2012 Air Quality Updating and Screen Assessment for

Sheffield City Council

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

October 2012

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Executive Summary

This report is the Updating and Screening Assessment USA, which is prepared as part of the ongoing Local Air Quality Management (LAQM) process.

Previous assessments have shown there to be a problem with the likelihood of exceedence of the DEFRA objectives for nitrogen dioxide and PM10 (fine particulate).

For this reason an Air Quality Management Area (AQMA), covering the whole of the urban area, has previously been designated for nitrogen dioxide (annual mean objective), for nitrogen dioxide (hourly mean objective) and PM10 (24 hour mean).

An Air Quality Action Plan (AQAP) was drawn up in 2003 to try to improve air quality (nitrogen dioxide) in the AQMA. This has proved ineffective and any successes of the AQAP, in improving air quality, have been negated by the general increase in traffic levels.

At present a new AQAP is being produced (at present going through the council Cabinet process) for nitrogen dioxide and PM10. More ambitious measures will be needed to improve air quality.

There is a well established air quality monitoring network in the city, comprising both automatic stations and diffusion tubes. There were many problems with data collection from the automatic stations in 2011, which are largely related to the aging monitoring equipment.

Monitoring shows that nitrogen dioxide is still likely to be exceeding DEFRA air quality objectives. Traffic is the major source of these pollutants and Nitrogen dioxide levels do not appear to be reducing. It appears that the AQMA for nitrogen dioxide is unlikely to be revoked in the foreseeable future.

For PM10 no objectives are exceeded, but further investigation will be required before the AQAP can be revoked.

It has previously been predicted, by computer modelling, that if traffic levels in the city were reduced to 1991 levels (with 2011 engine technology) the nitrogen dioxide objective could be met in most places.

No other pollutants, apart from nitrogen dioxide and PM10, are thought to exceed DEFRA objectives.

As the whole of the Sheffield urban area is designated as an AQMA for nitrogen dioxide and PM10 no Detailed Assessment will be required.

The next reports as part of LAQM will be Progress Report in 2013.

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1 Introduction

1.1 Description of Local Authority Area

Sheffield is one of England's largest cities and a metropolitan borough in South Yorkshire, England. Sheffield is located fairly centrally in Britain and gained its city charter in 1893 and officially became titled the City of Sheffield.

Lying directly to the east of Sheffield is Rotherham, from which it is separated by the M1 motorway. On its northern border is Barnsley Metropolitan Borough and to the south and west is the county of Derbyshire. Sheffield is the only city to include part of a national park, the Peak District, within its borders.

Sheffield is geographically very diverse. The urban area nestles in a natural bowl created by seven hills and the confluence of five rivers: the Don, Sheaf, Rivelin, Loxley and Porter. Much of the city is built on these hillsides, with views into the city centre or out to open countryside. The city's lowest point is just 10 metres above sea level, whilst some parts of the city are at over 500 metres above sea level.

The city enjoys a wide variety of habitats, comparing favorably with any city in the United Kingdom: urban, sub-urban, parkland and woodland, agricultural and arable land, meadow and freshwater. Large parts of the city are designated as sites of special scientific interest. With an estimated total of over two million trees, Sheffield has more trees per person than any other city in Europe. It has over 170 woodlands, 78 public parks and 10 public gardens. Added to this are 135 km^2 of national park and almost 11 km^2 of water, resulting in 61 percent of the city comprising green space.

The present city boundary was largely set in 1974, when the former county borough of Sheffield merged with Stocksbridge Urban District and two civil parishes from Wortley Rural District. It covers a total area of 368 km^2.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 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 exceedences are considered likely, the local authority must then 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu g/m^3$ (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 LAQM in England

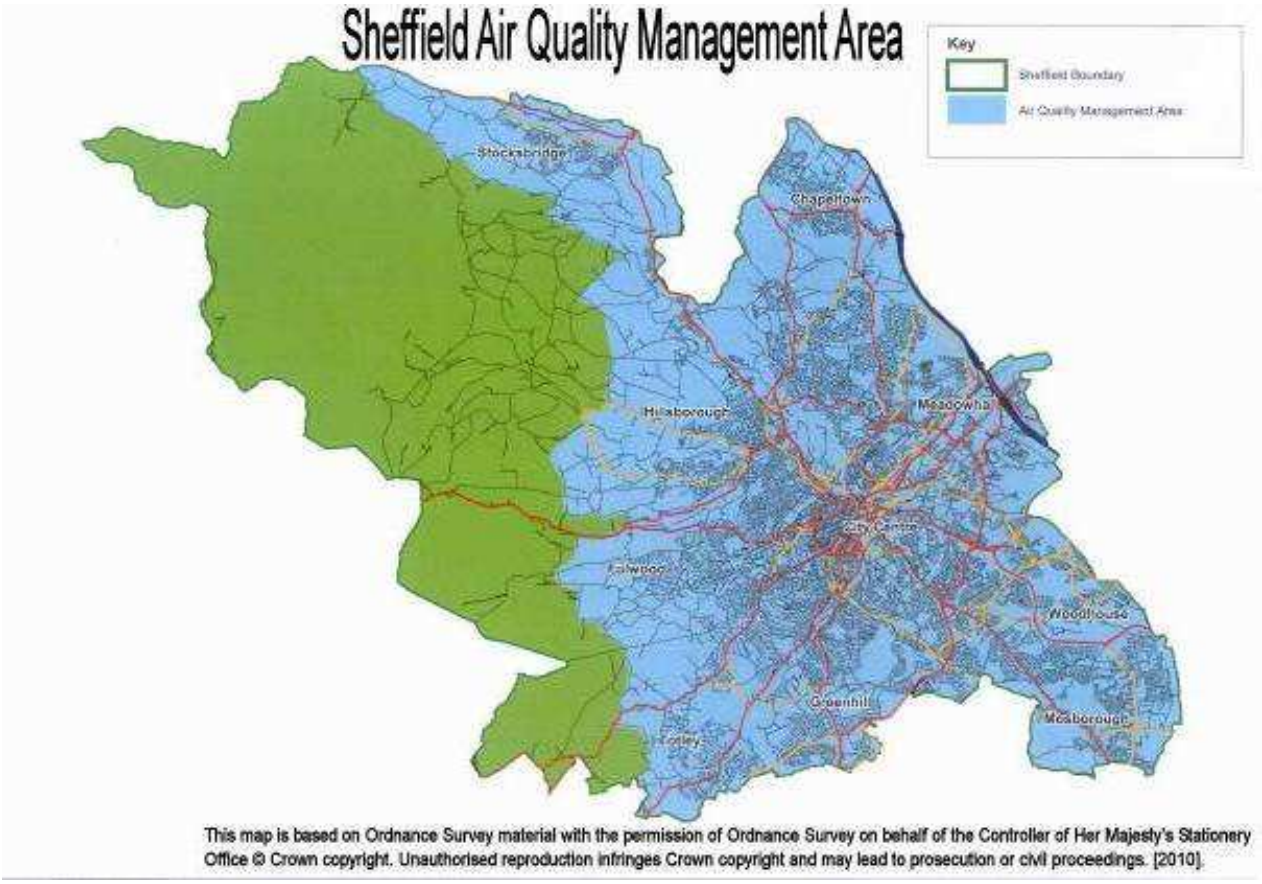
Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Report and year	Conclusion to report	Further work required.
2001 Stages 1, 2 and 3 Review and Assessment of Air Quality.	Two areas in the city were predicted to be above the annual objective for nitrogen dioxide.	Air Quality Action Plan, Further Assessment of NO2 and two Air Quality Management Areas were required.
2002 2xAQMAs Designated		
2003 Air Quality Action Plan		
2003 Stage4 Further Assessment of Air Quality		
2003 Upgrading and Screening Assessment		Detailed Assessment of NO2
2004 Detailed Assessment for NO2	Urban area AQMA for NO2	Designate
2006 urban area AQMA designated.		
2006 Upgrading and Screening Assessment		Detailed Assessment for PM10
2007 Progress report for NO2		
2008 Detailed Assessment of PM10	AQMA required for PM10	Consultation then designate AQMA
2008 Progress report inc AQAP progress report.		
2008 Further Assessment of NO2.		
2009 Air Quality Updating and Screening Assessment	AQMA required for PM10	AQMA. Designated 2010
Progress Report 2010		An update of the Air Quality Action Plan, for both nitrogen dioxide and PM10, is currently in progress. A Progress Report will be carried out in 2011.
Progress Report 2011		No need to proceed to Detailed Assessment for any pollutant.

		Following Detailed Assessment of PM10 (2008) and Upgrading and Screening Assessment (2009) a Further Assessment of PM10 will be carried out. An update of the Air Quality Action Plan, for both nitrogen dioxide and PM10, is currently in progress. Will go to Cabinet June 2012

Figure 1.1 Map of AQMA Boundaries



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Figure 2.1 Map(s) of Automatic Monitoring Sites

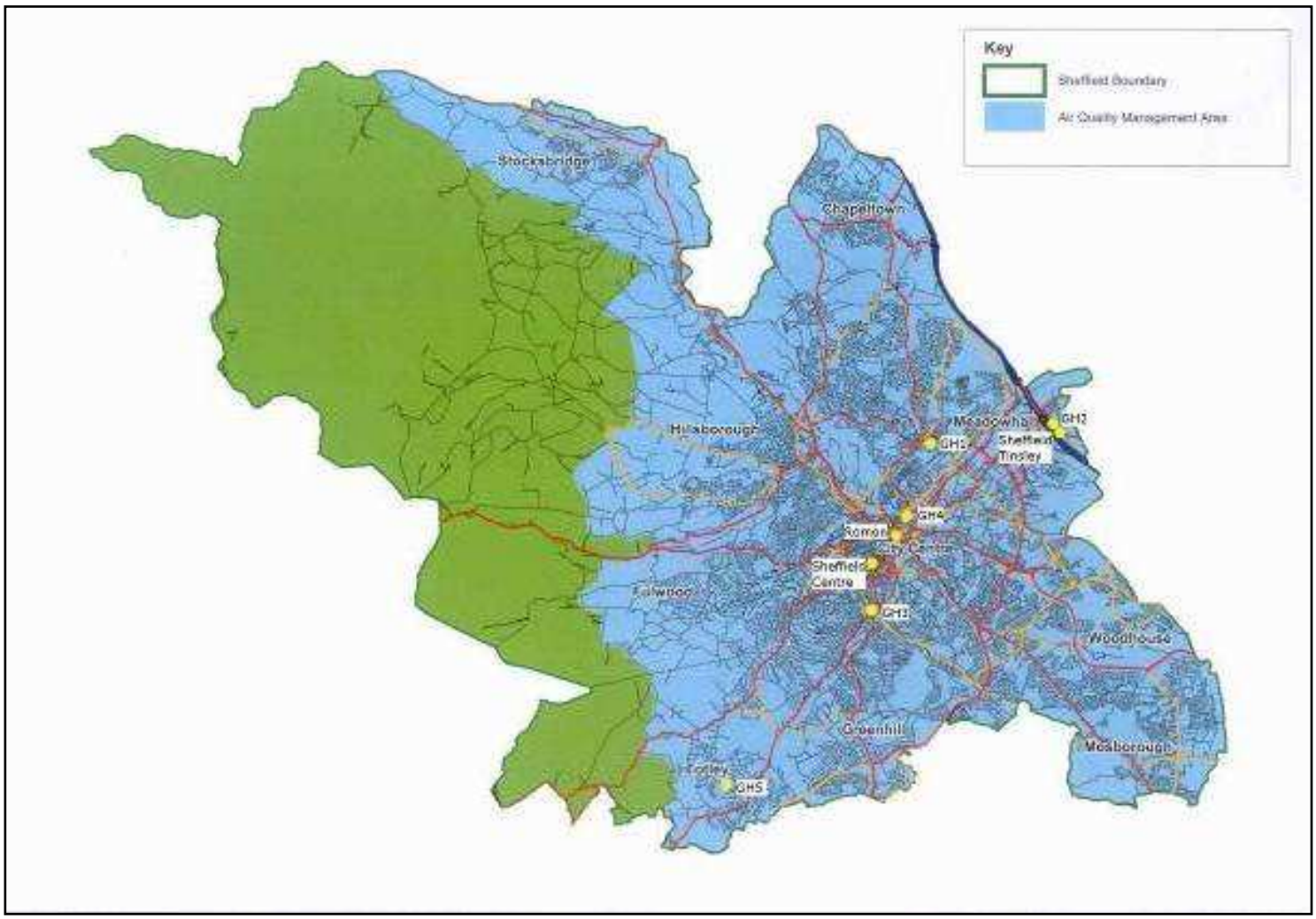


Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	Monitoring Technique	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
GH1 Firvale School	Urban Background	436990, 390218	NO2, PM10	Chemiluminescence, TEOM	Y	Y (1m)	10m	N
GH2 Tinsley Infant School	Urban Industrial	440077, 390794	NO2, PM10, PM2.5,	Chemiluminescence, TEOM,	Y	Y (1m)	90m M1	N
GH3 Lowfield School	Urban Centre	435181, 385366	NO2, PM10, SO2	Chemiluminescence, TEOM, UV Fluorescence	Y	Y (1m)	10m	N
GH4 Wicker	Urban Background	435959, 388021	NO2, PM10	Chemiluminescence, TEOM,	Y	Y (1m)	50m	N
GH5 King Ecgbert School	Urban Background	430977, 380760	NO2, PM10	Chemiluminescence, TEOM,	Y	N	100m	N
RM1 Waingate	Roadside	435750, 387647	NO2, PM10	Chemiluminescence, TEOM	Y	Y (1m)	3m	N
Sheffield Centre (defra)	Urban Centre	435158, 386885	NO2, PM10, PM2.5, SO2, , CO, Benzene	Chemiluminescence, TEOM, UV Fluorescence,, Gas filter correlation, pumped tube	Y	Y (1m)	20m	N
Sheffield Tinsley (defra)	Urban Industrial	440215, 390598	NO2	Chemiluminescence	Y	Y (1m)	120m M1	N

2.1.2 Non-Automatic Monitoring Sites

Table 2.2 Details of Non-Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Example 1	Urban background	332395,	433175	NO_2	Y	N	Y (1m)	3m	Y
Warren Lane	Roadside	436063	397474	NO_2	Y	N	Housing (10m)	5m	N
7 Bawtry Gate	Urban background	439995	390862	NO_2	Y	N	Housing (5m),	20m	N
47 Bawtry Road	Roadside	440045	390884	NO_2	Y		Housing (5m)	3m	N
109 Bawtry Road	Roadside	440177	390770	NO_2	Y	N	Housing (5m)	3m	N
Ecclesfield Road Low Wincobank	Roadside	438778	392008	NO_2	Y	N	Housing (1m)	2m	N
Attercliffe Road	Roadside	438880	389931	NO_2	Y	N	Housing (5m)	3m	N
Attercliffe Road duplicate	Roadside	438880	389931	NO_2	Y	N	Housing (5m)	3m	N
Barnsley Rd Fir Vale	Roadside	436492	390149	NO_2	Y	N	Housing (5m)	5m	N
Upwell Street	Roadside	437683	390091	NO_2	Y	N	Housing (2m)	2m	N
Burngreave Road/Minna Road	Roadside	435657	389110	NO_2	Y	N	Housing (5m)	5m	N
Loxley New Road	Roadside	432647	389427	NO_2	Y	N	Housing (1m)	3m	N
Loxley New Road-duplicate	Roadside	432647	389427	NO_2	Y	N	Housing (1m)	3m	N
Bowden Wood Close	Roadside	439051	386743	NO_2	Y		Housing (20m)	2m	N
Parkway Broad Lane	Roadside	436140	387527	NO_2	Y	N	Housing (5m)	2m	N
Parkway Broad Lane duplicate	Roadside	436140	387527	NO_2	Y	N	Housing (5m)	2m	N
Exchange Street	Urban centre	435899	387666	NO_2	Y	N	Y (1m)	20m	N
Duke Street	Roadside	436104	387458	NO_2	Y	N	Housing (5m)	3m	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Waingate	Urban centre	435739	387653	NO_2	Y	N	Y (1m)	5m	N
Fitzalan Square	Urban centre	435718	387470	NO_2	Y	N	Y (1m)	10m	N
Barkers Pool	Urban centre	435238	387181	NO_2	Y	N	Y (1m)	20m	N
Scotland Street	Urban background	434919	387768	NO_2	Y	N	Y (1m)	3m	N
Eldon St/ Wellington St	Urban centre	434885	386963	NO_2	Y	N	Y (1m)	3m	N
Broomspring Close	Roadside	434503	386893	NO_2	Y		Housing (5m)	100m	N
University Roundabout	Roadside	434434	387393	NO_2	Y	N	Housing (5m)	3m	N
Netherthorpe School	Roadside	434638	387828	NO_2	Y	N	School (5m)	3m	N
Upper Hanover Street	Roadside	434405	386966	NO_2	Y	N	Housing (5m)	3m	N
Shoreham St	Roadside	435554	386638	NO_2	Y	N	Y (1m)	3m	N
St Marys Road	Roadside	435494	386389	NO_2	Y	N	Housing (10m)	10m	N
Chesterfield Road/Woodseats Road	Roadside	434814	383335	NO_2	Y	N	Housing (5m)	3m	N
Queens Road/Edmund Rd	Roadside	435499	385690	NO_2	Y	N	Housing (5m)	3m	N
Abbeydale Road/Carter Knowle Road	Roadside	434324	384315	NO_2	Y	N	Housing (5m)	3m	N
Ecclesall Road	Roadside	434312	386287	NO_2	Y	N	Housing (10m)	3m	N
AUN	Urban centre	435135	386891	NO_2	Y	Y	Y (1m)	20m	N
AUN	Urban centre	435135	386891	NO_2	Y	Y	Y (1m)	20m	N
AUN	Urban centre	435135	386891	NO_2	Y	Y	Y (1m)	20m	N
ACE	Urban background	435959	388004	NO_2	Y	Y	Y (1m)	50m	N
ACE	Urban background	435959	388004	NO_2	Y	Y	Y (1m)	50m	N
Hillbro Corner	Roadside	433222	389608	NO_2	Y	N	Housing (5m)	3m	N
82 Bawtry Road	Roadside	440059	390854	NO_2	Y	N	Housing (5m)	3m	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
98 Bawtry Road	Roadside	440116	390800	NO_2	Y	N	Housing (5m)	3m	N
Redmires Road/Crimicar Lane	Suburban	429644	386391	NO_2	Y	N	N	2m	N
Coldwell Lane/Sandygate Road	Suburban	431193	386798	NO_2	Y	N	Housing (10m)	3m	N
Manchester Road/Sandygate Road	Roadside	432074	387081	NO_2	Y	N	Housing (2m)	5m	N
Manchester Road/Sale Road	Roadside	433013	386752	NO_2	Y	N	Housing (10m)	3m	N
Witham Road/Crookes	Roadside	433327	386863	NO_2	Y	N	Housing (2m)	2m	N
Witham Road/Moor Oaks	Roadside	433513	387034	NO_2	Y	N	Housing (2m)	3m	N
Western Bank/Northumberland Road	Roadside	433752	387230	NO_2	Y	N	Housing (10m)	3m	N
Western Bank/Clarkson Road	Roadside	434060	387228	NO_2	Y	N	Children's Hospital (5m)	3m	N
Brook Hill/Favell Road	Roadside	434352	387349	NO_2	Y		University (3m)	3m	N
Upper Hanover Street/Hounsfield Road	Roadside	434373	387181	NO_2	Y	N	Housing (10m)	20m	N
Crimicar Road/Hallamshire Road	Roadside	429793	385594	NO_2	Y	N	Housing (10m)	3m	N
Crimicar Road/Brookhouse Hill	Roadside	430355	385347	NO_2	Y	N	Housing (5m)	3m	N
Fulwood Road/Tom Lane	Roadside	431374	385750	NO_2	Y	N	Housing (10m)	3m	N
Fulwood Road/Gladstone Road	Roadside	431691	386027	NO_2	Y	N	Housing (10m)	3m	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Fulwood Road/Ashdell Road	Roadside	432970	386681	NO_2	Y	N	School (5m)	5m	N
Glossop Road/Peel Road	Roadside	433319	386794	NO_2	Y	N	Y (1m)	5m	N
Glossop Road/Westbourne Road	Roadside	433429	386729	NO_2	Y	N	Y (1m)	3m	N
Glossop Road/Clarkehouse Road	Roadside	433904	386844	NO_2	Y	N	Y (1m)	3m	N
West Street/Regent Street	Roadside	434664	387154	NO_2	Y		Y (1m)	2m	N
West Street/Leopold Street.	Roadside	435248	387366	NO_2	Y	N	Y (1m)	2m	N
Queens road Mecca	Roadside	435807	386350	NO_2	Y	N	Y (1m)	3m	N
Queens road Netto	Roadside	435695	385894	NO_2	Y	N	Y (1m)	3m	N
463 Queens road	Roadside	435492	385659	NO_2	Y	N	Housing (2m)	3m	N
London road -Sark Road	Roadside	435182	385241	NO_2	Y	N	Y (1m)	3m	N
London road - Ponsfords	Roadside	435163	384990	NO_2	Y	N	Y (1m)	3m	N
Chesterfield road - Meersbrook park road	Roadside	434965	384613	NO_2	Y		Housing (2m)	3m	N
513 Chesterfield road	Roadside	434682	383688	NO_2	Y	N	Housing (2m)	3m	N
Chesterfield road - Olivet road	Roadside	434860	382989	NO_2	Y	N	Housing (2m)	3m	N
Chesterfield road - Charles Ashmore road	Roadside	434905	381873	NO_2	Y	N	Housing (10m)	3m	N
Meadowhead road	Roadside	435137	381357	NO_2	Y	N	Housing (10m)	3m	N
GH3	Urban centre	435181	385366	NO_2	Y	Y	Y (1m)	3m	N
GH3	Urban centre	435181	385366	NO_2	Y	Y	Y (1m)	3m	N
GH3	Urban centre	435181	385366	NO_2	Y	Y	Y (1m)	3m	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Community - Broomhall									
Ruth Square	urban background	434556	386419	NO_2	Y	N	Housing 2m	N/A	N
Broomhall Road	urban background	434655	386465	NO_2	Y	N	Housing 2m	N/A	N
Hanover Methodist Church	urban background	434600	386515	NO_2	Y	N	Housing 2m	N/A	N
Springfield School	urban background	434040	386935	NO_2	Y	N	Housing 2m	N/A	N
Exeter Drive 1	urban background	434026	386436	NO_2	Y	N	Housing 2m	N/A	N
Exeter Drive 2	urban background	434373	386894	NO_2	Y	N	Housing 2m	N/A	N
Community - Crookes									
Wesleyan Chapel	urban background	432900	387301	NO_2	Y	N	Housing 2m	N/A	N
Arran Road	urban background	432602	387261	NO_2	Y	N	Housing 2m	N/A	N
Cross Lane	urban background	432551	387502	NO_2	Y	N	Housing 2m	N/A	N
Community - Foxhill									
Wolfe Road	urban background	433636	392357	NO_2	Y	N	Housing 2m	N/A	N
Keats Road	urban background	433529	392517	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Foxhill medical centre	urban background	433801	392479	NO_2	Y	N	Housing 2m	N/A	N
Birley Carr Church	urban background	433190	392029	NO_2	Y	N	Housing 2m	N/A	N
Chaucer School	urban background	434211	392211	NO_2	Y	N	Housing 2m	N/A	N
Housing office	urban background	434264	392297	NO_2	Y	N	Housing 2m	N/A	N
484 Deerlands Avenue	urban background	434213	392544	NO_2	Y	N	Housing 2m	N/A	N
Community - Greenhill									
Westwick Crescent	urban background	434132	381671	NO_2	Y	N	Housing 2m	N/A	N
Bocking Lane 1	urban background	434161	381060	NO_2	Y	N	Housing 2m	N/A	N
St Peter's Church	urban background	434152	381186	NO_2	Y	N	Housing 2m	N/A	N
Greenhill Library	urban background	434171	381275	NO_2	Y	N	Housing 2m	N/A	N
Bocking Lane 2	urban background	433611	381070	NO_2	Y	N	Housing 2m	N/A	N
Community - Handsworth & Darnall									
Highfields Highfield Lane	urban background	441765	386872	NO_2	Y	N	Housing 2m	N/A	N
St Mary's Church	urban background	441045	386207	NO_2	Y	N	Housing 2m	N/A	N
Fitzallan Road Handsworth	urban background	440761	386352	NO_2	Y	N	Housing 2m	N/A	N
Anglers Rest	urban	441812	386466	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
	background								
Handsworth Road 1	urban background	441393	385946	NO_2	Y	N	Housing 2m	N/A	N
Handsworth Road 2	urban background	440139	386141	NO_2	Y	N	Housing 2m	N/A	N
Shop Front Parkway R/A	urban background	438450	387088	NO_2	Y	N	Housing 2m	N/A	N
Retford Road	urban background	440550	386631	NO_2	Y	N	Housing 2m	N/A	N
Prince of Wales Road	urban background	440402	386805	NO_2	Y	N	Housing 2m	N/A	N
Greenland Junior School 1	urban background	440380	386828	NO_2	Y	N	Housing 2m	N/A	N
Greenland Junior School 2	urban background	440203	387013	NO_2	Y	N	Housing 2m	N/A	N
Greenland Court	urban background	440410	386130	NO_2	Y	N	Housing 2m	N/A	N
Darnall Medical Centre	urban background	439276	387550	NO_2	Y	N	Housing 2m	N/A	N
Nursery Handsworth Road	urban background	438995	388004	NO_2	Y		Housing 2m	N/A	N
Norfolk Arms Finchwell Road	urban background	439000	388019	NO_2	Y	N	Housing 2m	N/A	N
Handsworth nursery	urban background	439211	388591	NO_2	Y	N	Housing 2m	N/A	N
Retford Road	urban background	439324	388092	NO_2	Y	N	Housing 2m	N/A	N
BT Pole 62 Rotherham Road	urban background	440062	387623	NO_2	Y	N	Housing 2m	N/A	N
Community - Kelham Island									
Wicker	urban	435901	388068	NO_2	Y	N	Housing 2m	N/A	N

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	background								
Lady's Bridge	urban background	435792	387845	NO_2	Y	N	Housing 2m	N/A	N
Gibraltar Street	urban background	435214	387899	NO_2	Y	N	Housing 2m	N/A	N
Penistone Road	urban background	434806	388216	NO_2	Y	N	Housing 2m	N/A	N
Community - King Ecgbert School									
Back of School	urban background	431020	380901	NO_2	Y	N	Housing 2m	N/A	N
Car park	urban background	431094	380895	NO_2	Y	N	Housing 2m	N/A	N
Top of drive	urban background	430962	380738	NO_2	Y	N	Housing 2m	N/A	N
Tesco Express Abbeydale Road	urban background	431836	380676	NO_2	Y	N	Housing 2m	N/A	N
Ashfurlong Road	urban background	431492	381286	NO_2	Y	N	Housing 2m	N/A	N
Community - Melrose Burngreave									
Burngreave Road 1	urban background	435773	388948	NO_2	Y	N	Housing 2m	N/A	N
Burngreave Road 2	urban background	435805	388901	NO_2	Y	N	Housing 2m	N/A	N
Burngreave Road 3	urban background	435838	388853	NO_2	Y	N	Housing 2m	N/A	N
Burngreave Street	urban	435880	388835	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
junction	background								
Burngreave Road 4	urban background	435843	388814	NO_2	Y	N	Housing 2m	N/A	N
Community - Netheredge									
Junction Road	urban background	439953	390961	NO_2	Y	N	Housing 2m	N/A	N
Osbourne Road	urban background	440035	390828	NO_2	Y	N	Housing 2m	N/A	N
Montgomery Road	urban background	439852	390709	NO_2	Y	N	Housing 2m	N/A	N
Zeds Nether Edge Road	urban background	440411	390874	NO_2	Y	N	Housing 2m	N/A	N
Clifford School Psalter Lane	urban background	440199	390610	NO_2	Y	N	Housing 2m	N/A	N
Community - Tinsley									
Town Street	urban background	439953	390961	NO_2	Y	N	Housing 2m	N/A	N
Siemens Close	urban background	440035	390828	NO_2	Y	N	Housing 2m	N/A	N
Greasebro Road	urban background	439852	390709	NO_2	Y	N	Housing 2m	N/A	N
Ferrars Road	urban background	440411	390874	NO_2	Y	N	Housing 2m	N/A	N
Ingfield Avenue (Dr's Surgery)	urban background	440199	390610	NO_2	Y	N	Housing 2m	N/A	N
Sheffield Road back	urban background	440111	391199	NO_2	Y	N	Housing 2m	N/A	N
Ferrars Road	urban background	440400	390870	NO_2	Y	N	Housing 2m	N/A	N
Sheffield Road front	urban	440080	391250	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
	background								
Junior school building	urban background	440286	390541	NO_2	Y	N	Housing 2m	N/A	N
Junior school field	urban background	440242	390513	NO_2	Y	N	Housing 2m	N/A	N
Community – Carter Knowle									
981 Abbeydale Road	urban background	433640	383391	NO_2	Y	N	Housing 2m	N/A	N
La Scala, Abbeydale Rd /Archer Rd Jc	urban background	433601	383337	NO_2	Y	N	Housing 2m	N/A	N
102 Archer Rd	urban background	434188	383548	NO_2	Y	N	Housing 2m	N/A	N
Chippendale, Abbeydale Rd /Archer Rd	urban background	434123	383874	NO_2	Y	N	Housing 2m	N/A	N
879 Abbeydale Rd	urban background	434143	383915	NO_2	Y	N	Housing 2m	N/A	N
Community – Brunswick School									
Science Garden	urban background	442626	385025	NO_2	Y	N	Housing 2m	N/A	N
Millenium Garden	urban background	442627	384990	NO_2	Y	N	Housing 2m	N/A	N
Top of Car Park	urban background	442602	384996	NO_2	Y	N	Housing 2m	N/A	N
Top Yard	urban background	442648	384970	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Bottom yard	urban background	442613	384920	NO_2	Y	N	Housing 2m	N/A	N
Community – Hinde House single tubes									
Hinde House Lane	urban background	437132	390985	NO_2	Y	N	Housing 2m	N/A	N
Derbyshire Lane	urban background	435338	382924	NO_2	Y	N	Housing 2m	N/A	N
Winchester Avenue Front	urban background	430001	385968	NO_2	Y	N	Housing 2m	N/A	N
Winchester Avenue Back	urban background	430008	385978	NO_2	Y	N	Housing 2m	N/A	N
Community – Deepcar /Stocksbridge									
Lidl (Tube 2)	urban background	427257	398421	NO_2	Y	N	Housing 2m	N/A	N
PO (Tube 3)	urban background	428189	398209	NO_2	Y	N	Housing 2m	N/A	N
Carr Road (Tube 1)	urban background	428818	397977	NO_2	Y	N	Housing 2m	N/A	N
Community – Penistone Road									
SCT Bedford St/Penistone Road	urban background	434622	388387	NO_2	Y	N	Housing 2m	N/A	N
Regent Court Floor 7, Hillsborough	urban background	433572	389761	NO_2	Y	N	Housing 2m	N/A	N

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Catchbar Lane Traffic Light	urban background	433087	390643	NO_2	Y	N	Housing 2m	N/A	N
Broughton Rd /Penistone Rd	urban background	433515	390188	NO_2	Y	N	Housing 2m	N/A	N
Walkley Lane Newsagent Rear	urban background	433320	389323	NO_2	Y	N	Housing 2m	N/A	N
Walkley Lane Newsagent Front	urban background	433308	389319	NO_2	Y	N	Housing 2m	N/A	N
Regent Court Driveway	urban background	433505	389783	NO_2	Y	N	Housing 2m	N/A	N
Community – Breatheasy Group									
Manor Oaks Close	urban background	437200	387116	NO_2	Y	N	Housing 2m	N/A	N
Ridgeway Rd	urban background	438171	384707	NO_2	Y	N	Housing 2m	N/A	N
Harborough Ave	urban background	438194	386634	NO_2	Y	N	Housing 2m	N/A	N
Houstead Rd	urban background	439862	387360	NO_2	Y	N	Housing 2m	N/A	N
Argyle Close	urban background	435574	384224	NO_2	Y	N	Housing 2m	N/A	N

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Table 2.3 Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA ?	Valid Data Capture for period of monitoring %[a]	Valid Data Capture 2011 % [b]	Annual Mean Concentration µg/m^3				
					2007*[c]	2008* [c]	2009* [c]	2010* [c]	2011 [cd]
GH1	Firvale School	Y		59	-	-	29	29	21
GH2	Tinsley Infant School	Y		55	**46**	**41**	33	33	36
GH3	Lowfield School	Y		42	31	33	36	-	**41**
GH4	Wicker	Y		26	38	36	24	-	36
GH5	King Ecgberts	Y		0	-	14	13	12	-
RM1	Waingate	Y		55	**50**	**59**	**56**	**68**	**53**
LC2	Sheffield Centre	Y		95	34	30	37	39	34
LS8	Sheffield Tinsley	Y		99	-	-	34	35	34

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.
*Annual mean concentrations for previous years are optional.
[d] Not annualised as low data capture was due to communication problems, data loss was throughout the period.

Table 2.4 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring %[a]	Valid Data Capture 2011 % [b]	Number of Exceedences of Hourly Mean (200 μg/m^3)				
					2007*[c]	2008* [c]	2009* [c]	2010* [c]	2011 [c]
GH1	Firvale School	Y		59	-	-	0(110)	0(95)	0(94)
GH2	Tinsley Infant School	Y		55	0	5	0(118)	0(109)	0(130)
GH3	Lowfield Schoo	Y		42	0	1	4(136)	-	0(140)
GH4	Wicker	Y		26	0	0 (100)	0(80)	-	0(130)
GH5	King Ecgberts	Y		0	-	0 (80)	0(70)	0(55)	-
RM1	Waingate	Y		55	10	**47** (240)	15(210)	18(218)	18(210)
LC2	Sheffield Centre	Y		95	0	4	0(118)	0(153)	0(128)
LS8	Sheffield Tinsley	Y		99	-	1 (n/a)	0(126)	0(181)	0(136)

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] If the period of valid data is less than 90%, include the 99.8th percentile of hourly means in brackets
*Number of exceedences for previous years are optional.

Diffusion Tube Monitoring Data

Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
1	Warren Lane	Roadside	Y	N	67%	Y	N	28
2	7 Bawtry Gate	Urban background	Y	N	67%	Y	N	**45**
3	47 Bawtry Road	Roadside	Y	N	67%	Y	N	**51**
4	109 Bawtry Road	Roadside	Y	N	67%	Y	N	**43**
5	Ecclesfield Road Low Wincobank	Roadside	Y	N	67%	Y	N	**47**
6	Attercliffe Road	Roadside	Y	N	67%	Y	N	**42**
7	Attercliffe Road duplicate	Roadside	Y	N	67%	Y	N	**43**
8	Barnsley Rd Fir Vale	Roadside	Y	N	67%	Y	N	**45**
9	Upwell Street	Roadside	Y	N	67%	Y	N	37
10	Burngreave Road/Minna Road	Roadside	Y	N	67%	Y	N	36
11	Loxley New Road	Roadside	Y	N	67%	Y	N	35
12	Loxley New Road-duplicate	Roadside	Y	N	67%	Y	N	35
13	Bowden Wood Close	Roadside	Y	N	67%	Y	N	37
14	Parkway Broad Lane	Roadside	Y	N	67%	Y	N	**40**
15	Parkway Broad Lane duplicate	Roadside	Y	N	67%	Y	N	**40**
16	Exchange Street	Urban centre	Y	N	67%	Y	N	38
17	Duke Street	Roadside	Y	N	67%	Y	N	**43**
18	Waingate	Urban centre	Y	N	67%	Y	N	**53**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
19	Fitzalan Square	Urban centre	Y	N	67%	Y	N	**51**
20	Barkers Pool	Urban centre	Y	N	67%	Y	N	33
21	Scotland Street	Urban background	Y	N	58%	Y	N	26
22	Eldon St/ Wellington St	Urban centre	Y	N	42%	Y	N	**42**
23	Broomspring Close	Roadside	Y	N	67%	Y	N	23
24	University Roundabout	Roadside	Y	N	67%	Y	N	**50**
25	Netherthorpe School	Roadside	Y	N	67%	Y	N	37
26	Upper Hanover Street	Roadside	Y	N	58%	Y	N	38
27	Shoreham St	Roadside	Y	N	67%	Y	N	**43**
28	St Marys Road	Roadside	Y	N	58%	Y	N	31
29	Chesterfield Road /Woodseats Road	Roadside	Y	N	67%	Y	N	38
30	Queens Road/ Edmund Rd	Roadside	Y	N	67%	Y	N	36
31	Abbeydale Road/Carter Knowle Road	Roadside	Y	N	67%	Y	N	39
32	Ecclesall Road	Roadside	Y	N	67%	Y	N	**43**
33	AUN	Urban centre	Y	T&C	67%	Y	N	30
34	AUN	Urban centre	Y	T&C	67%	Y	N	29
35	AUN	Urban centre	Y	T&C	58%	Y	N	31
36	ACE	Urban background	Y	C	67%	Y	N	30
37	ACE	Urban background	Y	C	67%	Y	N	30
38	Hillbro Corner	Roadside	Y	N	67%	Y	N	32
39	82 Bawtry Road	Roadside	Y	N	67%	Y	N	**43**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
40	98 Bawtry Road	Roadside	Y	N	67%	Y	N	**45**
41	Redmires Road/Crimicar Lane	Suburban	Y	N	100		N	19
42	Coldwell Lane/Sandygate Road	Suburban	Y	N	100		N	22
43	Manchester Road/Sandygate Road	Roadside	Y	N	58	Y	N	27
44	Manchester Road/Sale Road	Roadside	Y	N	100		N	**42**
45	Witham Road/Crookes	Roadside	Y	N	92		N	**51**
46	Witham Road/Moor Oaks	Roadside	Y	N	92		N	**52**
47	Western Bank/Northumberland Road	Roadside	Y	N	100		N	39
48	Western Bank/Clarkson Road	Roadside	Y	N	100		N	**49**
49	Brook Hill/Favell Road	Roadside	Y	N	100		N	39
50	Upper Hanover Street/Hounsfield Road	Roadside	Y	N	100		N	33
51	Crimicar Road/Hallamshire Road	Roadside	Y	N	100		N	17
52	Crimicar Road/Brookhouse Hill	Roadside	Y	N	100		N	27
53	Fulwood Road/Tom Lane	Roadside	Y	N	100		N	22
54	Fulwood Road/Gladstone Road	Roadside	Y	N	92		N	31
55	Fulwood Road/Ashdell Road	Roadside	Y	N	100		N	29

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
56	Glossop Road/Peel Road	Roadside	Y	N	100		N	30
57	Glossop Road/Westbourne Road	Roadside	Y	N	100		N	36
58	Glossop Road/Clarkehouse Road	Roadside	Y	N	92		N	35
59	West Street/Regent Street	Roadside	Y	N	100		N	**40**
60	West Street/Leopold Street.	Roadside	Y	N	66	Y	N	**49**
61	Queens road Mecca	Roadside	Y	N	83		N	**48**
62	Queens road Netto	Roadside	Y	N	100		N	**40**
63	463 Queens road	Roadside	Y	N	100		N	**57**
64	London road -Sark Road	Roadside	Y	N	100		N	**51**
65	London road - Ponsfords	Roadside	Y	N	100		N	**51**
66	Chesterfield road - Meersbrook park road	Roadside	Y	N	100		N	**53**
67	513 Chesterfield road	Roadside	Y	N	100		N	35
68	Chesterfield road - Olivet road	Roadside	Y	N	100		N	**47**
69	Chesterfield road - Charles Ashmore road	Roadside	Y	N	100		N	32
70	Meadowhead road	Roadside	Y	N	100		N	30
71	GH3	Urban centre	Y	Y	100		N	35
72	GH3	Urban centre	Y	Y	100		N	36
73	GH3	Urban centre	Y	Y	100		N	36

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
	Community - Broomhall							
74	Ruth Square	urban background	Y	N	100%		N	20
75	Broomhall Road	urban background	Y	N	100%		N	21
76	Hanover Methodist Church	urban background	Y	N	100%		N	23
77	Springfield School	urban background	Y	N	100%		N	22
78	Exeter Drive 1	urban background	Y	N	100%		N	24
79	Exeter Drive 2	urban background	Y	N	100%		N	25
	Community - Crookes							
80	Wesleyan Chapel	urban background	Y	N	67%	Y	N	19
81	Arran Road	urban background	Y	N	75%		N	15
82	Cross Lane	urban background	Y	N	83%		N	16
	Community - Foxhill							
83	Wolfe Road	urban background	Y	N	100%		N	16
84	Keats Road	urban background	Y	N	100%		N	16
85	Foxhill medical centre	urban background	Y	N	100%		N	22

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
86	Birley Carr Church	urban background	Y	N	100%		N	16
87	Chaucer School	urban background	Y	N	83%		N	21
88	Housing office	urban background	Y	N	75%		N	20
89	484 Deerlands Avenue	urban background	Y	N	100%		N	28
	Community - Greenhill							
90	Westwick Crescent	urban background	Y	N	100%		N	14
91	Bocking Lane 1	urban background	Y	N	100%		N	21
92	St Peter's Church	urban background	Y	N	100%		N	17
93	Greenhill Library	urban background	Y	N	100%		N	19
94	Bocking Lane 2	urban background	Y	N	100%		N	23
	Community - Handsworth & Darnall							
95	Highfields Highfield Lane	urban background	Y	N	100		N	26
96	St Mary's Church	urban background	Y	N	100		N	29
97	Fitzallan Road Handsworth	urban background	Y					-
98	Anglers Rest	urban background	Y					-

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
99	Handsworth Road 1	urban background	Y	N	100		N	34
100	Handsworth Road 2	urban background	Y					-
101	Shop Front Parkway R/A	urban background	Y	N	100		N	39
102	Retford Road	urban background	Y	N	100		N	30
103	Prince of Wales Road	urban background	Y					-
104	Greenland Junior School 1	urban background	Y					-
105	Greenland Junior School 2	urban background	Y				N	-
106	Greenland Court	urban background	Y					-
107	Darnall Medical Centre	urban background	Y					-
108	Nursery Handsworth Road	urban background	Y					-
109	Norfolk Arms Finchwell Road	urban background	Y	N	50		N	29
110	Handsworth nursery	urban background	Y					-
111	Retford Road	urban background	Y					-
112	BT Pole 62 Rotherham Road	urban background	Y	N	83		N	32
	Community - Kelham Island							
113	Wicker	urban background	Y	N	100		N	**42**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
114	Lady's Bridge	urban background	Y	N	92		N	**45**
115	Gibraltar Street	urban background	Y	N	100		N	35
116	Penistone Road	urban background	Y	N	100		N	**54**
	Community - King Ecgbert School							
117	Back of School	urban background	Y	N	92%		N	12
118	Car park	urban background	Y	N	92%		N	15
119	Top of drive	urban background	Y	N	92%		N	15
120	Tesco Express Abbeydale Road	urban background	Y	N	92%		N	27
121	Ashfurlong Road	urban background	Y	N	92%		N	12
	Community - Melrose Burngreave							
122	Burngreave Road 1	urban background	Y	N	83%		N	30
123	Burngreave Road 2	urban background	Y	N	75%		N	31
124	Burngreave Road 3	urban background	Y	N	83%		N	33
125	Burngreave Street junction	urban background	Y	N	75%		N	28

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
126	Burngreave Road 4	urban background	Y	N	92%		N	**43**
	Community - Netheredge							
127	Junction Road	urban background	Y	N	100%		N	25
128	Osbourne Road	urban background	Y	N	100%		N	29
129	Montgomery Road	urban background	Y	N	100%		N	23
130	Zeds Nether Edge Road	urban background	Y	N	100%		N	21
131	Clifford School Psalter Lane	urban background	Y	N	100%		N	21
	Community - Tinsley							
132	Town Street	urban background	Y	N	100%		N	**49**
133	Siemens Close	urban background	Y	N	100%		N	**44**
134	Greasebro Road	urban background	Y	N	100%		N	37
135	Ferrars Road	urban background	Y	N	100%		N	29
136	Ingfield Avenue (Dr's Surgery)	urban background	Y	N	100%		N	36
137	Sheffield Road back	urban background	Y	N	100%		N	33
138	Sheffield Road front	urban background	Y	N	100%		N	38
1139	Junior school building	urban background	Y	N	100%		N	**44**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
140	Junior school field	urban background	Y	N	83%		N	**49**
	Community – Carter Knowle							
141	981 Abbeydale Road	urban background	Y	N	92%		N	39
142	La Scala, Abbeydale Rd /Archer Rd Jc	urban background	Y	N	92%		N	**50**
143	102 Archer Rd	urban background	Y	N	100%		N	32
144	Chippendale, Abbeydale Rd /Archer Rd	urban background	Y	N	100%		N	**47**
145	879 Abbeydale Rd	urban background	Y	N	92%		N	**46**
	Community – Brunswick School							
146	Science Garden	urban background	Y	N	92%		N	22
147	Millenium Garden	urban background	Y	N	92%		N	22
148	Top of Car Park	urban background	Y	N	100%		N	23
149	Top Yard	urban background	Y	N	67%	Y	N	20
150	Bottom yard	urban background	Y	N	100%		N	22

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
	Community – Hinde House single tubes							
151	Hinde House Lane	urban background	Y	N	100%		N	22
152	Derbyshire Lane	urban background	Y	N	100%		N	22
153	Winchester Avenue Front	urban background	Y	N	100%		N	23
154	Winchester Avenue Back	urban background	Y	N	100%		N	20
	Community – Deepcar /Stocksbridge							
155	Lidl (Tube 2)	urban background	Y	N	100%		N	32
156	PO (Tube 3)	urban background	Y	N	92%		N	32
157	Carr Road (Tube 1)	urban background	Y	N	100%		N	38
	Community – Penistone Road							
158	SCT Bedford St/Penistone Road	urban background	Y	N	100%		N	33
159	Regent Court Floor 7, Hillsborough	urban background	Y	N	100%		N	20

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
160	Catchbar Lane Traffic Light	urban background	Y	N	100%		N	**49**
161	Broughton Rd /Penistone Rd	urban background	Y	N	92%		N	32
162	Walkley Lane Newsagent Rear	urban background	Y	N	100%		N	26
163	Walkley Lane Newsagent Front	urban background	Y	N	100%		N	31
164	Regent Court Driveway	urban background	Y	N	100%		N	25
	Community – Breatheasy Group							
165	Manor Oaks Close	urban background	Y	N				-
166	Ridgeway Rd	urban background	Y	N	100		N	24
167	Harborough Ave	urban background	Y	N				-
168	Houstead Rd	urban background	Y	N	92		N	22
169	Argyle Close	urban background	Y	N				-
	Community-Darnall							
170	Darnall Post Office	urban background	Y	N	100		N	36
171	Well Being, Main Road	urban background	Y	N	100		N	**41**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.99 (1-40) 0.96 (41-180)) 2011 (µg/m^3)
172	584 Staniforth Rd	urban background	Y	N	100		N	39
	Abbey Lane School							
173	School	urban background	Y	N	50	Y	N	22
174	Abbey Lane House	urban background	Y	N	50	Y	N	23
	Co-located							
175	Tinsley GH2-1	urban background	Y	Y	100%		N	**44**
176	Tinsley GH2-2	urban background	Y	Y	100%		N	**44**
177	Tinsley GH2-3	urban background	Y	Y	100%		N	**43**
178	Sheffield Centre AURN-1	urban background	Y	Y	100%		N	34
179	Sheffield Centre AURN-2	urban background	Y	Y	100%		N	33
180	Sheffield Centre AURN-3	urban background	Y	Y	100%		N	34

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.
*Annual mean concentrations for previous years are optional.

Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	2008* (Bias Adjustment Factor = 0.93)	2009* (Bias Adjustment Factor = 1.02)	2010* (Bias Adjustment Factor = 1.00)	2011 (Bias Adjustment Factor = 0.99)
Warren Lane	Roadside	Y	34	30	34	30	28
7 Bawtry Gate	Urban background	Y	**50**	**44**	**48**	**46**	**45**
47 Bawtry Road	Roadside	Y	**59**	**52**	**55**	**51**	**51**
109 Bawtry Road	Roadside	Y	**47**	**43**	**48**	**42**	**43**
Ecclesfield Road Low Wincobank	Roadside	Y	**52**	**47**	**51**	**47**	**47**
Attercliffe Road	Roadside	Y	**53**	**48**	**51**	**47**	**42**
Attercliffe Road duplicate	Roadside	Y	**50**	**46**	**50**	**47**	**43**
Barnsley Rd Fir Vale	Roadside	Y	**49**	**47**	**58**	**53**	**45**
Upwell Street	Roadside	Y	**48**	**40**	**45**	**45**	37
Burngreave Road/Minna Road	Roadside	Y	**42**	36	38	38	36
Loxley New Road	Roadside	Y	**47**	**40**	**45**	**46**	35
Loxley New Road-duplicate	Roadside	Y	**48**	**41**	**43**	**44**	35
Bowden Wood Close	Roadside	Y	**42**	36	**43**	36	37
Parkway Broad Lane	Roadside	Y	**52**	**43**	**41**	**44**	**40**
Parkway Broad Lane duplicate	Roadside	Y	**52**	**42**	**48**	**42**	**40**
Exchange Street	Urban centre	Y	**48**	**41**	**42**	36	38
Duke Street	Roadside	Y	**56**	**48**	**47**	**45**	**43**
Waingate	Urban centre	Y	**55**	**51**	**62**	**59**	**53**
Fitzalan Square	Urban centre	Y	**62**	**54**	**59**	**60**	**51**
Barkers Pool	Urban centre	Y	35	29	33	29	33

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	2008* (Bias Adjustment Factor = 0.93)	2009* (Bias Adjustment Factor = 1.02)	2010* (Bias Adjustment Factor = 1.00)	2011 (Bias Adjustment Factor = 0.99)
Scotland Street	Urban background	Y	30	23	27	26	26
Eldon St/ Wellington St	Urban centre	Y	27	24	**46**	**43**	**42**
Broomspring Close	Roadside	Y	27	23	26	25	23
University Roundabout	Roadside	Y	**52**	**48**	**53**	**47**	**50**
Netherthorpe School	Roadside	Y	39	36	**46**	**42**	37
Upper Hanover Street	Roadside	Y	**45**	39	**45**	**47**	38
Shoreham St	Roadside	Y	**52**	**46**	**50**	**49**	**43**
St Marys Road	Roadside	Y	39	29	36	37	31
Chesterfield Road /Woodseats Road	Roadside	Y	**45**	38	**44**	**46**	38
Queens Road/ Edmund Rd	Roadside	Y	**41**	35	**44**	**41**	36
Abbeydale Road /Carter Knowle Road	Roadside	Y	**43**	**40**	**42**	**42**	39
Ecclesall Road	Roadside	Y	**41**	37	**50**	**50**	**43**
AUN	Urban centre	Y	34	31	34	33	30
AUN	Urban centre	Y	34	31	34	33	29
AUN	Urban centre	Y	34	31	32	31	31
ACE	Urban background	Y	33	29	32	30	30
ACE	Urban background	Y	33	29	32	31	30
Hillbro Corner	Roadside	Y	38	33	39	38	32
82 Bawtry Road	Roadside	Y	**52**	**47**	**52**	**48**	**43**
98 Bawtry Road	Roadside	Y	**51**	**48**	**55**	**47**	**45**

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	2008* (Bias Adjustment Factor = 0.93)	2009* (Bias Adjustment Factor = 1.02)	2010* (Bias Adjustment Factor = 1.00)	2011 (Bias Adjustment Factor = 0.99)
Redmires Road/Crimicar Lane	Suburban	Y	21	19	19	19	19
Coldwell Lane/Sandygate Road	Suburban	Y	25	25	26	22	22
Manchester Road/Sandygate Road	Roadside	Y	27	27	27	23	27
Manchester Road/Sale Road	Roadside	Y	**47**	**45**	**44**	**42**	**42**
Witham Road/Crookes	Roadside	Y	**61**	**58**	**56**	**53**	**51**
Witham Road/Moor Oaks	Roadside	Y	**52**	**52**	**54**	**50**	**52**
Western Bank/Northumberland Road	Roadside	Y	**44**	**44**	**42**	39	39
Western Bank/Clarkson Road	Roadside	Y	**51**	**49**	**51**	**48**	**49**
Brook Hill/Favell Road	Roadside	Y	**45**	**41**	**40**	**40**	39
Upper Hanover Street/Hounsfield Road	Roadside	Y	35	33	33	31	33
Crimicar Road/Hallamshire Road	Roadside	Y	21	18	18	18	17
Crimicar Road/Brookhouse Hill	Roadside	Y	25	26	27	27	27
Fulwood Road/Tom Lane	Roadside	Y	26	24	24	25	22
Fulwood Road/Gladstone Road	Roadside	Y	29	28	31	30	31
Fulwood Road/Ashdell Road	Roadside	Y	33	30	31	31	29
Glossop Road/Peel Road	Roadside	Y	35	33	30	31	30

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	2008* (Bias Adjustment Factor = 0.93)	2009* (Bias Adjustment Factor = 1.02)	2010* (Bias Adjustment Factor = 1.00)	2011 (Bias Adjustment Factor = 0.99)
Glossop Road/Westbourne Road	Roadside	Y	37	36	37	39	36
Glossop Road/Clarkehouse Road	Roadside	Y	**40**	39	37	35	35
West Street/Regent Street	Roadside	Y	**48**	**42**	**44**	**44**	**40**
West Street/Leopold Street.	Roadside	Y	**55**	**46**	**47**	**45**	**49**
Queens road Mecca	Roadside	Y	**59**	**52**	**50**	**50**	**48**
Queens road Netto	Roadside	Y	**48**	**41**	**41**	**40**	**40**
463 Queens road	Roadside	Y	**64**	**53**	**57**	**52**	**57**
London road -Sark Road	Roadside	Y	**57**	**49**	**52**	**52**	**51**
London road - Ponsfords	Roadside	Y	**62**	**53**	**57**	**52**	**51**
Chesterfield road - Meersbrook park road	Roadside	Y	**60**	**54**	**53**	**57**	**53**
513 Chesterfield road	Roadside	Y	39	38	35	35	35
Chesterfield road - Olivet road	Roadside	Y	**53**	**46**	**45**	**48**	**47**
Chesterfield road - Charles Ashmore road	Roadside	Y	38	33	33	32	32
Meadowhead road	Roadside	Y	31	30	30	30	30
GH3	Urban centre	Y	**40**	35	34	36	35
GH3	Urban centre	Y	39	33	34	36	36
GH3	Urban centre	Y	38	33	37	36	36
Community - Broomhall							
Ruth Square	urban background	Y	24	20	27	24	20

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	2008* (Bias Adjustment Factor = 0.93)	2009* (Bias Adjustment Factor = 1.02)	2010* (Bias Adjustment Factor = 1.00)	2011 (Bias Adjustment Factor = 0.99)
Broomhall Road	urban background	Y	26	26	25	26	21
Hanover Methodist Church	urban background	Y	30	25	24	25	23
Springfield School	urban background	Y	25	24	25	24	22
Exeter Drive 1	urban background	Y	27	24	18	24	24
Exeter Drive 2	urban background	Y	30	28	23	22	25
Community - Crookes							
Wesleyan Chapel	urban background	Y	24	24	21	15	19
Arran Road	urban background	Y	17	17	16	16	15
Cross Lane	urban background	Y	19	17	16	15	16
Community - Foxhill							
Wolfe Road	urban background	Y	20	17	21	19	16
Keats Road	urban background	Y	18	16	16	16	16
Foxhill medical centre	urban background	Y	23	20	21	22	22
Birley Carr Church	urban background	Y	20	16	17	18	16
Chaucer School	urban background	Y	23	21	16	22	21
Housing office	urban background	Y		-	-	25	20
484 Deerlands Avenue	urban background	Y		-	-	30	28

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Community - Greenhill							
Westwick Crescent	urban background	Y	18	16	14	17	14
Bocking Lane 1	urban background	Y	24	21	20	21	21
St Peter's Church	urban background	Y	21	18	17	18	17
Greenhill Library	urban background	Y	23	20	18	20	19
Bocking Lane 2	urban background	Y	28	24	23	25	23
Community - Handsworth & Darnall							
Highfields Highfield Lane	urban background	Y	35	30	28	27	26
St Mary's Church	urban background	Y	**40**	32	32	34	29
Fitzallan Road Handsworth	urban background	Y	28	26	24	24	-
Anglers Rest	urban background	Y	30	25	23	22	-
Handsworth Road 1	urban background	Y	**42**	38	38	36	34
Handsworth Road 2	urban background	Y	**43**	39	37	36	-
Shop Front Parkway R/A	urban background	Y	**44**	39	**40**	**41**	39
Retford Road	urban background	Y	n/a	25	23	26	30
Prince of Wales Road	urban background	Y	28	25	24	24	-

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Greenland Junior School 1	urban background	Y	31	26	25	22	-
Greenland Junior School 2	urban background	Y	29	27	25	23	-
Greenland Court	urban background	Y	26	24	21	21	-
Darnall Medical Centre	urban background	Y	33	31	29	27	-
Nursery Handsworth Road	urban background	Y	34	30	28	27	-
Norfolk Arms Finchwell Road	urban background	Y	32	26	32	27	29
Handsworth nursery	urban background	Y	27	23	21	19	-
Retford Road	urban background	Y	39	34	32	32	-
BT Pole 62 Rotherham Road	urban background	Y	38	34	34	34	32
Community - Kelham Island							
Wicker	urban background	Y	**41**	**42**	38	38	**42**
Lady's Bridge	urban background	Y	**77**	**43**	**42**	**40**	**45**
Gibraltar Street	urban background	Y	**41**	34	34	32	35
Penistone Road	urban background	Y	**55**	**49**	**51**	**45**	**54**

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Community - King Ecgbert School							
Back of School	urban background	Y	14	12	12	12	12
Car park	urban background	Y	18	16	16	15	15
Top of drive	urban background	Y	17	16	15	15	15
Tesco Express Abbeydale Road	urban background	Y	31	27	27	27	27
Ashfurlong Road	urban background	Y	15	13	13	13	12
Community - Melrose Burngreave							
Burngreave Road 1	urban background	Y	**40**	29	25	29	30
Burngreave Road 2	urban background	Y	**40**	33	25	29	31
Burngreave Road 3	urban background	Y	**41**	30	27	32	33
Burngreave Street junction	urban background	Y	33	24	20	25	28
Burngreave Road 4	urban background	Y	**53**	**40**	33	38	**43**
Community - Netheredge							
Junction Road	urban background	Y	31	27	24	27	25
Osbourne Road	urban background	Y	32	28	28	29	29

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Montgomery Road	urban background	Y	29	25	23	24	23
Zeds Nether Edge Road	urban background	Y	26	23	23	24	21
Clifford School Psalter Lane	urban background	Y	27	23	23	24	21
Community - Tinsley							
Town Street	urban background	Y	**53**	**47**	**45**	**43**	**49**
Siemens Close	urban background	Y	**47**	**43**	**40**	**40**	**44**
Greasebro Road	urban background	Y	**44**	39	35	37	37
Ferrars Road	urban background	Y	37	31	28	30	29
Ingfield Avenue (Dr's Surgery)	urban background	Y	37	36	34	32	36
Sheffield Road back	urban background	Y	38	35	33	31	33
Sheffield Road front	urban background	Y	33	35	30	24	38
Junior school building	urban background	Y	32	33	**40**	**40**	**44**
Junior school field	urban background	Y			**43**	**44**	**49**
Community – Carter Knowle							
981 Abbeydale Road	urban background	Y				33	39
La Scala, Abbeydale Rd /Archer Rd Jc	urban background	Y				**43**	**50**

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
102 Archer Rd	urban background	Y				32	32
Chippendale, Abbeydale Rd /Archer Rd	urban background	Y				**45**	**47**
879 Abbeydale Rd	urban background	Y				**40**	**46**
Community – Brunswick School							
Science Garden	urban background	Y			21	21	22
Millenium Garden	urban background	Y			24	25	22
Top of Car Park	urban background	Y			24	26	23
Top Yard	urban background	Y			23	25	20
Bottom yard	urban background	Y			22	23	22
Community – Hinde House single tubes							
Hinde House Lane	urban background	Y			22	26	22
Derbyshire Lane	urban background	Y			21	24	22
Winchester Avenue Front	urban background	Y			19	14	23
Winchester Avenue Back	urban background	Y			21	16	20

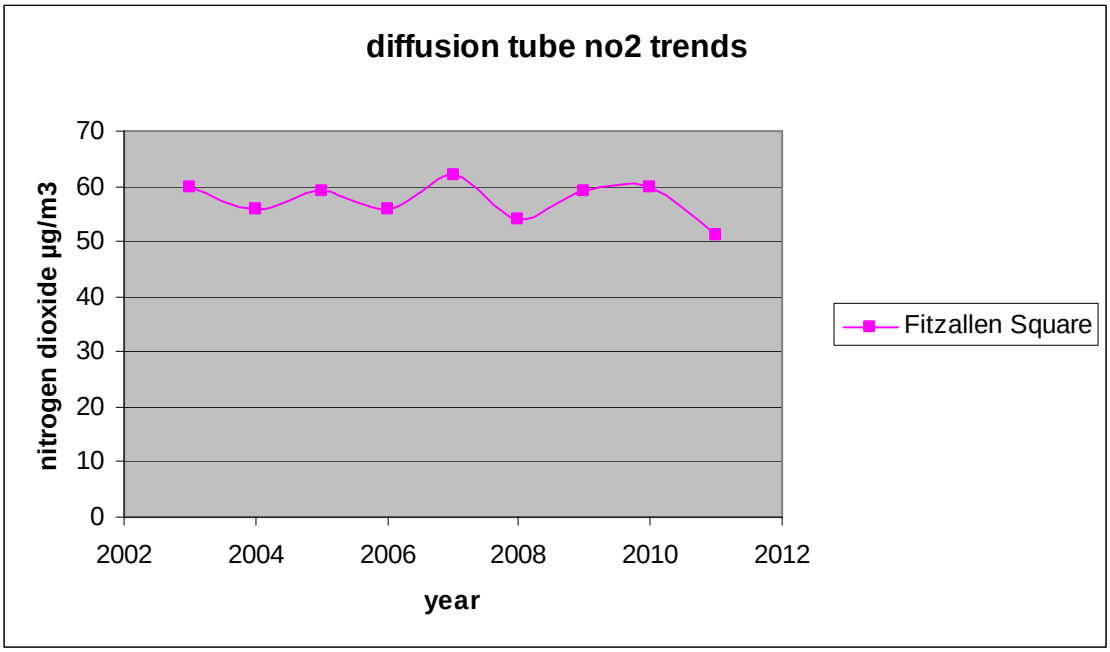
Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Community – Deepcar /Stocksbridge							
Lidl (Tube 2)	urban background	Y			27	31	32
PO (Tube 3)	urban background	Y			28	31	32
Carr Road (Tube 1)	urban background	Y			35	35	38
Community – Penistone Road							
SCT Bedford St/Penistone Road	urban background	Y			33	36	33
Regent Court Floor 7, Hillsborough	urban background	Y			20	20	20
Catchbar Lane Traffic Light	urban background	Y			**47**	**46**	**49**
Broughton Rd /Penistone Rd	urban background	Y			34	38	32
Walkley Lane Newsagent Rear	urban background	Y			24	24	26
Walkley Lane Newsagent Front	urban background	Y			26	31	31
Regent Court Driveway	urban background	Y			22	24	25
Community – Breatheasy Group							

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Manor Oaks Close	urban background	Y			20	-	22
Ridgeway Rd	urban background	Y			22	27	22
Harborough Ave	urban background	Y			24	-	23
Houstead Rd	urban background	Y			23	25	20
Argyle Close	urban background	Y			15	17	22
Community-Darnall							
Darnall Post Office	urban background	Y					36
Well Being, Main Road	urban background	Y					**41**
584 Staniforth Rd	urban background	Y					39
Abbey Lane School							
School	urban background	Y					22
Abbey Lane House	urban background	Y					23
Co-located							
Tinsley GH2-1	urban background	Y					**44**
Tinsley GH2-2	urban background	Y					**44**
Tinsley GH2-3	urban background	Y					**43**
Sheffield Centre AURN-1	urban background	Y					34

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3				
			2007* (Bias Adjustment Factor = 1.03)	**2008* (Bias Adjustment Factor = 0.93)**	**2009* (Bias Adjustment Factor = 1.02)**	**2010* (Bias Adjustment Factor = 1.00)**	**2011 (Bias Adjustment Factor = 0.99)**
Sheffield Centre AURN-2	urban background	Y					33
Sheffield Centre AURN-3	urban background	Y					34

*Optional

Figure 2.2 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites



The trend chart above is for one diffusion tube only, located at Fitzallen Square. The tube is in Sheffield city centre in an area where there is a large proportion of heavy vehicles particularly buses. The trend shown here, that is constant levels of nitrogen dioxide since 2003, is typical of that shown in Sheffield tubes, although this tube shows some of the highest levels

2.2.2 PM_{10}

Table 2.7 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for monitoring Period %[a]	Valid Data Capture 2011 %[b]	Confirm Gravimetric Equivalent (Y or NA)	Annual Mean Concentration µg/m^3				
						2007*[c]	2008* [c]	2009* [c]	2010* [c]	2011 [cd]
Firvale School	Urban Background	Y		79	VCM	-	-	18	23	23
Tinsley Infant Sc	Urban Industrial	Y		62	VCM	26.6	22.7	21	24	25
Lowfield School	Urban Centre	Y		37	VCM	27.2	22.4	22	28	29
Wicker	Urban Background	Y		26	VCM	25.6	15	17	23	24
King Ecgberts	Urban Background	Y		0	-	-	11.6	12	-	-
Waingate	Roadside	Y		61	VCM	29.3	24	24	28	24
Sheffield Centre	Urban centre	Y		84	VCM	-	22	n/a	22	23

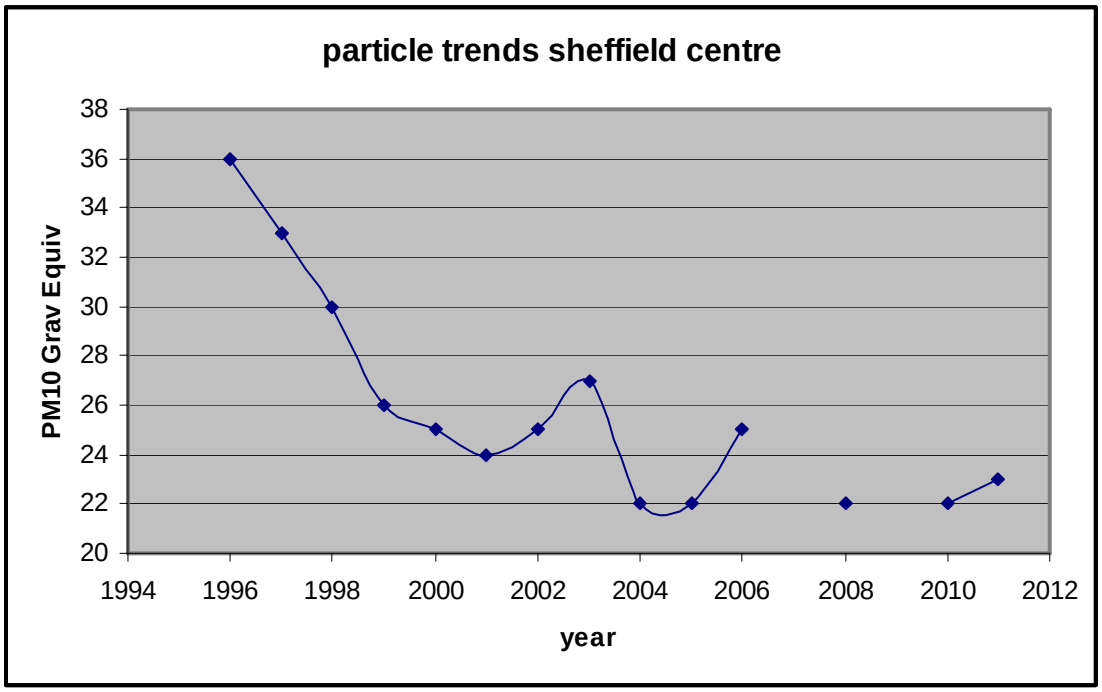
[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.
* Optional
[d] Not annualised as low data capture was due to communication problems, data loss was throughout the period.

Table 2.8 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour mean Objective

Site ID	Site Type	Within AQMA ?	Valid Data Capture for monitoring Period %[a]	Valid Data Capture 2011 %[b]	Confirm Gravimetric Equivalent	Number of Exceedences of 24-Hour Mean (50 µg/m^3)				
						2007*	2008*	2009*	2010*	2011
Firvale School	Urban Background	Y		79	VCM	-	-	0	2(34)	16(39)
Tinsley Infant School	Urban Industrial	Y		62	VCM	15	10	7	2(37)	11(38)
Lowfield Scho	Urban Centre	Y		37	VCM	16	13	7	8(39)	13(47)
Wicker	Urban Background	Y		26	VCM	9 (31)	0	3	0(34)	3(40)
King Ecgberts	Urban Background	Y		0	-	-	0	0	-	-
Waingate	Roadside	Y		61	VCM	30	18	12	9(41)	10(40)
Sheffield Cent	Urban centre	Y		84	VCM	-	0	0	0	19

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] if data capture is less than 90%, include the 90th percentile of 24-hour means in brackets
* Optional

Figure 2.3 Trends in Annual Mean PM_{10} Concentrations



Levels of PM10 appear to have decreased at Sheffield Centre. There are however external factors which may effect the results; traffic has reduced in this area due to city centre management schemes also the TEOM instrument has changed to a FDMS instrument. The levels seem to have maintained since about 2000.

2.2.3 Sulphur Dioxide

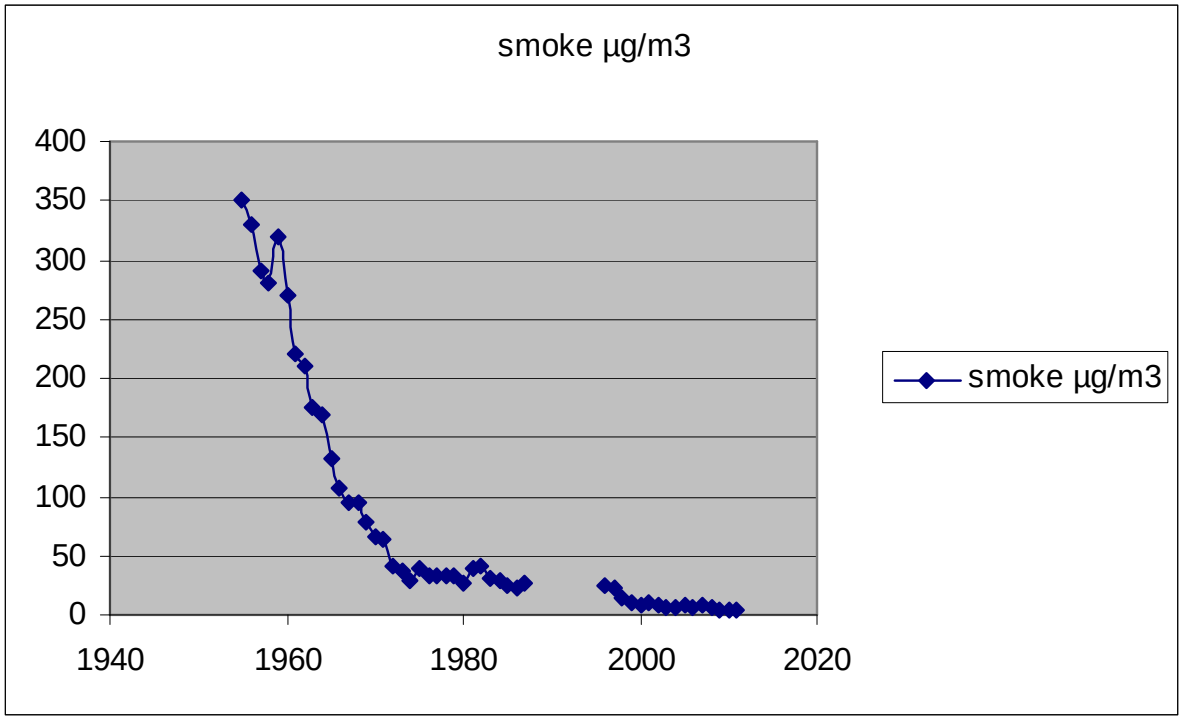
Sulphur dioxide is monitored at the DEFRA Sheffield Centre site and the Lowfield School automatic station (GH3).
In the years 2006-2011 there were no exceedences of any of the sulphur dioxide objectives.

Table 2.9 Results of Automatic Monitoring of SO_2: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for monitoring Period %[a]	Valid Data Capture 2011 %[b]	Number of Exceedences (percentile in bracket μg/m^3)[c]		
					15-minute Objective (266 μg/m^3)	1-hour Objective (350 μg/m^3)	24-hour Objective (125 μg/m^3)
Lowfield School	Urban centre	Y		40	0(23)	0(17)	0(6)
Sheffield centre	Urban centre	Y		88	0	0	0

[a] i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
[b] i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
[c] if data capture is less than 90%, include the relevant percentile in brackets
* Optional

Figure 2.4 Trends in SO_2 Concentrations



Shown below is the sulphur dioxide trend, which is an annual average. Up to 1988 this was done by wet chemical methods and after 1995 by automatic analysers. The trend show the success of the Clean Air Acts and what can be done if there is political will.

2.2.4 Benzene

Benzene levels are measured by pumped tube at the Sheffield Centre site. The data is available in the non-automatic hydrocarbon network archive.
No data is available for running annual mean values. The measured levels are low annual mean levels of 0.6µg/m^3 for 2011.

2.2.5 Other pollutants monitored

PM2.5 is measured at GH2 at Tinsley Infant School using a TEOM with PM2.5 head. No correction factors have been applied to the data.
The DEFRA site at Sheffield Centre also monitors PM2.5 using TEOM FDMS.

Table 2.10 PM2.5 Results

Site ID	Location	Within AQMA?	Data Capture 2011 %	Annual mean concentrations (µg/m^3)		
				2009	2010	2011
GH2	Tinsley Infant School	Y	63	14	14	15
Sheffield Centre (DEFRA)		Y	87	11	12	17

Summary of Compliance with AQS Objectives

Sheffield City Council has examined the results from monitoring in the district. The whole urban area of the city is an AQMA for PM10 and nitrogen dioxide; The Objectives for all the remaining 5 pollutants are not breached, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Sheffield City Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Sheffield City Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

Sheffield City Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Sheffield City Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Sheffield City Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Sheffield City Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Sheffield City Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Sheffield City Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Sheffield City Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Sheffield City Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Sheffield City Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Sheffield City Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Sheffield City Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Sheffield City Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Sheffield City Council confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Sheffield City Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Sheffield City Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.2 Biomass Combustion – Combined Impacts

Sheffield City Council has assessed the biomass combustion plant, and concluded that it will not be necessary to proceed to a Detailed Assessment.

6.3 Domestic Solid-Fuel Burning

Sheffield City Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Sheffield City Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

Nitrogen dioxide
The new monitoring data shows that nitrogen dioxide levels still exceed the annual mean objective in many areas. All of these points are within an AQMA as the whole of the urban area of Sheffield is an AQMA.
Nitrogen dioxide levels do not appear to be reducing. It appears that the AQMA for nitrogen dioxide is unlikely to be revoked in the foreseeable future.

PM_{10}
PM10 levels measured do not exceed any objectives. Further investigation will be required (which will include modelling) before the AQMA for PM10 can be undeclared.

8.2 Conclusions from Assessment of Sources

The whole of the Sheffield urban area is an AQMA for nitrogen dioxide and PM10. Future developments are very unlikely to significantly affect air quality outside of the AQMA (this is the Peak Park Area).

8.3 Proposed Actions

The Updating and Screening Assessment has not identified the need to proceed to a Detailed Assessment for any pollutant. The next review and assessment report which will be submitted to defra will be the 2013 Progress Report .

The Air Quality Action Plan AQAP has been rewritten and has been approved by the Council Cabinet, and accepted for implementation as Council policy.

A Low Emissions Zone (LEZ) Study Phase 1, an action of the AQAP, funded using DEFRA AQ Grant 2011/12, is currently being undertaken and is expected to be reported by 31 October 2012. Subject to securing additional DEFRA funding, Study Phase 2 will commence to enable a conclusion to be reached on the appropriate LEZ actions that will enable us achieve compliance with EU AQ law and protect health.

9 References

Local Air Quality Management Technical Guidance LAQM.TG(09) February 2009. www.defra.gov.uk

Appendices

Appendix A: QA/QC Data

Appendix A: QA:QC Data

PM Monitoring Adjustment

PM_{10} data for 2011 were corrected to gravimetric equivalent using King's College London Volatile Correction Method (VCM) for PM_{10} as in Section A1.62 of TG(09).

QA/QC of automatic monitoring

QA/QC is carried out in-house. Calibrations are carried out fortnightly. Auditing was carried out by National Physical Laboratory NPL. NPL recommendations relating to data auditing were then implemented

QA/QC of diffusion tube monitoring

Two separate laboratories were used for diffusion tube monitoring;
South Yorkshire Air Quality Samplers and Gradko International.
The preparation method for both was 50% TEA in acetone.

For South Yorkshire Air Quality Samplers, tube precision in 2011 was good for most of the period with one instance of poor precision.
The WASP scheme lists the laboratory's performance as 100% of results as satisfactory in the latest available report. In 2009 procedures have been amended so that the laboratory is in line with the harmonisation procedures

For Gradko International, 100% of the results submitted were subsequently determined to be satisfactory in 3 of the periods and 37% in one period (WASP R115).

Bias Adjustment Factor from Local Co-location Studies

Table A.1 Bias Adjustment Factors

Year	SY Labs	Gradko
2005	1.0	1.11
2006	1.03	1.04
2007	1.08	1.03
2008	0.98	0.93
2009	0.91	0.99
2010	0.92 SYAQS	1.00
2011	0.96	0.99

In 2011 bias adjustment factors were calculated using diffusion tubes co-located on the DEFRA Sheffield Centre monitoring station.