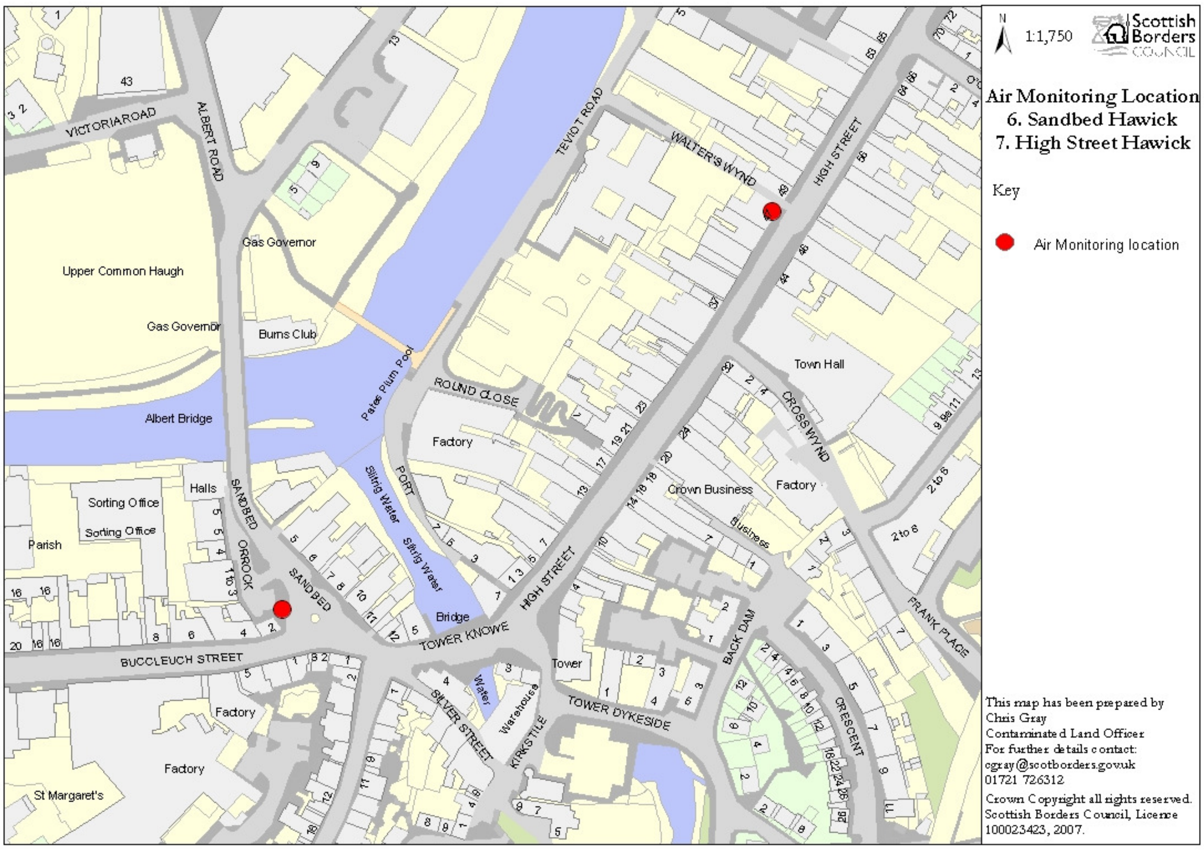
MANSFIELD ROAD
MART STREET
Station Buildings
LAING TERRACE
WILTON LANE
DUKE STREET
Bridge
Government Offices
Library
Depot
River Teviot
COMMERCIAL ROAD
LAIDLAW TERRACE
NORTHCOTE
Teviotside Terrace
NORTH BRIDGE STREET
Surgery
DOVECOTE STREET
DOVECOTE
UNION STREET
Bus Depot
Garage
King's
Shelters
Buccleuch Hotel
Hotel
TRINITY STREET
WEENSLAND ROAD


N
1:1,750
Scottish Borders Council
Air Monitoring Location
6. Sandbed Hawick
7. High Street Hawick
Key
Air Monitoring location
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VICTORIA ROAD
ALBERT ROAD
TEVIOT ROAD
WALTER'S WYND
HIGH STREET
Gas Governor
Upper Common Haugh
Burns Club
Town Hall
ROUND CLOSE
Albert Bridge
Factory
CROSS WYND
Sorting Office
Halls
SANDBED
Crown Business
Parish
ORROCK
Silling Water
Business
TOWER KNOWE
BUCCLEUCH STREET
Bridge
BACK DAM
FRANK PLACE
Tower
SILVER STREET
Warehouse
TOWER DYKESIDE
KIRKSTILE
CRESCENT
St Margaret's


N
1:1,750
Scottish Borders Council
Air Monitoring Location
8. Renwick Terrace
Hawick
Key
Air Monitoring location
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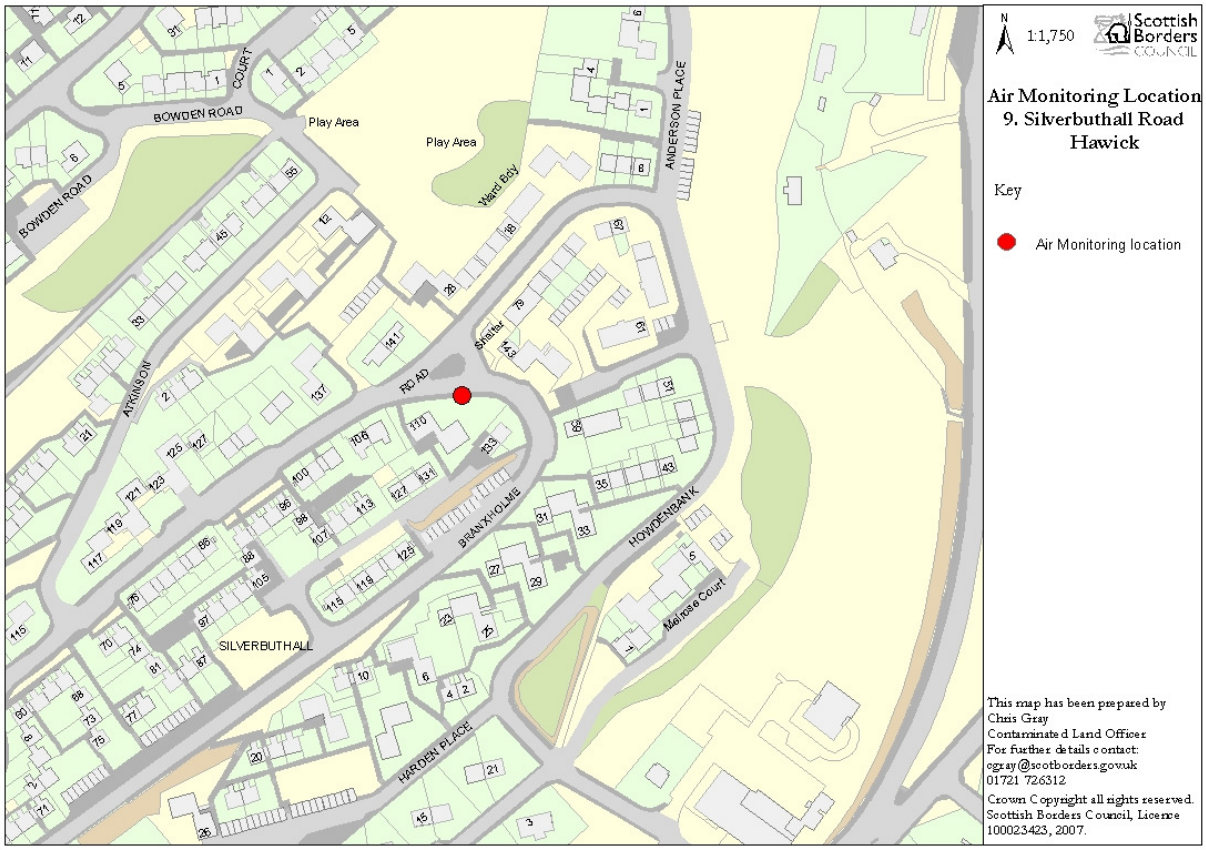
CRESCENT
LOAN
Primary School
Moat Park
WEST
END
LONGCROFT ROAD
CRUMHAUGHHILL ROAD
ROSEBANK
RENWICK
Ward Bdy
Moat Crescent
RENWICK TERRACE
RAMSAY ROAD
Roadhouse
ROSEBANK ROAD
Factory
Lynn Wood


N
1:1,750
Scottish Borders Council
Air Monitoring Location
9. Silverbuthall Road
Hawick
Key
Air Monitoring location
BOWDEN ROAD
Play Area
ANDERSON PLACE
Ward Bdy
ATKINSON
ROAD
Stratter
BRANKHOLME
HOWDENBANK
Melrose Court
SILVERBUTHALL
HARDEN PLACE
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N
1:1,750
Scottish Borders Council
Air Monitoring Location
10. Bourtree Place
Hawick
Key
Air Monitoring location
Garage
DOVECOTE STREET
DOVECOTE
Bus Depot
UNION STREET
Buccleuch Hotel
Hotel
TRINITY STREET
WEENSLAND ROAD
Surgery
King's
Garage
BOURTREE PLACE
Church
Eskdaill
LINDEN
Works
Factory
CROFT ROAD
NORTH
HAWICK
CRESCENT
OLIVER CRESCENT
Oliver Place
BOURTREE
TERRACE
Douglas Halg Court
Dismantled Railway
Warehouse
BANK
BAKER STREET
Ward Bdy
BROUGHAM PLACE
Trinity
St Marys
LINDEN TERRACE
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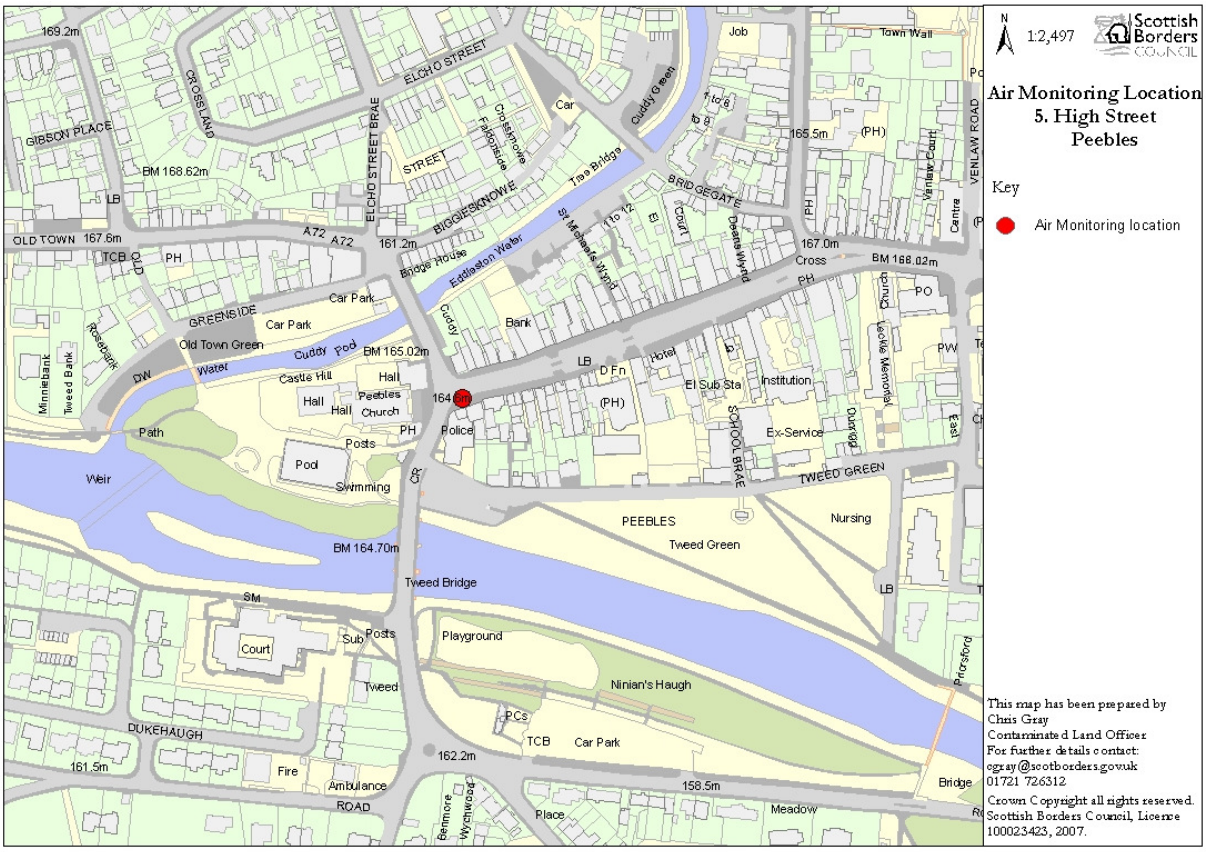
1:2,497
Scottish Borders Council
Air Monitoring Location
5. High Street
Peebles
Key
Air Monitoring location
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ELCHO STREET
BIGGIESKNOWE
BRIDGEGATE
OLD TOWN
GREENSIDE
Eddleston Water
SCHOOL BRAE
TWEED GREEN
VENLAW ROAD
Tweed Bridge
Tweed Green
Ninian's Haugh
DUKEHAUGH
Playground
Car Park


1:1,750
Scottish Borders Council
Air Monitoring Location
4. Gladstone Place
Peebles
Key
Air Monitoring location
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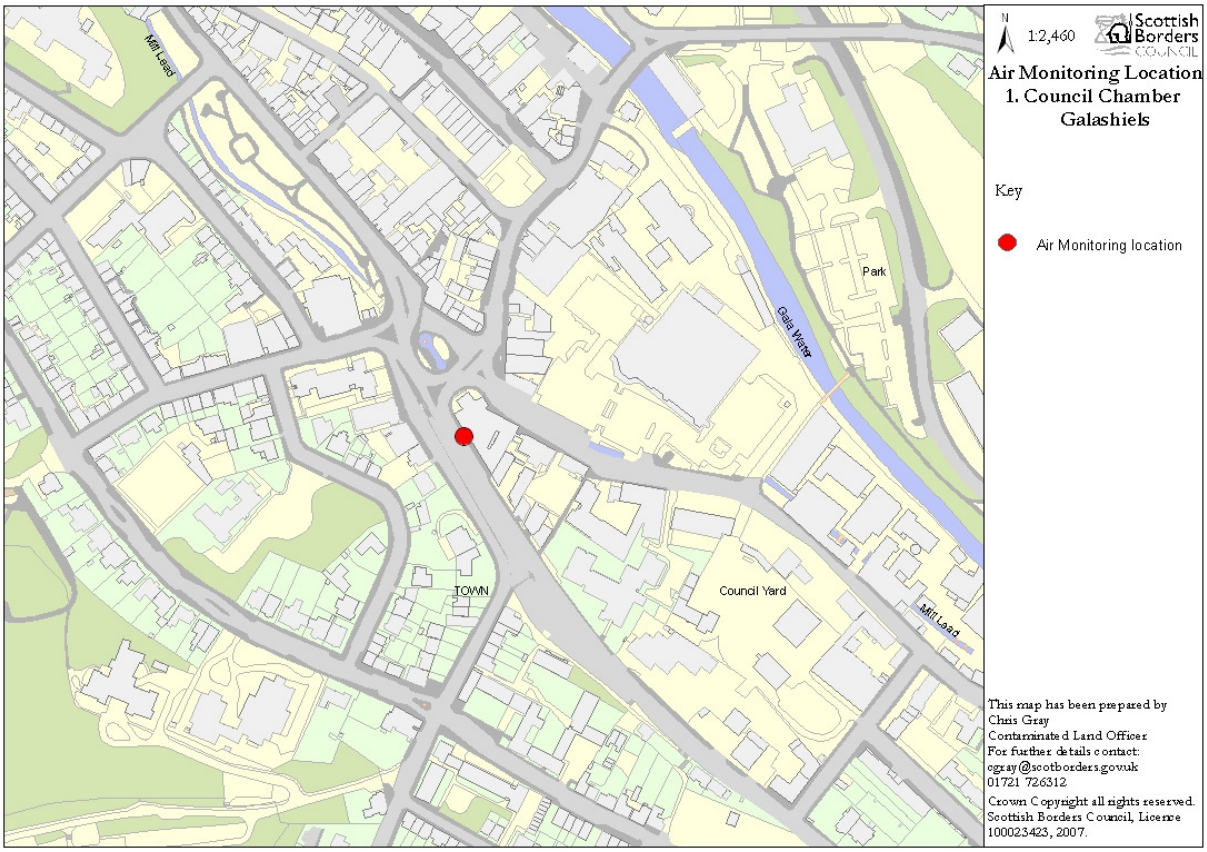
KIRKLAND STREET
MARCH STREET
WEMYSS PLACE
GLADSTONE PLACE
ST ANDREW'S PLACE
ST ANDREW'S ROAD
GRAHAM STREET
GIBSON PLACE
CLARK PLACE
CROSS ROAD
CROSSLAND
OLD TOWN
Cemetery


N
1:2,460
Scottish Borders Council
Air Monitoring Location
1. Council Chamber
Galashiels
Key
Air Monitoring location
Mill Lead
Park
Gala Water
TOWN
Council Yard
Mill Lead
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N
1:1,750
Scottish Borders Council
Air Monitoring Location
2. Stanley Street/
Meigle Street
Galashiels
Key
Air Monitoring location
DEAN STREET
EILDON STREET
THISTLE STREET
VICTORIA STREET
STANLEY STREET
UNTHERN STREET
GALA PARK
MEIGLE STREET
FOREST GARDENS
FOREST AVENUE
BALMORAL
CRES
FOREST CRESCENT
FOREST PLACE
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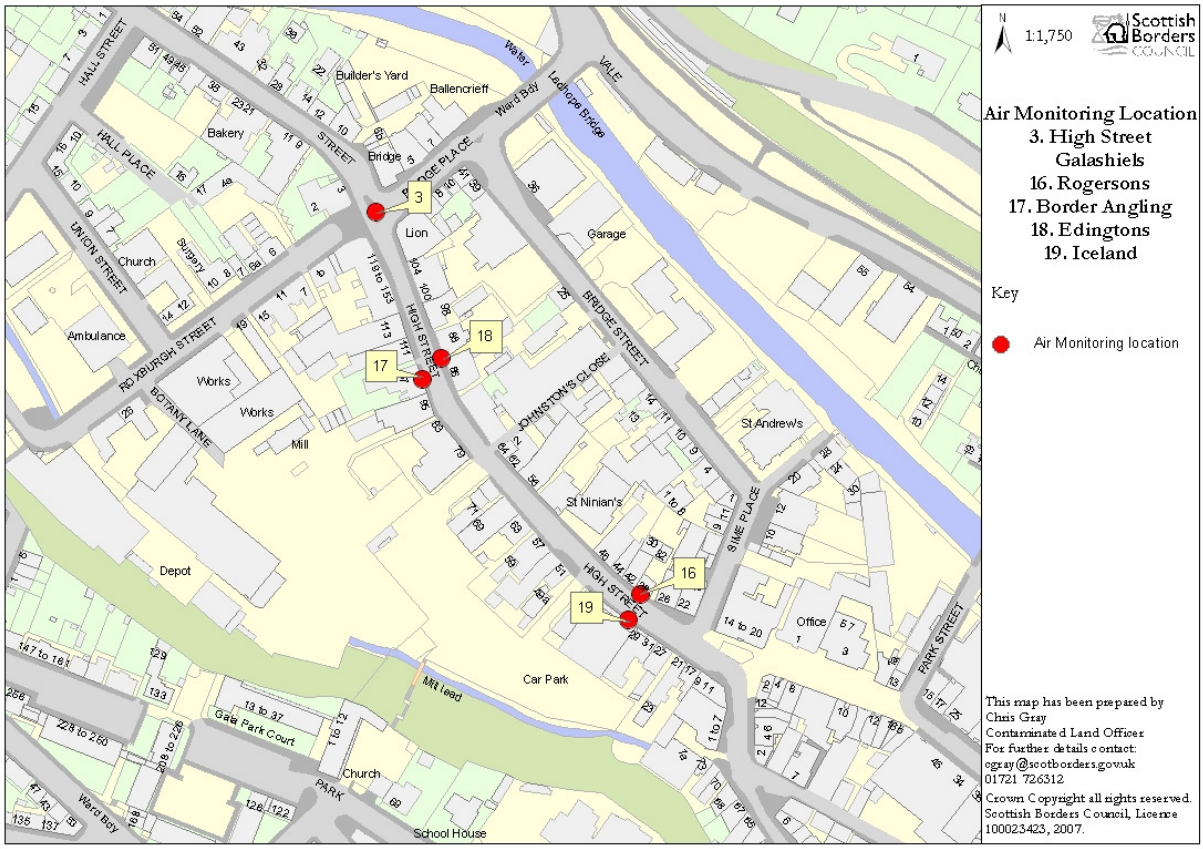
1:1,750
Scottish Borders Council
Air Monitoring Location
3. High Street
Galashiels
16. Rogersons
17. Border Angling
18. Edingtons
19. Iceland
Key
Air Monitoring location
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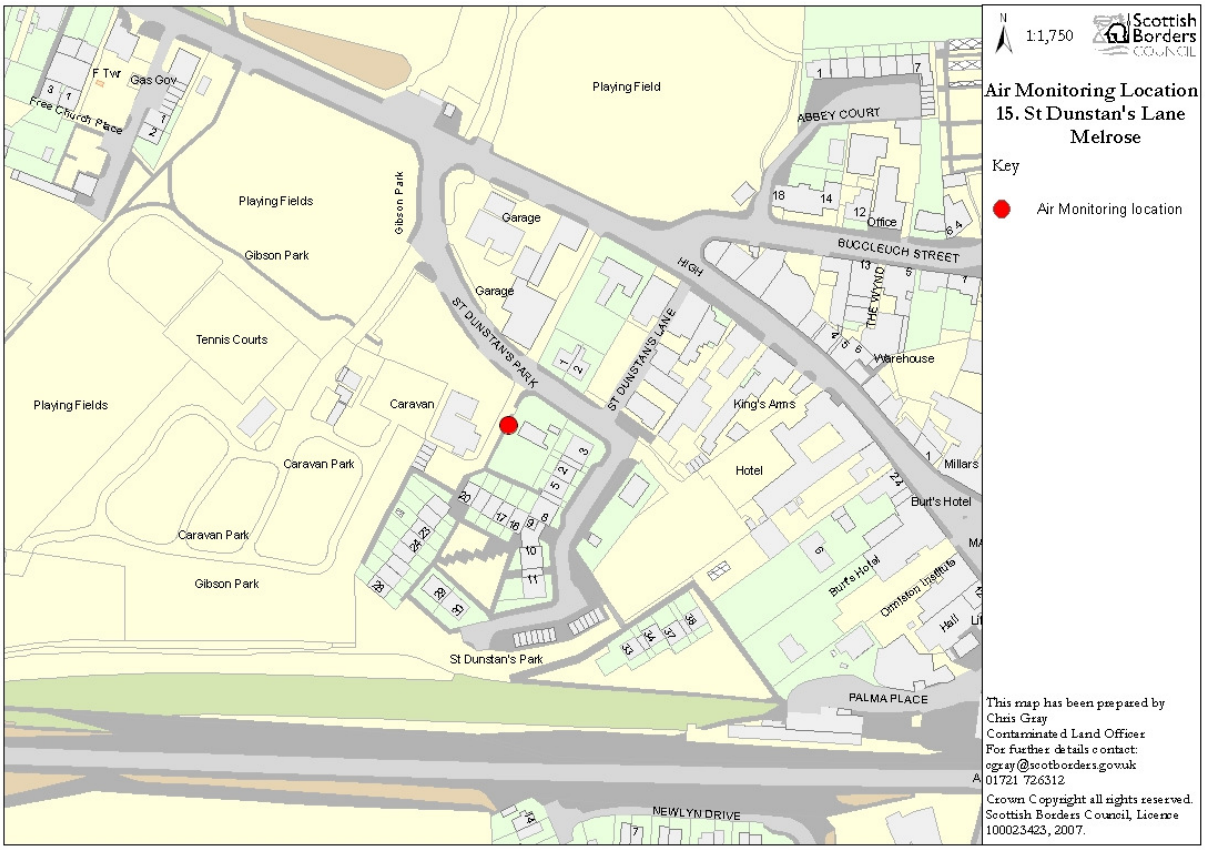
100023423, 2007.
HALL STREET
HALL PLACE
UNION STREET
Bakery
Builder's Yard
Ballencrieff
Ward Boy
Ledgerope Bridge
VALE
BRIDGE PLACE
BRIDGE STREET
Lion
Garage
Church
Supply
Ambulance
ROXBURGH STREET
BOTANY LANE
Works
Works
Mill
HIGH STREET
JOHNSTON'S CLOSE
St Andrew's
St Ninian's
SIME PLACE
Depot
Car Park
Office
PARK STREET
Gala Park Court
PARK
Church
School House
Mill lead
3
16
17
18
19


1:1,750
Scottish Borders Council
Air Monitoring Location
15. St Dunstan's Lane
Melrose
Key
Air Monitoring location
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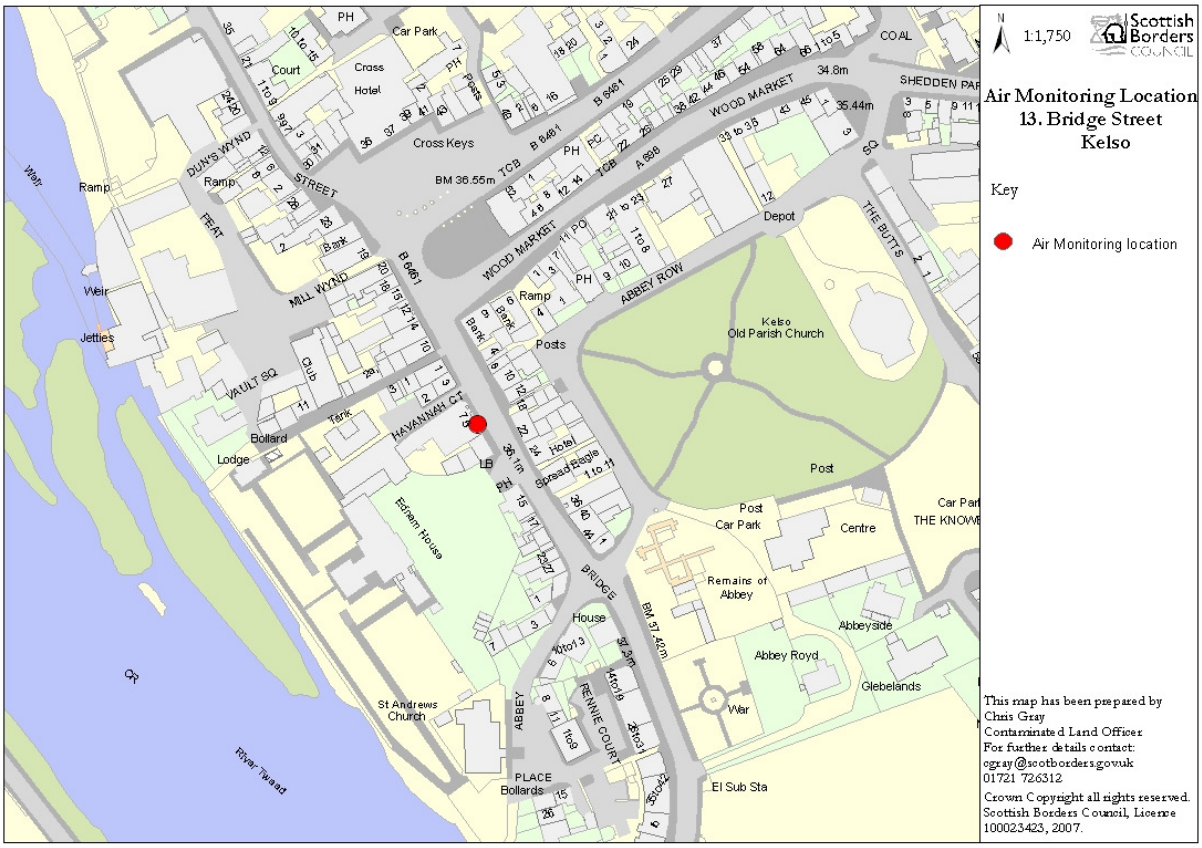
Playing Field
ABBEY COURT
Playing Fields
Gibson Park
Garage
Office
BUCCLEUCH STREET
HIGH
THE WYND
Warehouse
ST DUNSTANS PARK
ST DUNSTANS LANE
Tennis Courts
Caravan
King's Arms
Hotel
Millars
Burt's Hotel
Caravan Park
St Dunstan's Park
PALMA PLACE
NEWLYN DRIVE
Free Church Place
Gas Gov


1:1,750
Scottish Borders Council
Air Monitoring Location
13. Bridge Street
Kelso
Key
Air Monitoring location
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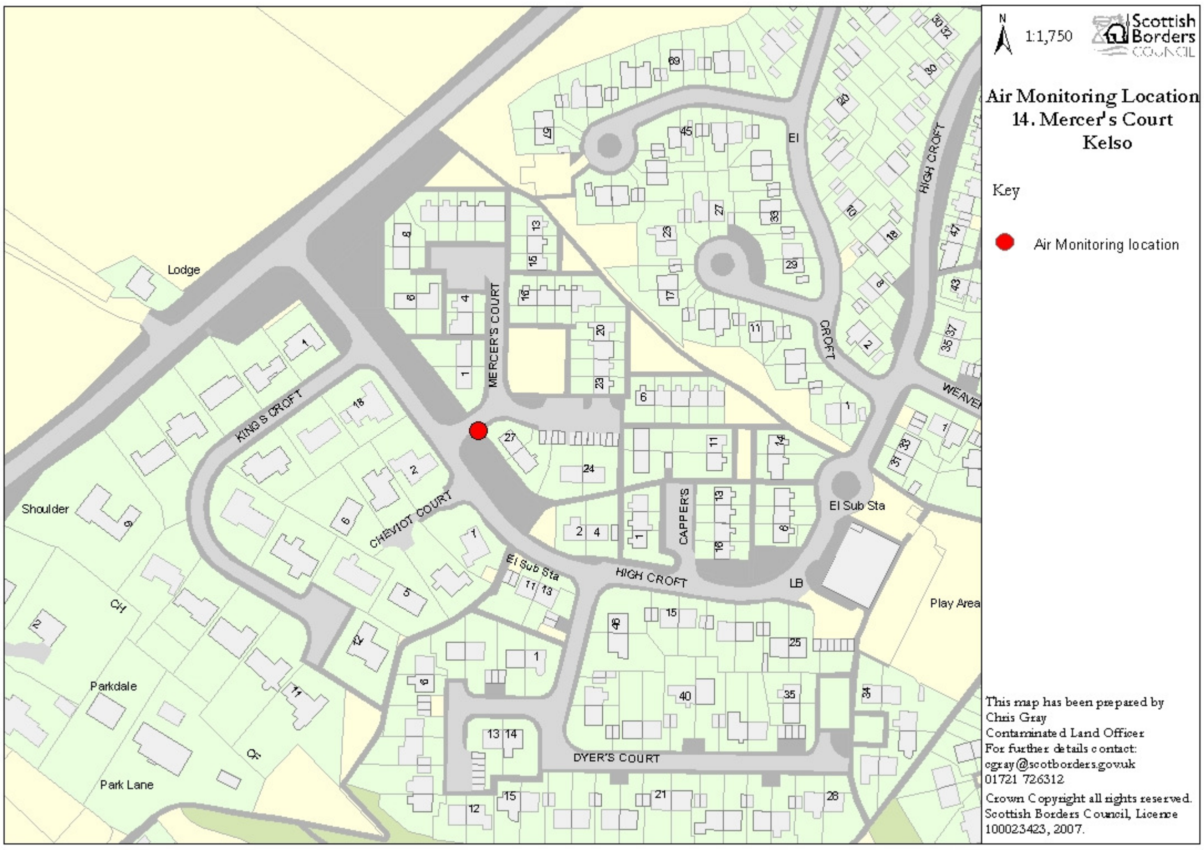
WOOD MARKET
ABBEY ROW
BRIDGE STREET
MILL WYND
VAULT SQ
HAVANNAH CT
Kelso
Old Parish Church
Remains of
Abbey
Ednam House
St Andrews
Church
River Tweed
Cross Keys
SHEDDEN PARK
THE BUTTS


1:1,750
Scottish Borders Council
Air Monitoring Location
14. Mercer's Court
Kelso
Key
Air Monitoring location
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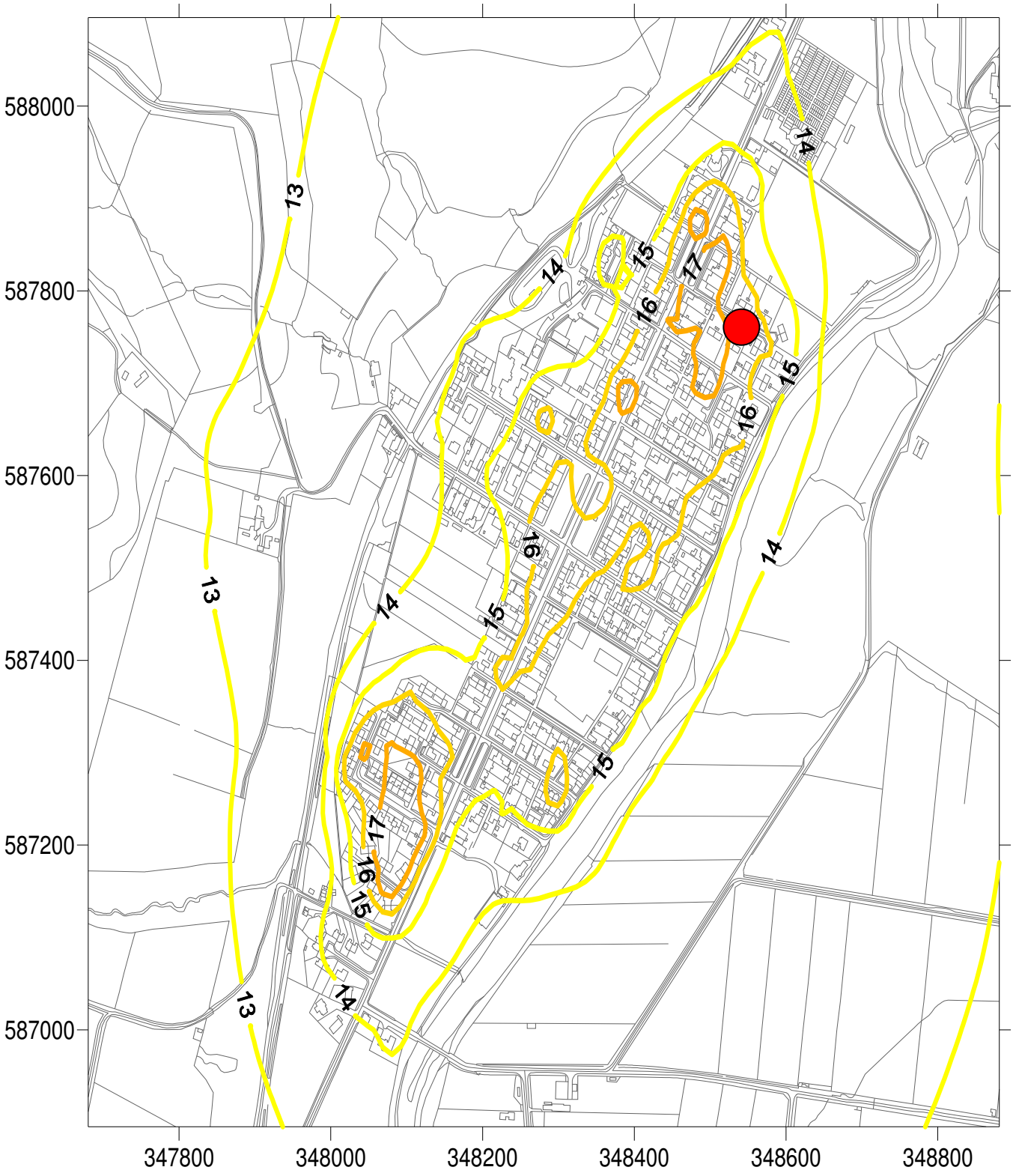
MERCER'S COURT
KINGS CROFT
CHEVIOT COURT
HIGH CROFT
CAPPER'S
DYER'S COURT
Lodge
Shoulder
Parkdale
Park Lane
Play Area
El Sub Sta

Appendix 3: Newcastleton Modelled 2010 annual mean PM_{10} concentrations (µg m^3) with 2007-08 Air Quality Monitoring Location.



Extracted from "Air Quality Review and Assessment - Detailed, Domestic Fuel Combustion, A Report for Scottish Borders Council, Feb 2006"

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KA14 3DD

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