



2011 Air Quality Progress Report for Aberdeenshire Council

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

June 2011

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Executive Summary

A review of pollutant monitoring data and atmospheric emissions sources within Aberdeenshire Council area has been undertaken. The assessment compared the available monitoring data to national air quality standards in order to identify any existing exceedences of the standards.

The NO₂ concentrations measured by Aberdeenshire Council during 2010 were below the NAQS annual mean objective for NO₂ at all monitoring locations.

Aberdeenshire Council do not need to proceed to a Detailed Assessment for any pollutant at present.

Aberdeenshire Council will continue to monitor NO₂ concentrations at 8 sites across the local authority area and will continue to identify any new development that may have an impact on local air quality. In this regard Aberdeenshire Council intend to begin Round 5 of the Local Air Quality Management Review and Assessment programme with the submission of an Updating and Screening Report in 2012.

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1 Introduction

1.1 Description of Local Authority Area

Aberdeenshire Council is located on the north-east coast of Scotland and surrounds Aberdeen City Council area. The Council area is bordered to the south by Angus and Perth and Kinross Councils and to the west by Moray and The Highland Councils. The northern and eastern borders of Aberdeenshire Council area are the Moray Firth and the North Sea coast.

The Council area is split into two distinct geographical types: the western part of the Council area is dominated by the Grampian mountain range and includes large areas of forest and moorland. The northern and eastern parts of the Council area are relatively flat with large expanses of agricultural land, coastal grassland and a greater density of urban centres.

As is the case for the majority of the UK there is a dominance of south-westerly winds, although there is a significant proportion of easterly winds and south-easterly winds indicating the influence of weather systems in the North Sea and Moray Firth. The mean temperature is approximately 8°C in the lowland areas but below 5°C in the upland areas to the south. The area has low to medium rainfall and hours of sunshine compared to the rest of the UK, however, there is a greater than average number of days when snow is lying (> 60 in upland areas and between 5 and 20 in coastal areas).

The population of the Aberdeenshire Council area is approximately 240,000 with largest urban populations residing in Peterhead, Fraserburgh, Inverurie, Stonehaven, Westhill and Ellon. A large proportion of the Aberdeenshire population is involved in the off-shore oil and gas industry. A significant proportion of the population are also involved in the traditional industries of farming, forestry and fishing with approximately one third of Scotland's agricultural produce originating in the region. The industrial and commercial areas are primarily located in the east of the Council area around Aberdeen, Stonehaven, Peterhead and Fraserburgh. A large section of the central region of Aberdeenshire is a commuter region for Aberdeen City with a significant proportion of the local population commuting in to Aberdeen City on a regular basis.

The rail network within Aberdeenshire comprises two mainline passenger and freight rail routes: one passing north-south through the Council area along the North Sea coastline from Dundee to Aberdeen; and the second linking Aberdeen to Inverness passing through Inverurie and Huntly.

The major roads passing through the Council area comprise:

- the A90 trunk road linking the coastal towns of Fraserburgh, Peterhead, Portlethen and Stonehaven to Aberdeen and providing the arterial route south to Dundee and Central and Southern Scotland; and
- the A96 trunk road which links Aberdeen to Elgin and Inverness.

There are also several harbours and ports located along the Aberdeenshire coast which are used by fishing boats, oil and gas industry support vessels and leisure craft. The two largest ports are Peterhead and Fraserburgh where there is a significant number of fishing, commercial and oil and gas shipping operations.

1.2 Purpose of Progress Report

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in Scotland are set out in the Air Quality (Scotland) Regulations 2000 (Scottish SI 2000 No 97), the Air Quality (Scotland) (Amendment) Regulations 2002 (Scottish SI 2002 No 297), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre, $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in Scotland.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	18 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2010
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Aberdeenshire Council have undertaken regular reviews of air quality since the introduction of the LAQM process; a summary of reports undertaken since 2003 is provided in Table 1.2.

Table 1.2 Details of Local Air Quality Reviews submitted by Aberdeenshire Council

Date Submitted	Review & Assessment Task	Conclusions
August 2003	Updating & Screening Assessment (2003) ¹	Monitoring of NO ₂ was undertaken at 13 sites. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment.
April 2004	Progress Report (2004) ²	Monitoring of NO ₂ ceased at 4 sites. The remaining 9 sites were reported. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment.
May 2005	Progress Report (2005) ³	NO ₂ monitoring at 9 sites. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment.
June 2006	Updating & Screening Assessment (2006) ⁴	Monitoring of NO ₂ undertaken at 14 sites (5 new sites added). No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment.
June 2007	Progress Report (2007) ⁵	Monitoring of NO ₂ undertaken at 14 sites. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment.
August 2008	Progress Report (2008) ⁶	Monitoring of NO ₂ undertaken at 14 sites. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment. Aberdeenshire Council published a local transport strategy in April 2007. The transport interchange in Peterhead opened in February 2008.
July 2009	Updating & Screening Assessment (2009) ⁷	Monitoring of NO ₂ undertaken at 14 sites. No observed or predicted exceedences of annual mean air quality objectives. No requirement for a detailed assessment. Several biomass sources were identified where further information is required to complete screening assessments.
July 2010	Progress Report (2010) ⁸	Monitoring of NO ₂ undertaken at 14 sites. All recorded concentrations remained below the annual mean NAQS objective, and thus 6 sites will be removed from the monitoring programme over this year. No requirement for a detailed assessment to be undertaken.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Aberdeenshire Council do not operate any automatic analysers or monitors.

2.1.2 Non-Automatic Monitoring Sites

In previous years Aberdeenshire Council maintained a network of 14 NO₂ diffusion tube sites located across the council area. Trend data across all sites was considered in the Progress Report (2010)⁸ and it was concluded that 6 of these NO₂ monitoring sites would be removed from the network as a result of consistent low results.

Details of the current monitoring sites are presented in Table 2.1. Maps detailing the locations of the non-automatic monitoring sites are presented in Appendix C, Maps C.1-C.5 (p30-35).

Table 2.1 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	Relevant Exposure?	Distance to kerb of nearest road	Worst-case Location?
Inverurie 1	Kerbside	E 377403 N 821584	NO ₂	Y (2m)	< 5m	Y
Inverurie 2	Roadside	E 376646 N821469	NO ₂	Y (5m)	< 2m	Y
Peterhead 1	Kerbside	E 413594 N 846066	NO ₂	Y (2m)	< 5m	Y
Peterhead 2	Kerbside	E 413209 N 846356	NO ₂	Y (2m)	< 5m	Y
Peterhead 3	Kerbside	E 412716 N 846734	NO ₂	Y (2m)	< 5m	Y
Peterhead 4	Kerbside	E 412758 N 846144	NO ₂	Y (2m)	< 5m	Y
Stonehaven 1	Kerbside	E 387445 N 785823	NO ₂	Y (2m)	< 5m	Y
Westhill 2	Kerbside	E 382118 N 806577	NO ₂	Y (2m)	< 5m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

Comparison of measured NO₂ concentrations with relevant air quality standards are discussed in Section 2.2.1.

2.2.1 Nitrogen Dioxide

Diffusion Tube Monitoring Data

The NO₂ diffusion tube monitoring data for 2010 and the 2 previous years are presented in Table 2.2. Raw data is presented in Appendix A.1 (p26).

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	Data Capture for 2010 (%)	Annual Mean Concentration adjusted for Bias (µg/m ³)		
				2008	2009	2010
Inverurie 1	West High St	No	92	32.9	37.5	33.6
Inverurie 2	Gordon House	No	92	9.5	11.4	10.4
Peterhead 1	Broad St	No	83	20.0	25.0	21.7
Peterhead 2	Queen St	No	75	25.4	29.0	26.5
Peterhead 3	Hay Crescent	No	83	21.1	23.7	22.6
Peterhead 4	Kirk St	No	67 (8 months)	21.4	24.7	27.0 (annualised)
Stonehaven 1	Allardice St	No	58 (7 months)	24.9	23.7	26.1 (annualised)
Westhill 2	Elrick Cottages	No	92	16.6	18.4	20.3

The measured mean for sites at Stonehaven 1 and Peterhead 4 was annualised in accordance with instructions given in Box 3.2 of TG(09)⁹ as a result of poor data capture due to extreme weather events at both the beginning and end of 2010. The annualisation ratio used in these calculations is described in Appendix B (p29) and is based on diffusion tube measurements observed at Inverurie 1, Inverurie 2 and Westhill 2, where the data capture rate for 2010 is above 90% (and in the absence of any suitable nearby automatic monitoring data). The annualised mean data for sites at Stonehaven 1 and Peterhead 4 was subject to bias adjustment in the normal way and is presented alongside all other bias adjusted mean data in Table 2.2.

The highest recorded annual mean concentration continues to be observed at site Inverurie 1. This is a kerbside location on the busy B9170 close to the junction with the B9001 where there is a traffic light traffic management system in place. The road is the main shopping street in Inverurie and the junction is important for through traffic. In addition, there is a shopping area with large national retailers nearby accessed from the B9001 junction.

There were no exceedences of the NO₂ annual mean objective recorded in Aberdeenshire Council area during 2010.

Trend data of annual mean NO₂ concentration measured at diffusion tube monitoring sites, over the period 2005-10 is presented in Appendix A.2, Figure A.1 (p27). Analysis of the presented data does not reveal any significant trend at any individual site or across Aberdeenshire as a whole.

2.2.2 PM₁₀

Aberdeenshire Council do not carry out any monitoring in respect of PM₁₀.

2.2.3 Sulphur Dioxide

Aberdeenshire Council do not carry out any monitoring in respect of Sulphur Dioxide.

2.2.4 Benzene

Aberdeenshire Council do not carry out any monitoring in respect of Benzene.

2.2.5 Other pollutants monitored

A summary of air quality complaints and enquiries received by Aberdeenshire Council in 2010 is summarised in Table 2.3.

Table 2.3 Number of Air Quality related Complaints and Enquiries in 2010

	Category	Number
Smoke	Domestic Bonfires	25
	Industrial/Commercial	8
	Industrial Chimney	0
	Domestic Chimney	6
	Dark Smoke	2
	Stubble Burning	0
	Cable Burning	0
	Scrap Car Burning	0
	Use of Unauthorised Fuel	0
	Total	41
Grit/Dust	Chimney	0
	DIY Activity	0
	Smuts/Deposits	0
	Unknown/Other	1
	Total	1
Odour/Fumes	Industrial/Commercial	20
	Domestic	15
	Agricultural Spreading	8
	Agricultural Housing	3
	Agricultural Dung Heaps	2
	Agricultural Source Unknown	0
	Unknown/Other	4
	Total	52
Vehicle Emissions		1
OVERALL TOTAL		95

Four of the issues listed in Table 2.3 were complaints made in relation to biomass. Three of these complaints involve domestic equipment and one relates to a complaint of smoke and odour from a new biomass boiler within Banff Academy. Two of the domestic complaints have been resolved and one is ongoing with resolution being sought through discussion with the manufacturer of the biomass plant.

Investigation found that the new biomass boiler at Banff Academy has a manufacturing fault. This equipment is no longer fully operational and will remain so until such time as the fault has been resolved.

The issues listed in Table 2.3 are transient in nature and have no overall effect on local air quality.

2.2.6 Summary of Compliance with AQS Objectives

Aberdeenshire Council has examined the results from monitoring in the local authority area. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

No new road traffic sources or areas of significantly changed traffic flow have been identified since the last Updating and Screening Assessment.

3.2 Other Transport Sources

No new transport sources have been identified since the last Updating and Screening Assessment.

3.3 Industrial Sources

Information on substantially changed industrial processes was requested from the Scottish Environment Protection Agency (SEPA) and is detailed in Table 3.1.

Table 3.1 Substantially Changed Industrial Processes

Type of Change	Details
Changes to Part A or B Processes that will result in a positive or negative effect on local air quality	Score Energy, Peterhead: possible expansion of acid plating process.
	Stirlinghill Quarry, Boddam: increase in stack height to improve dispersion.
	MacDuff Harbour (slipway), MacDuff: application for Part A permit for Tributyltin removal in paint spraying.
Part A or B Processes that have ceased to operate	Goldeneye module (Shell), St Fergus, Peterhead: ceased operation in 2010
	Scomi Oiltools Ltd, Peterhead: ceased operation in 2010
	Les Taylor and Grampian Building Contractors, throughout Aberdeenshire: approximately 7 mobile crushing plant, 2 quarries and Savoch landfill site have ceased operation.
SEPA regulated process that have increased emissions to air by more than 30%	No sites identified.

Information on new industrial processes was requested from the Scottish Environment Protection Agency (SEPA) and is detailed in Table 3.2.

Table 3.2 New Industrial Processes

Type of New Development	Details
New developments likely to have a significant impact on local air quality	Proposed Crematorium, Crimond (Aberdeenshire Council)
	Proposed Crematorium, Mintlaw (Aberdeenshire Council)
New petrol stations with an annual throughput of greater than 2000 m ³ of petrol	No sites identified
New mineral extraction processes likely to have a significant impact on local air quality	No sites identified

SEPA have also requested that the following sources should be considered at the next Updating and Screening Assessment:

- Paint Spraying activities not covered by PPC regime

3.4 Commercial and Domestic Sources

The Updating and Screening Assessment 2009⁷ identified that there was insufficient information to complete a screening assessment for the straw fuelled biomass plant at Auchmacoy Estate near Ellon. There is difficulty in obtaining emissions data for the straw fuel and thus data for wood had been obtained from the EMEP/EEA Emission Inventory Guidebook 2009¹⁰ for previous screening assessments. However, it is unlikely that the data for wood is representative for the plant at Auchmacoy Estate.

The straw-fuelled biomass boiler at Auchmacoy Estate is located approximately 50m from the nearest relevant receptor at Auchmacoy House (which it serves) and on higher ground above this main house. The location is rural with only a scattering of properties located at distances well over 200m from the boiler site. Should there be any exceedence of air quality objectives at this boiler site, it is expected there would be a fall off over distance. Box 1.4 of the Technical Guidance LAQM.TG(09)⁹ suggests that the air quality objectives should not generally apply in gardens of residential properties or at any location where public exposure is expected to be short term. Therefore, it is considered that there is no relevant exposure at Auchmacoy Estate and as such a detailed assessment is not necessary in this particular instance. Aberdeenshire Council will continue to hold information about this biomass boiler and update the screening assessment as required should any new and relevant information be received.

A review of planning applications was undertaken and information requested from the local Forestry Commission officer in order to identify additional new and proposed biomass installations. Although information from the Forestry Commission is still forthcoming, the biomass installations currently identified in this review are listed in Table 3.3.

Table 3.3 Additional Biomass Installations Identified since last Updating and Screening Assessment in Aberdeenshire Council Area

Location	Biomass Type	Capacity kW	Status
Little Whitehill, New Deer, Turriff, AB53 6UH	Unknown	Unknown	Permitted Development
Kemnay Golf Club, Kemnay, Inverurie, AB51 5RA	Wood Pellet	60kW	Granted
Cottonhillock, Methlick, Ellon, AB41 7DS	Wood Chip	300kW	Granted
Proposed Care Home Site, School Road, Stonehaven, AB39 2FB	Wood Pellet	300kW	Granted
St Fergus School, School Road, St Fergus, Peterhead, AB42 3HD	Unknown	Unknown	Granted

A map detailing the spread of identified biomass installations throughout the Aberdeenshire Council area is presented in Appendix C, Map C.6 (p36).

3.5 New Developments with Fugitive or Uncontrolled Sources

No significant new potential sources of fugitive or uncontrolled emissions have been identified since the previous Updating and Screening Assessment.

Aberdeenshire Council has identified the following new or previously unidentified local developments which may impact on air quality in the Local Authority area.

- Score Energy, Peterhead
- Proposed Crematoria at Crimond and/or Mintlaw
- Paint Spraying activities not covered by PPC regime
- New biomass combustion plant (listed in Table 3.3, p17)
- New developments where planning permission has been granted (listed in Table 4.1, p18)

These will be taken into consideration in the next Updating and Screening Assessment, scheduled for 2012.

4 Planning Applications

The following planning applications, listed in Table 4.1, are identified as having a potential impact on air quality.

Table 4.1 Planning Applications with Potential Impacts on Air Quality

Planning Application Reference Number	Description
APP/2010/0326	Erection of Crematorium and Formation of Associated Car Parking and Ancillary Landscaping, Crimond (granted)
APP/2009/4069	Extension to Landfill etc, Easter Hatton Landfill Site, Balmedie (pending)
APP/2005/4427	Importation of Waste and Soils Recovery Facility etc, New Pitsligo (granted)
APP/2006/4973	Redevelopment of Residential Institution etc (including 280 dwellings), Blairs College Estate (granted)
APP/2010/1756	Anaerobic Digester, Udney, Ellon (granted)
APP/2010/1864	Improvement to Pig Farming Business etc, Oldmeldrum (granted)
APP/2010/1352	Naturally Occurring Radioactive Material Treatment Facility etc, Peterhead (granted)
APP/2010/0886	Gas Turbine Testing Facility, Netherley (granted)
APP/2010/2438	Sand Extraction and Extension to Existing Quarry, Memsie, Fraserburgh (pending)
APP/2010/2890	Microbrewery, Stonehaven (granted)
APP/2010/4032	Formation of Caravan Park etc Including Launderette, Fortrie, Turriff (pending)
APP/2010/4047	Alterations and Extension to Store and Paint Spraying Shop, Daviot (granted)

Aberdeenshire Council will consider the applications listed in Table 4.1 at the next Updating and Screening Assessment.

5 Local Transport Plans and Strategies

Aberdeenshire Council published a Local Transport Strategy (LTS) in April 2007¹¹.

The LTS vision is to develop an integrated transport system for Aberdeenshire which contributes to the development of an inclusive and safe society, a sustainable economy and which reduces the environmental damage caused by transport.

The LTS includes several initiatives that will have a positive affect on local air quality. These include promoting travel behaviour change through personalised and workplace travel planning, school travel plans, public transport publicity campaigns and car sharing schemes.

In 2009, the Council's first Walking and Cycling Action Plan¹² was produced as a daughter document to the LTS, outlining a range of actions and policies that the Council will use to deliver increased levels of walking and cycling throughout the region. Amongst the initiatives taken forward in the last year through this Plan are the development of a 'Bikes on Buses' service with Stagecoach Bluebird on its Royal Deeside Service, and the launch of 2 'No Excuse Zones' in Peterhead and Westhill. The key aim of the 'No Excuse Zone' campaign is to reduce car congestion and pollution by encouraging communities to be healthier and more active. As well as showing safe routes, 'No Excuse' maps are available which also highlight the health, financial and environmental benefits associated with replacing short car journeys with cycling. Work is also ongoing on the development of the region's first Cycle Demonstration Town in Peterhead.

Public transport provision is an essential plank within the current LTS, and the role that it has to play in modal shift is crucial. Within the LTS there is an emphasis on improving public transport with the introduction of initiatives to provide multi-operator ticketing, use of alternative fuels, provision of new transport interchanges and the ongoing development of Demand Responsive Transport services. In 2010, Aberdeenshire Council produced the Bus Information Strategy¹³, setting out the content and standards of information expected of the Council and operators in relation to timetable leaflets, maps, bus stop information, real-time passenger information and internet information, amongst others.

Aberdeenshire Council continues to support pilot initiatives such as the IT Hot Stop initiatives in Peterhead and Huntly, reducing business mileage and the need to travel for meetings through the use of information and communication technology. At Ellon Park and Ride, the Council has also installed free to use Wi-Fi capability to the waiting room as a means of increasing the appeal of public transport.

In 2011, the Council launched a public consultation into the redevelopment of a new LTS, asking residents for their views on what the future transport priorities should be in Aberdeenshire. It is anticipated that the new LTS will be approved towards the end of this year.

6 Climate Change Strategies

The Climate Change Action Plan 2010-2011¹⁴ sets out how we are working towards the goal of carbon neutrality. This Plan takes into account the public bodies' duties imposed under the Climate Change (Scotland) Act 2009. The aim of this plan is to set out the structure, governance and projects that will help the Council to deliver its duties under the act and work towards achieving the Council's ambition of being carbon neutral by 2020.

The Climate Change Action Plan targets reductions in CO₂ emissions from council owned and operated buildings, municipal waste to landfill, transport and business mileage of council staff which, it is anticipated, should also provide reductions in pollutants of concern in the local air quality management regime.

In achieving this goal, there will be a focus on:

- Minimising the requirement for energy
- Minimising actions which result in greenhouse gas emissions
- Maximising the generation of carbon neutral energy

Use of "offsetting" only as a last resort to match net carbon emissions

In terms of planning for all new developments, Aberdeenshire Council has produced the (draft) Local Development Plan 2010¹⁵, which along with supplementary planning guidance will help to tackle the challenges of sustainable development and climate change. In addition, national building standards were amended in October 2010 to ensure all new buildings are developed to a more energy efficient design and construction.

7 Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

The new monitoring data indicates that concentrations of NO₂ are below the air quality objectives. The monitoring sites represent areas of relevant exposure in urban areas at both background locations and close to busy roads.

There are no Air Quality Management Areas within the Aberdeenshire Council geographical area.

There is no requirement to proceed to Detailed Assessment.

7.2 Conclusions relating to New Local Developments

Aberdeenshire Council has identified the following new or previously unidentified local developments which may impact on air quality in the Local Authority area.

- Score Energy, Peterhead
- Proposed Crematoria at Crimond and/or Mintlaw
- Paint Spraying activities not covered by PPC regime

- New biomass combustion plant (listed in Table 3.3)

- New developments where planning permission has been granted (listed in Table 4.1)

These will be taken into consideration in the next Updating and Screening Assessment, scheduled for 2012.

7.3 Proposed Actions

The new monitoring data indicates that concentrations of NO₂ are below air quality objectives. There is no requirement to proceed to Detailed Assessment at this time. Trend data for NO₂ concentrations has been considered. No significant trends have been identified, and it is concluded that no further action is necessary.

Consideration of new local developments in Chapter 3 and planning applications in Chapter 4 has led to the identification of 19 new developments where there might be an impact on local air quality. In addition, SEPA has requested that paint spraying activities not covered by the PPC regime are examined in terms of any impact on local air quality. These developments and activities will be considered in the next Updating and Screening Assessment, scheduled for April 2012.

In terms of new biomass development, Aberdeenshire Council will continue to identify and collate technical information regarding biomass installations for which details are submitted under the planning regime, and will also continue to seek, identify and collate technical information for those installations not controlled by the planning regime but where there may be an impact on local air quality. This information will be held in an inventory of known biomass installations throughout the Aberdeenshire Council area. Aberdeenshire Council will carry out screening assessments of all identified new biomass installations in the next Updating and Screening Assessment, scheduled for 2012.

The next action for Aberdeenshire Council under Review and Assessment will be the submission of the Updating and Screening Assessment in April 2012.

8 References

- 1 Aberdeenshire Council, *Air Quality Updating and Screening Assessment for Aberdeenshire Council 2003 for Aberdeenshire Council*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, July 2003
- 2 Aberdeenshire Council, *Local Air Quality Management Progress Report 2004*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, April 2004
- 3 Aberdeenshire Council, *Local Air Quality Management Progress Report 2005*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, April 2005
- 4 Aberdeenshire Council, *Air Quality Updating and Screening Assessment 2006 for Aberdeenshire Council*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, August 2006
- 5 Aberdeenshire Council, *Local Air Quality Management Progress Report 2007*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, April 2007
- 6 Aberdeenshire Council, *Local Air Quality Management Progress Report 2008*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, April 2008
- 7 Aberdeenshire Council, *Air Quality Updating and Screening Assessment 2009 for Aberdeenshire Council*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, July 2009
- 8 Aberdeenshire Council, *Local Air Quality Management Progress Report 2010*, available at <http://www.aberdeenshire.gov.uk/environmental/atmosphere.asp>, July 2010
- 9 *Local Air Quality Management Technical Guidance LAQM.TG(09)* (PB13215 February 2009), London: Department for Environment, Food and Rural Affairs
- 10 EEA (European Environment Agency), *Emission Inventory Guidebook (Technical Report No 9/09) (2009)*, available at <http://www.eea.europa.eu/publications/emep-eea-emission-inventory-guidebook-2009/>
- 11 Aberdeenshire Council, *Local Transport Strategy 2007-10*, available at <http://www.aberdeenshire.gov.uk/transportation/lts/index.asp>, April 2007
- 12 Aberdeenshire Council, *Walking and Cycling Action Plan*, available at <http://www.aberdeenshire.gov.uk/transportation/strategy/WalkingandCyclingStrategy.asp>, August 2009
- 13 Aberdeenshire Council, *Bus Information Strategy*, available at <http://www.aberdeenshire.gov.uk/publictransport/policies/infostrategy.asp>, April 2010
- 14 Aberdeenshire Council, *Climate Change Action Plan 2010-11*, available at <http://www.aberdeenshire.gov.uk/green/Final2010-11CCAPpdf.pdf>, November 2010
- 15 Aberdeenshire Council, *Local Development Plan 2010*, available at <http://www.aberdeenshire.gov.uk/planning/ldp/ProposedPlanprinting.pdf>, July 2010

Appendices

Appendix A: Diffusion Tube Raw Data and Trends

Appendix B: QA/QC Data

Appendix C: Maps

Appendix A: Diffusion Tube Raw Data & Trends

Appendix A.1: NO₂ Diffusion Tube Raw Data

Appendix A.2: Trend Data

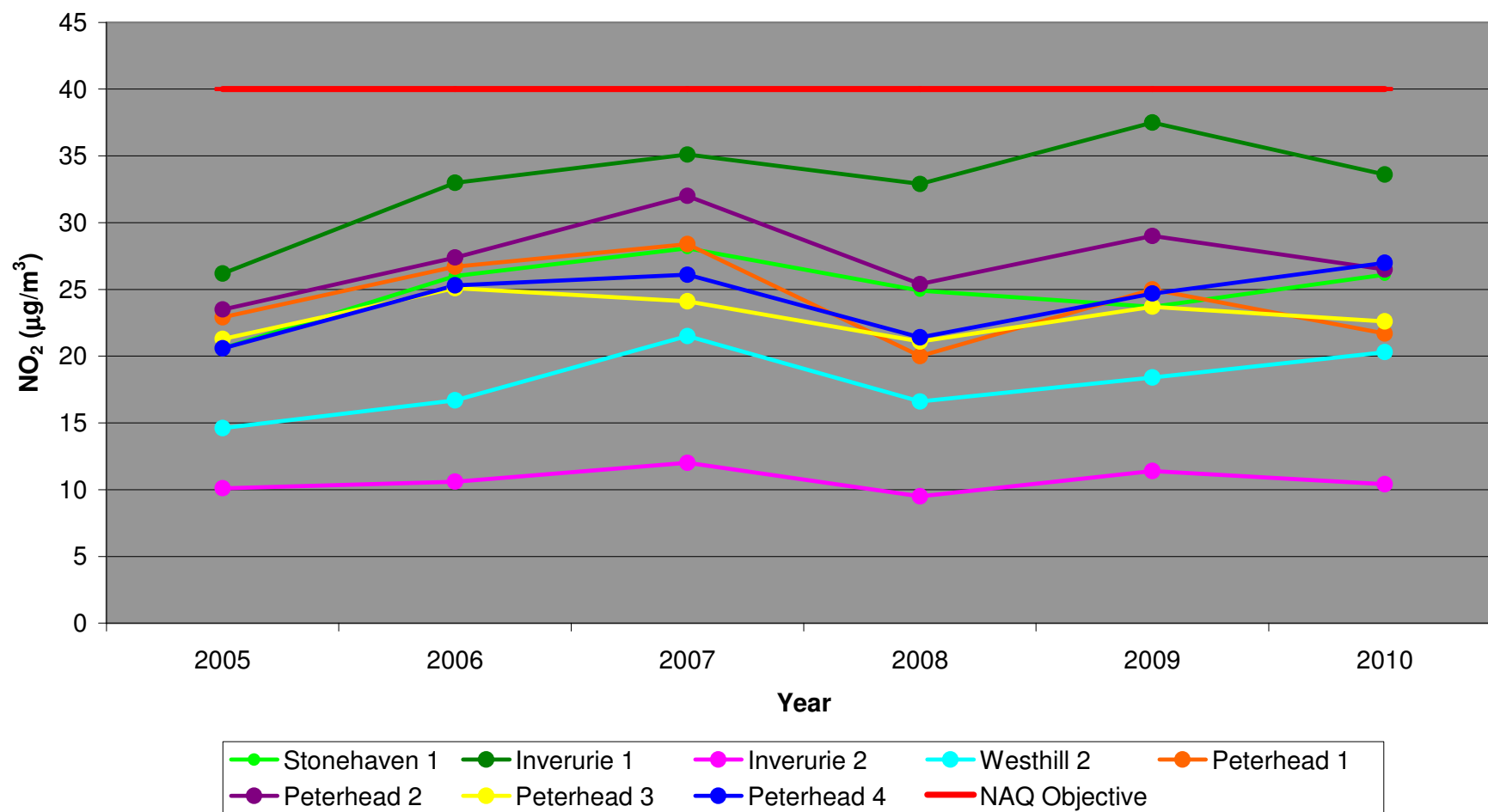
Appendix A.1: Diffusion Tube Raw Data

Table A.1: Raw Nitrogen Dioxide Diffusion Tube Data from Periods 1-12 in Year 2010

	Period (2010)											
Site ID	1	2	3	4	5	6	7	8	9	10	11	12
Inverurie 1	51.0	48.0	46.0	42.0	35.0	32.0	30.0	35.0	33.0	42.0	45.0	57.0
Inverurie 2	21.0	19.0	15.0	10.0	8.0	7.0	7.0	9.0	10.0	12.0	18.0	22.0
Peterhead 1	26.0	26.0	23.0	29.0	27.0	25.0	28.0	22.0	27.0	32.0	26.0	28.0
Peterhead 2	N/A	39.0	31.0	35.0	28.0	32.0	32.0	27.0	30.0	37.0	33.0	38.0
Peterhead 3	32.0	32.0	32.0	26.0	24.0	25.0	21.0	20.0	29.0	35.0	31.0	39.0
Peterhead 4	29.0	N/A	29.0	28.0	24.0	26.0	27.0	24.0	29.0	N/A	30.0	37.0
Stonehaven 1	N/A	N/A	30.0	28.0	24.0	30.0	19.0	N/A	26.0	26.0	N/A	N/A
Westhill 2	33.0	35.0	22.0	22.0	19.0	21.0	16.0	22.0	24.0	25.0	30.0	33.0

Key:

	Tube lost or unobtainable due to scaffolding etc
	Exposure period too long or too short (by a factor greater than +/- 2 days)
	Valid data

Appendix A.2: Nitrogen Dioxide Diffusion Tube Trend over Years 2005-2010**Figure A.1 - NO₂ Diffusion Tube Results 2005-10**

Appendix B: QA/QC Data

Diffusion Tube Bias Adjustment Factors

The laboratory analysis of the passive diffusion tubes used by the Council is undertaken by Aberdeen City Council public analyst. Aberdeen City Council public analyst is a UKAS accredited laboratory with documented Quality Assurance/Quality Control (QA/QC) procedures for diffusion tube analysis. The laboratory prepares the diffusion tubes using the 20% triethanolamine (TEA) in water method.

The 2010 bias adjustment factor for Aberdeen City Council Laboratory of the Public Analyst was obtained from the National Diffusion Tube Bias Adjustment Spreadsheet (available at <http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>) and is presented in Table B.1.

Table B.1 Details of 2010 Bias Adjustment Factors for Aberdeen City Council Public Analyst

Method	Year	Site type	Local authority	Study length (mths)	Diffusion tube mean conc. (µg/m ³)	Automatic monitor mean conc. (µg/m ³)	Bias	Tube precision	Bias Adjustment factor (Cm/Dm)
20% TEA in Water	2010	K	Marylebone Rd Inter-comparison	12	114	93	22.7 %	G	0.82
20% TEA in Water	2010		Overall Factor (1 study)				Use		0.82

Factor from Local Co-location Studies

Aberdeenshire Council does not undertake any co-location studies.

QA/QC of diffusion tube monitoring

Aberdeen City Council public analyst participates in the WASP scheme, with performance during the period April 2009 – April 2010 rated as **GOOD** (available at http://laqm.defra.gov.uk/documents/Summary_of_Laboratory_Performance_in_WASP_R105-109.pdf)

The National Diffusion Tube Bias Adjustment Spreadsheet, detailed in Table B.1, presents Tube Precision as **GOOD**.

Short-term to Long-term Data adjustment

Sites chosen to obtain the annualisation ratio are detailed in Table B.2

Table B.2 Annualisation Ratio Data

Site	Site Type	Annual Mean	Period Mean	Ratio
Inverurie 1	Kerbside	41.0	36.3	1.129
Inverurie 2	Roadside	12.7	9.5	1.337
Westhill 2	Kerbside	24.7	20.7	1.193
			Average	1.220

There were 2 sites (Stonehaven 1 and Peterhead 4) where the annual data capture was below 75% and consequently the captured data for these sites was subject to annualisation as per the instructions given in Box 3.2 of TG(09)⁹.

Data was captured from the Stonehaven 1 site across monitoring periods 3-7 (inclusive) and monitoring period 9 in order to obtain 6 months data. Data was also available from the Peterhead 4 site across these periods. Consequently, the period mean data was calculated across these monitoring periods.

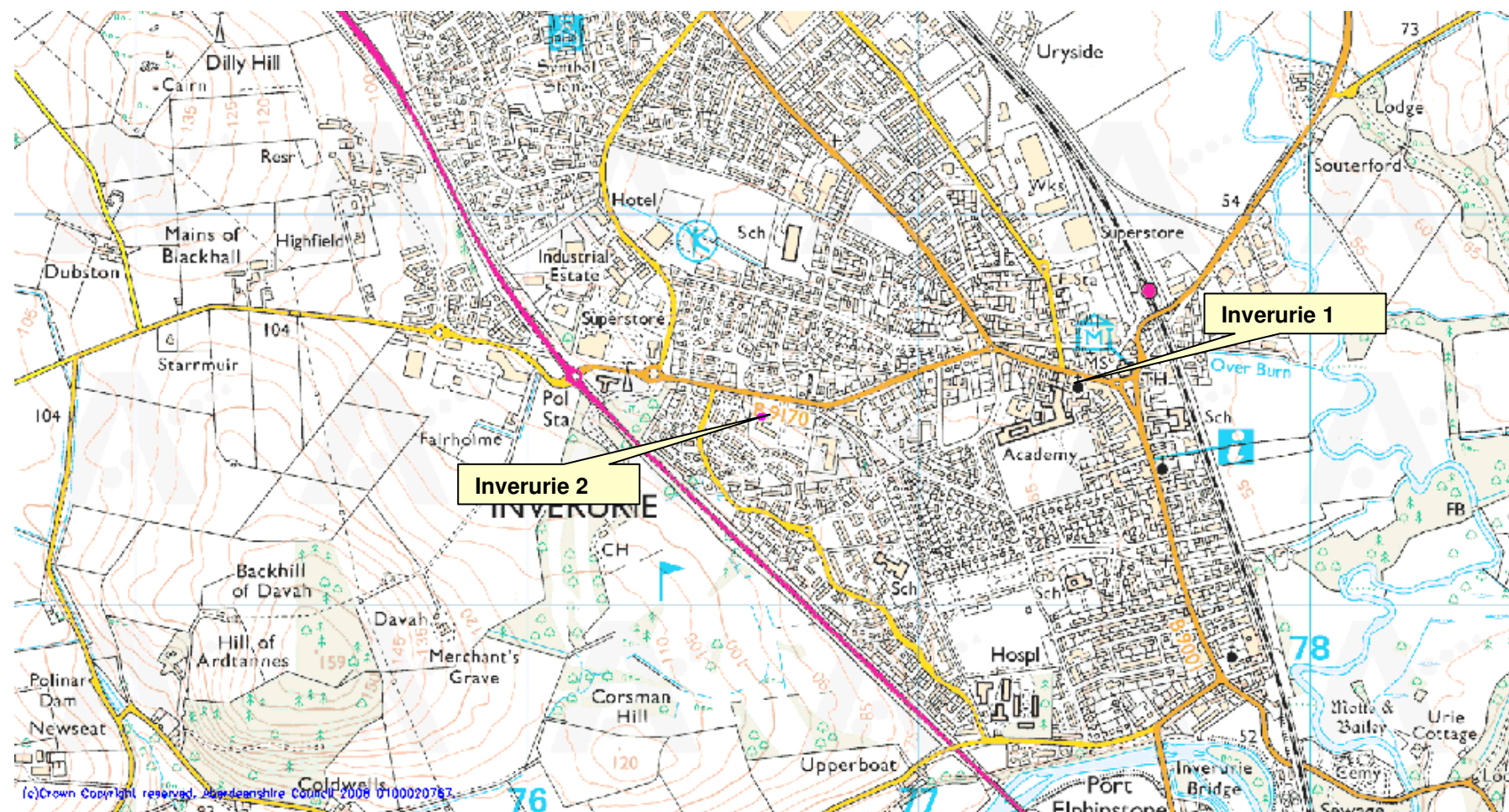
Appendix C: Maps

- | | |
|----------------|---|
| Map C.1 | Settlements in Aberdeenshire where NO₂ Diffusion Tube Monitoring was undertaken during 2010 |
| Map C.2 | Location of NO₂ Diffusion Tube Sites (Inverurie) |
| Map C.3 | Location of NO₂ Diffusion Tube Sites (Peterhead) |
| Map C.4 | Location of NO₂ Diffusion Tube Sites (Stonehaven) |
| Map C.5 | Location of NO₂ Diffusion Tube Sites (Westhill) |
| Map C.6 | Locations of Identified Biomass Installations throughout Aberdeenshire |

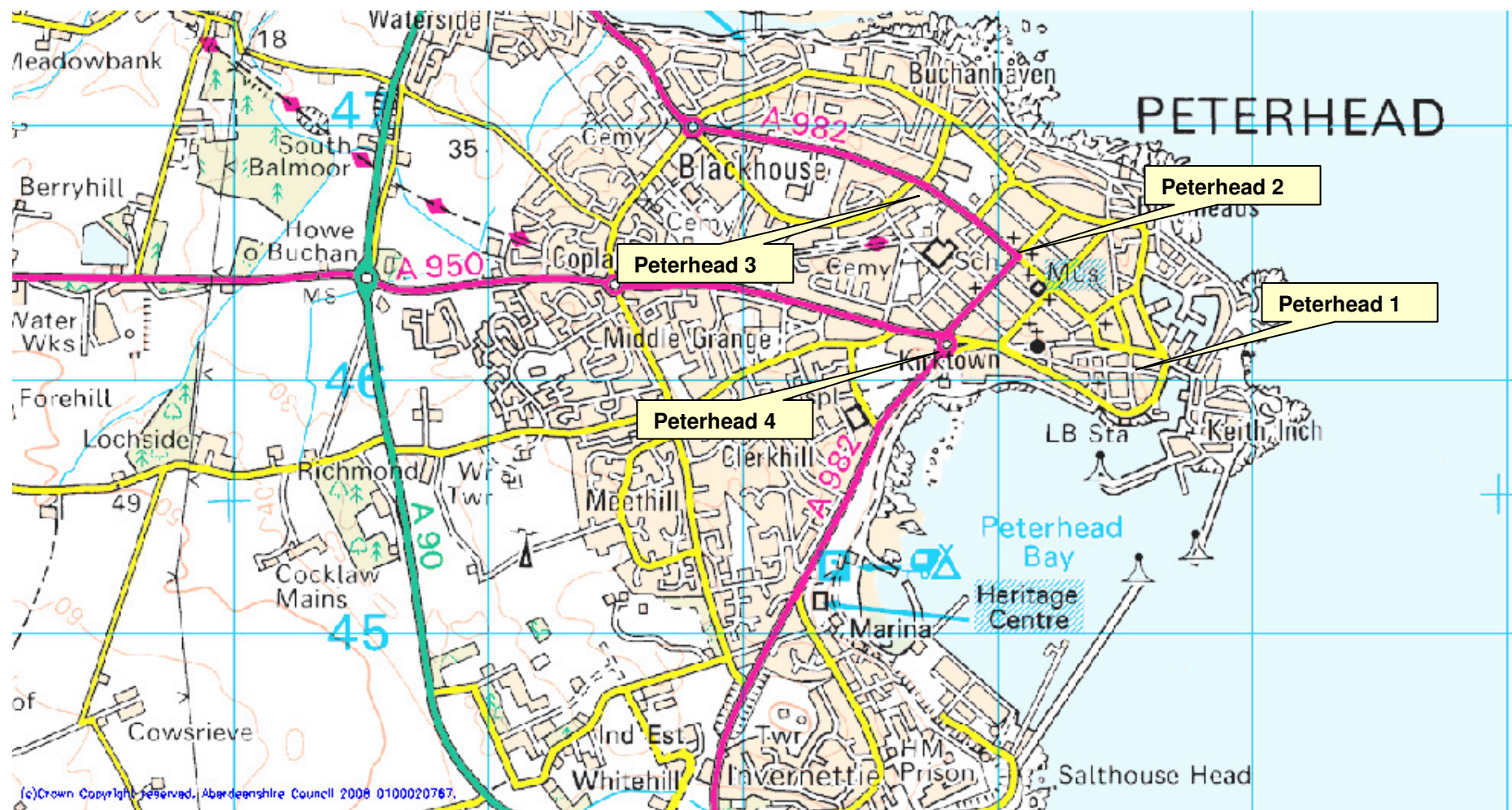
Map C.1 Settlements in Aberdeenshire where NO₂ Diffusion Tube Monitoring was undertaken during 2010



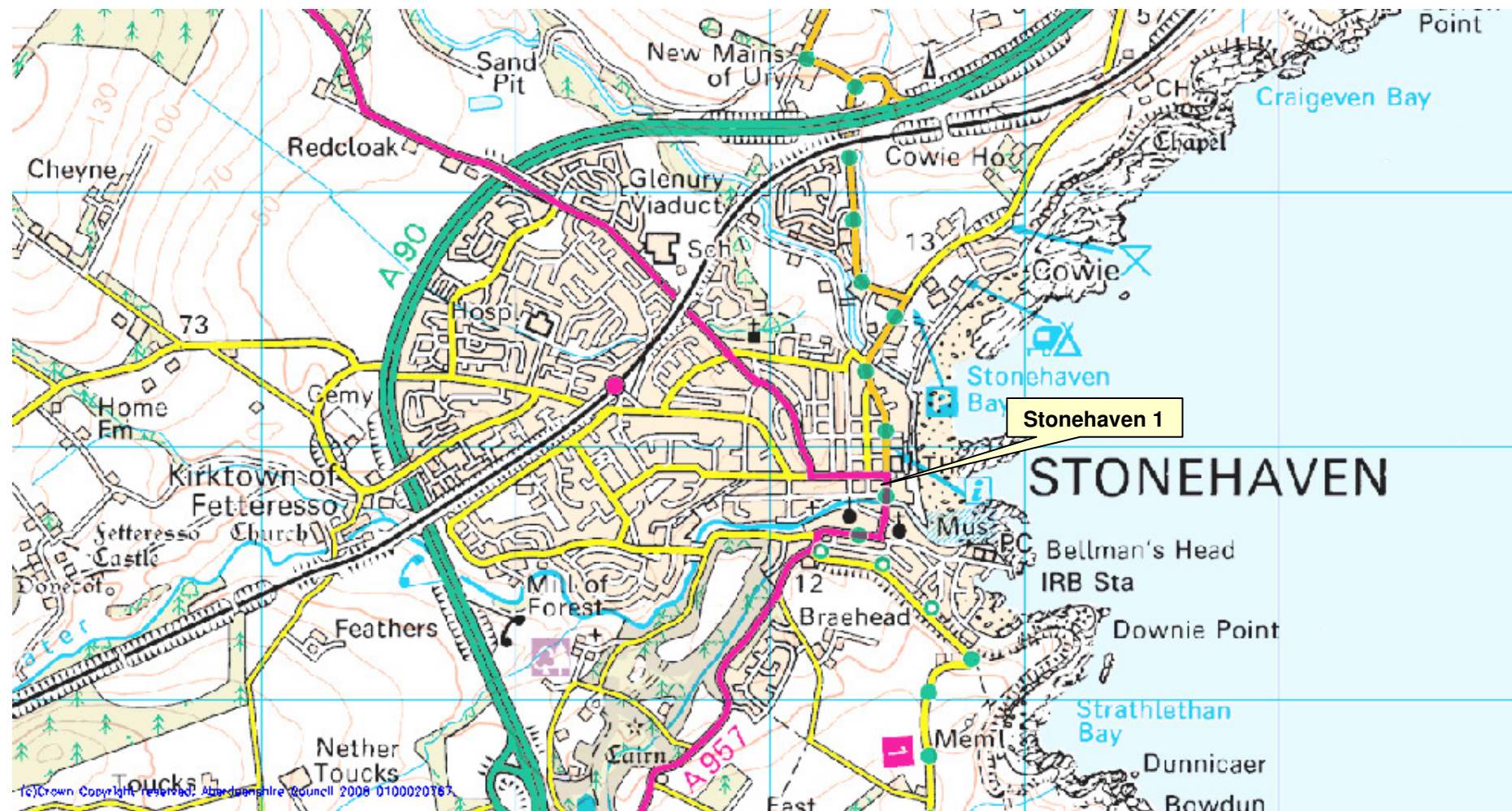
Map C.2 Location of NO₂ Diffusion Tube Sites (Inverurie)



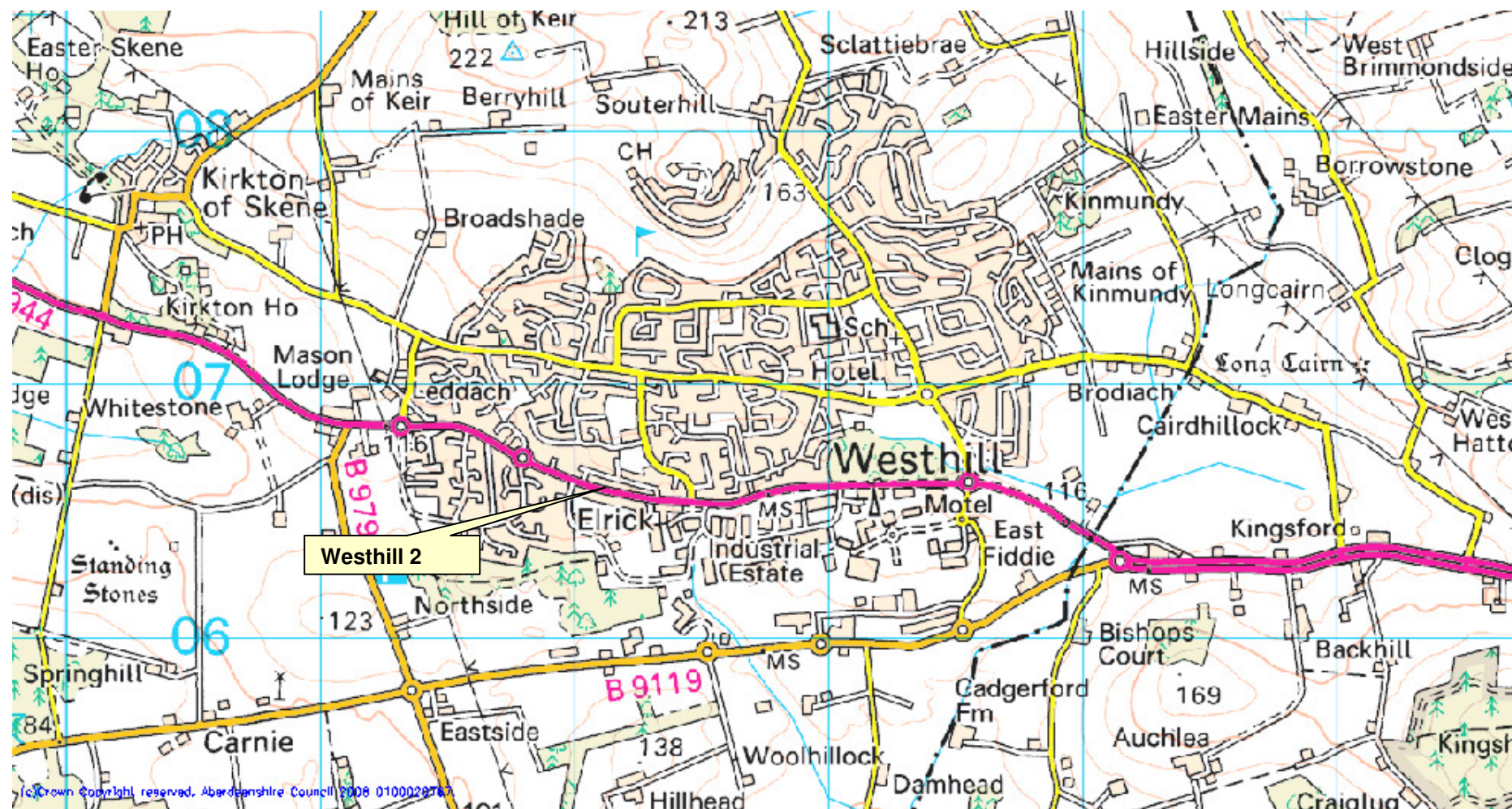
Map C.3 Location of NO₂ Diffusion Tube Sites (Peterhead)



Map C.4 Location of NO₂ Diffusion Tube Sites (Stonehaven)



Map C.5 Location of NO₂ Diffusion Tube Sites (Westhill)



Map C.6 Locations of Identified Biomass Installations throughout Aberdeenshire

