



2012 Air Quality Updating and Screening Assessment for Coleraine Borough Council

In fulfillment of Environment (Northern Ireland)
Order 2002
Local Air Quality Management

April 2012



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Executive Summary

Under The Environment (Northern Ireland) Order 2002, local authorities are obliged to regularly review and assess the air quality in their boroughs. The review and assessment plays an important role in the continuing process of Local Air Quality Management, whereby the authorities aim to achieve the Air Quality Objectives for the following seven air pollutants: carbon monoxide, benzene, 1,3- butadiene, lead, nitrogen dioxide, sulphur dioxide and particles (PM10).

The review and assessment process consists of 2 stages. The first stage, known as the updating and screening assessment (this document) identifies all relevant changes since the earlier work was carried out and then uses simple tools to check if there is a current risk of the relevant pollution objectives being exceeded. If this is the case the 2nd stage, known as the Detailed Assessment, must then be carried out. If the Detailed Assessment concludes that the relevant Air Quality Objective will be exceeded then an Air Quality Management Area must be declared.

This document addresses the current and future situation with regard to all the pollutants currently contained within the Air Quality Strategy, not just those for which there was local concern in 2005. For all of the pollutants the previous work concluded that there was no likelihood of any of the standards being breached in the relevant years. This document has confirmed that nothing significant has occurred to alter those conclusions. There is no requirement for a detailed assessment for any of the pollutants addressed.

Table of contents

1	Introduction	5
1.1	Description of Local Authority Area	5
1.2	Purpose of Report.....	6
1.3	Air Quality Objectives	6
1.4	Summary of Previous Review and Assessments.....	8
2	New Monitoring Data	9
2.1	Summary of Monitoring Undertaken.....	9
2.1.1	Automatic Monitoring Sites	9
2.1.2	Non-Automatic Monitoring Sites	10
2.2	Comparison of Monitoring Results with AQ Objectives.....	17
2.2.1	Nitrogen Dioxide	17
2.2.2	PM ₁₀	25
2.2.3	Sulphur Dioxide.....	26
2.2.4	Benzene.....	27
2.2.5	Other pollutants monitored	27
	Summary of Compliance with AQS Objectives	28
3	Road Traffic Sources	29
3.1	Narrow Congested Streets with Residential Properties Close to the Kerb	29
3.2	Busy Streets Where People May Spend 1-hour or More Close to Traffic.....	29
3.3	Roads with a High Flow of Buses and/or HGVs.	29
3.4	Junctions.....	30
3.5	New Roads Constructed or Proposed Since the Last Round of Review and Assessment 30	
3.6	Roads with Significantly Changed Traffic Flows.....	30
3.7	Bus and Coach Stations	30
4	Other Transport Sources.....	31
4.1	Airports.....	31
4.2	Railways (Diesel and Steam Trains)	31
4.2.1	Stationary Trains.....	31
4.2.2	Moving Trains	31
4.3	Ports (Shipping)	31
5	Industrial Sources.....	32
5.1	Industrial Installations	32
5.2	Major Fuel (Petrol) Storage Depots.....	32
5.3	Petrol Stations.....	32
5.4	Poultry Farms.....	32
6	Commercial and Domestic Sources	33
6.1	Biomass Combustion – Individual Installations	33

6.2	Biomass Combustion – Combined Impacts.....	33
6.3	Domestic Solid-Fuel Burning	33
7	Fugitive or Uncontrolled Sources.....	35
8	Conclusions and Proposed Actions.....	36
8.1	Conclusions from New Monitoring Data	36
8.2	Conclusions from Assessment of Sources	36
8.3	Proposed Actions.....	36
9	References.....	37

List of Tables

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in Northern Ireland

Table 2.2 Details of Non-Automatic Monitoring Sites

Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes in 2011

List of Figures

Figure 1 Map of Non-Automatic Monitoring Sites

Figure 2 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

Figure 3 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

Appendices

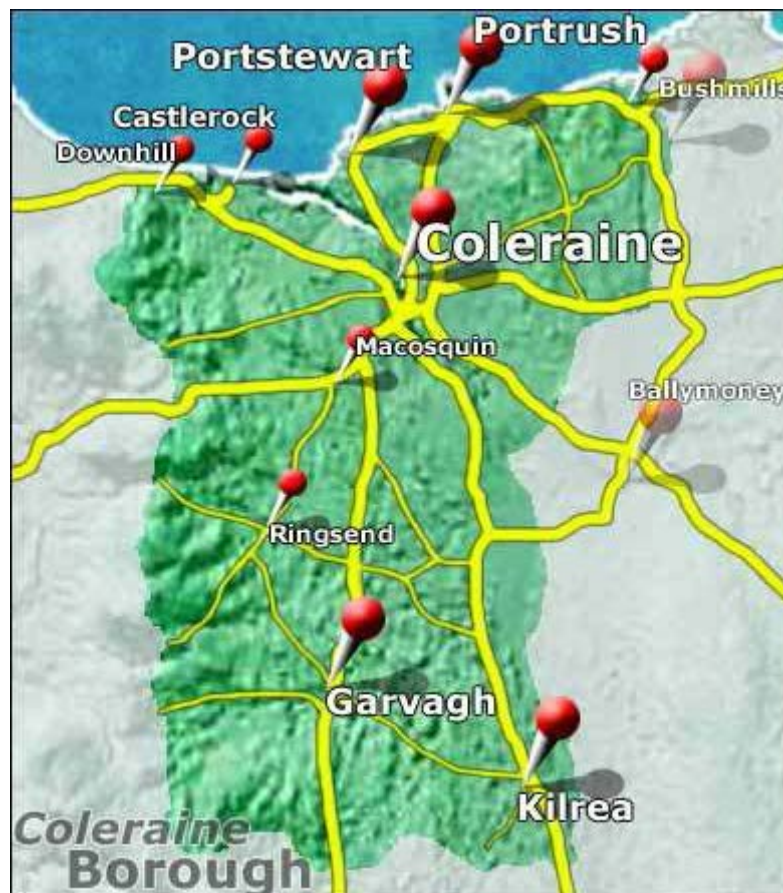
Appendix 1 Appendix A: QA:QC Data

Appendix 2 Appendix B: PART A AND B AUTHORISED PROCESSES IN COLERAINE BOROUGH

1 Introduction

1.1 Description of Local Authority Area

The Borough of Coleraine, which covers approximately 190 square miles, has a static population of approximately 56, 000, although large numbers of tourists swell the population during the summer months. The Borough stretches along the coastline from Downhill and Castlerock in the west to Portballintrae in the east, embracing the main coastal resorts of Portrush and Portstewart and inland to the rural towns of Kilrea and Garvagh. The River Bann borders the eastern edge of the Borough and flows through the town of Coleraine. The northern edge of the Borough is mainly coastal. The Coleraine farmland landscape extends along the north coast from Castlerock to Portrush and southwards along the River Bann valley towards Kilrea and Garvagh. Coleraine is located on the mainline rail link from Belfast to Derry with a spur line to Portrush and is approximately 55 miles from Belfast and 35 miles from Derry. Coleraine boasts an impressive history originating in the first known human settlement on the island some 8,000 years ago. Coleraine is also a university town, being home to the headquarters campus of Ireland's largest university, the University of Ulster.



1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, 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 Northern Ireland are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, 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 LAQM in Northern Ireland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
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	31.12.2010

Coleraine Borough Council

		mean	
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
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
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

SUMMARY OF FINDINGS FROM PREVIOUS REVIEW AND ASSESSMENT WORK.

The cornerstone of the LAQM process is the review and assessment of air quality. This is a statutorily required process whereby local air quality is assessed against national air quality standards and objectives. Updating and Screening Assessments cover new monitoring data, new objectives, new sources or significant changes to existing sources and any other local changes that may affect air quality. Where objectives are breached or are predicted to be breached, an Air Quality Management Area (AQMA) is declared. An Action Plan must then be produced stating how the district council will drive air quality towards the objective.

The last round of Updating and Screening Assessment (completed in 2009) concluded that:

- 1. The risk of the objectives for the following pollutants being exceeded in the Coleraine Borough Council area was negligible:**
Carbon Monoxide, Benzene, 1, 3 Butadiene, Lead, Nitrogen Dioxide, PM10, Sulphur Dioxide
- 2. That existing monitoring using NO₂ diffusion tubes be continued to monitor sensitive locations within the Borough**

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Coleraine Borough Council does not currently carry out any automatic monitoring

2.1.2 Non-Automatic Monitoring Sites

Nitrogen dioxide (NO₂) and nitric oxide (NO) are both oxides of nitrogen, and are collectively referred to as nitrogen oxides. All combustion processes produce nitrogen oxide emissions, largely in the form of nitric oxide, which is then converted to nitrogen dioxide mainly as a result of reactions with ozone in the atmosphere. Exposure to high concentrations of nitrogen dioxide is reported to sensitise asthmatics to allergens such as irritant chemicals, house dust mites and pollen.

In urban areas, particularly close to major roads, motor vehicles account for the largest proportion of nitrogen oxide emissions. The contribution of road transport to nitrogen oxide emissions has declined significantly in recent years as a result of various national policy measures, and further reductions are expected up until 2011 and beyond. Coleraine Borough Council is currently monitoring nitrogen dioxide at 30 sites around the district using passive diffusion tubes.

Diffusion tubes are a type of passive sampler; they absorb the pollutant to be monitored directly from the surrounding air. Diffusion tubes represent a simple and cost-effective method of monitoring air quality in an area, to give a good general indication of average pollution concentrations. They are particularly useful for assessment against annual mean objectives. Monitoring sites are chosen to provide data on locations where there is relevant public exposure and where possible, are close to the nearest receptor to the busy road or road junction of interest. The sites are subject to periodic review.

Tubes are replaced once per month resulting in an exposure period of one month. At the end of the monitoring period the tubes are collected, documentation filed and then sent to the laboratory (Gradko) to undergo analysis.

On completion of analysis the results are e mailed by Gradko to Coleraine Borough Council Environmental Services Department and are recorded for use in the final results tabulation for the year.

Results obtained from diffusion tube analysis require correction for possible positive bias (over-read), or negative bias (under-read). The preparation method used was an absorbent of 20% TEA (Triethanolamine) in water. The bias adjustment factor for Gradko and the technique in 2011 is 0.89. This factor is based on 26 studies and is taken from the UWE website at

<http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

The monitoring sites referred to in this report are shown in the map below.

Figure 1 Map of Non-Automatic Monitoring Sites

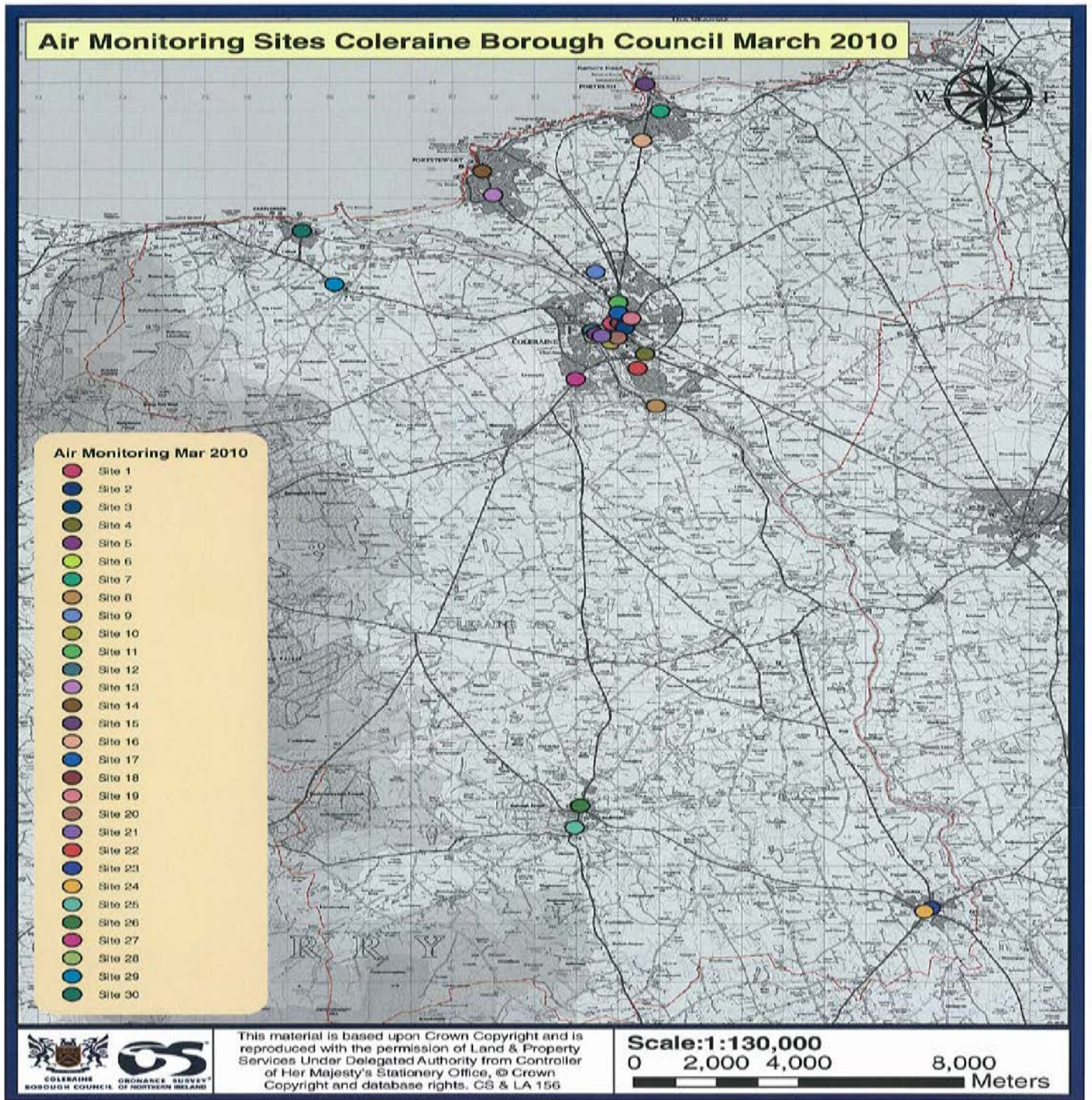


Table 2.2 Details of Non-Automatic Monitoring Sites

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?
Outside 114 Coleraine Road, Portstewart	Kerbside	282003	437106	NO ₂	N	N	Y (4m)	1m	Y
Outside O'Hara Court, Portstewart	Kerbside	281742	437925	NO ₂	N	N	Y (3m)	1m	Y
Corner of Antrim Gardens, Main Street, Portrush	Kerbside	285684	440929	NO ₂	N	N	Y (3m)	1m	Y
Crocknamack Roundabout, Portrush	Kerbside	286048	439997	NO ₂	N	N	Y (2m)	1m	Y
Outside 118 Coleraine Road, Portrush	Suburban	285608	438986	NO ₂	N	N	Y (4m)	1m	Y
UUC, Coleraine	Urban background	284487	434466	NO ₂	N	N	Y (2m)	1m	Y
Millburn Road, Coleraine	Roadside	285040	433065	NO ₂	N	N	Y (1m)	1m	Y
Bottom of Union Street,	Urban centre	284876	432701	NO ₂	N	N	Y (3m)	1m	Y

Coleraine Borough Council

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?
Coleraine									
Corner of Brook Street, Coleraine	Urban centre	285075	432722	NO ₂	N	N	Y (3m)	1m	Y
Top of Union Street, Coleraine	Urban centre	285247	432709	NO ₂	N	N	Y (4m)	1m	Y
Outside 42 Bushmills Road, Coleraine	Roadside	285350	432873	NO ₂	N	N	Y (3m)	1m	Y
Railway Road, Coleraine	Urban centre	285197	432555	NO ₂	N	N	Y (1m)	1m	Y
Outside 75 Long Commons, Coleraine	Roadside	285022	432209	NO ₂	N	N	Y (0.5m)	1m	Y
Outside Tesco, Coleraine	Urban centre	284855	432048	NO ₂	N	N	Y (1m)	1m	Y
Hanover Place Post 34, Coleraine	Roadside	284637	432268	NO ₂	N	N	Y (1m)	1m	Y
Strand Road, Coleraine	Kerbside	284495	432337	NO ₂	N	N	Y (1m)	1m	Y
Lodge Road, Roundabout, Coleraine	Roadside	285677	431651	NO ₂	N	N	Y (1m)	1m	Y
Mountsandel, Rugby	Roadside	285506	431161	NO ₂	N	N	Y (5m)	1m	Y

Coleraine Borough Council

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?
Avenue Roundabout, Coleraine									
Glenara Court, Castleroe, Coleraine	Rural	285950	429864	NO ₂	N	N	Y (4m)	1m	Y
Kilrea, Lower Diamond	Roadside	292590	412560	NO ₂	N	N	Y (3m)	0.5m	Y
Kilrea, Maghera Street	Roadside	292420	412440	NO ₂	N	N	Y (2m)	2m	Y
Outside 8 Carhill Road, Garvagh	Roadside	283972	415319	NO ₂	N	N	Y (4m)	1m	Y
Opposite SuperValu, Garvagh	Roadside	284105	416066	NO ₂	N	N	Y (0.5m)	1m	Y
Post 11, Lismurphy, Greenmount	Suburban	284003	430787	NO ₂	N	N	Y (5m)	0.5m	Y
Outside Killowen House, Coleraine	Roadside	284433	432263	NO ₂	N	N	Y (3m)	1m	Y
Dunboe Gardens, Post 24, Articlave	Roadside	278148	434046	NO ₂	N	N	Y (4m)	1m	Y

Coleraine Borough Council

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?
41 Sea Road, Castlerock	Suburban	277358	435877	NO ₂	N	N	Y (4m)	1m	Y
Bottom of Castlerock Road, Coleraine	Urban	248397	432451	NO ₂	N	N	Y (7m)	1m	Y
Dunnes Car Park, Coleraine	Urban	284619	432418	NO ₂	N	N	Y (4m)	1m	Y
End of Portstewart Road, Coleraine	Urban	285036	433417	NO ₂	N	N	Y (4m)	1m	Y

2.2 Comparison of Monitoring Results with AQ Objectives

On the basis of previous rounds of review and assessment and identified requirements, Coleraine Borough Council currently monitor for Nitrogen Dioxide only. The Borough has no air quality management areas and thus has no continuous automatic monitoring equipment. The details of the diffusion tube results relevant for this assessment are shown below.

2.2.1 Nitrogen Dioxide

Coleraine Borough Council has assessed air quality for Nitrogen Dioxide since 2004. In 2008, the Borough changed tube supplier from Lambeth Scientific Services to Gradko. This resulted in an overlap of the two suppliers for a period of 10 months of the year. During the period of assessment only one site has exceeded the objective of $40\mu\text{g}/\text{m}^3$ in 2006. This exceedence was $.3\mu\text{g}/\text{m}^3$ and was not deemed to be significant enough to go to detailed assessment. Data in subsequent years has shown no exceedence in this or any other area. In order to continue to properly fulfil our statutory duty the department has decided to supplement the data with further tubes to this and other areas.

Automatic Monitoring Data

Coleraine Borough Council do not undertake any automatic monitoring

Diffusion Tube Monitoring Data

Table 2.3 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 = 0.89)
								2011 ($\mu\text{g}/\text{m}^3$)
A1	Outside 114 Coleraine Road, Portstewart	Kerbside	N	N	11	N/A	N	11.67
	Outside O'Hara Court, Portstewart	Kerbside	N	N	12	N/A	N	17.81
	Corner of Antrim Gardens, Main Street, Portrush	Kerbside	N	N	9	N/A	N	10.03
	Crocknamack Roundabout, Portrush	Kerbside	N	N	12	N/A	N	19.49
	Outside 118 Coleraine Road, Portrush	Suburban	N	N	12	N/A	N	12.31
	UUC, Coleraine	Urban background	N	N	12	N/A	N	7.45
	Millburn Road, Coleraine	Roadside	N	N	12	N/A	N	17.03

Coleraine Borough Council

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 = 0.89)
								2011 ($\mu\text{g}/\text{m}^3$)
	Bottom of Union Street, Coleraine	Urban centre	N	N	11	N/A	N	29.81
	Corner of Brook Street, Coleraine	Urban centre	N	N	11	N/A	N	27.21
	Top of Union Street, Coleraine	Urban centre	N	N	11	N/A	N	21.34
	Outside 42 Bushmills Road, Coleraine	Roadside	N	N	12	N/A	N	22.24
	Railway Road, Coleraine	Urban centre	N	N	12	N/A	N	15.62
	Outside 75 Long Commons, Coleraine	Roadside	N	N	12	N/A	N	19.47
	Outside Tesco, Coleraine	Urban centre	N	N	11	N/A	N	20.91
	Hanover Place Post 34, Coleraine	Roadside	N	N	12	N/A	N	21.92
	Strand Road, Coleraine	Kerbside	N	N	12	N/A	N	18.87
	Lodge Road, Roundabout, Coleraine	Roadside	N	N	12	N/A	N	26.01
	Mountsandel, Rugby Avenue Roundabout	Roadside	N	N	12	N/A	N	14.21
	Glenara Court, Castleroe, Coleraine	Rural	N	N	11	N/A	N	6.68

Coleraine Borough Council

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 = 0.89)
								2011 ($\mu\text{g}/\text{m}^3$)
	Kilrea, Lower Diamond	Roadside	N	N	11	N/A	N	23.36
	Kilrea, Maghera Street	Roadside	N	N	11	N/A	N	16.58
	Outside 8 Carhill Road, Garvagh	Roadside	N	N	11	N/A	N	13.28
	Opposite SuperValu, Garvagh	Roadside	N	N	11	N/A	N	15.7
	Post 11, Lismurphy, Greenmount	Suburban	N	N	11	N/A	N	17.73
	Outside Killowen House, Coleraine	Roadside	N	N	11	N/A	N	15.91
	Dunboe Gardens, Post 24, Articlave	Roadside	N	N	12	N/A	N	7.85
	41 Sea Road, Castlerock	Suburban	N	N	12	N/A	N	8.6
	Bottom of Castlerock Road, Coleraine	Urban	N	N	12	N/A	N	20.6
	Dunnes Car Park, Coleraine	Urban	N	N	11	N/A	N	19.97
	End of Portstewart Road, Coleraine	Urban	N	N	11	N/A	N	20.86

^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 2.4 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
			2007* (Bias Adjustment Factor = XX)	2008* (Bias Adjustment Factor = XX)	2009* (Bias Adjustment Factor = 0.90)	2010* (Bias Adjustment Factor = 0.95)	2011 (Bias Adjustment Factor = 0.89)
13	Kerbside	N			14.92	16.25	11.67
14	Kerbside	N			20.54	23.56	17.81
15	Kerbside	N			13.33	12.65	10.03
7	Kerbside	N			24.43	23.83	19.49
16	Suburban	N			13.98	15.52	12.31
9	Urban background	N			8.74	10.26	7.45
17	Roadside	N			18.82	21.95	17.03
1	Urban centre	N			32.35	31.66	29.81
18	Urban centre	N			33.14	29.65	27.21
2	Urban centre	N			23.34	25.12	21.34
19	Roadside	N			24.73	24.44	22.24
3	Urban centre	N			17.06	18.61	15.62
20	Roadside	N			20.36	24.66	19.47
10	Urban centre	N			22.86	27.23	20.91
21	Roadside	N			23.84	25.72	21.92
5	Kerbside	N			22.28	23.53	18.87

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
			2007* (Bias Adjustment Factor = XX)	2008* (Bias Adjustment Factor = XX)	2009* (Bias Adjustment Factor = 0.90)	2010* (Bias Adjustment Factor = 0.95)	2011 (Bias Adjustment Factor = 0.89)
4	Roadside	N			26.09	32.52	26.01
22	Roadside	N			15.68	20.19	14.21
8	Rural	N			7.79	8.26	6.68
23	Roadside	N			24.04	25.1	23.36
24	Roadside	N			17.57	19.77	16.58
25	Roadside	N			15.96	16.96	13.28
26	Roadside	N			17.36	18.9	15.7
27	Suburban	N			18.97	20.53	17.73
28	Roadside	N			18.53	20.82	15.91
29	Roadside	N			10.52	10.34	7.85
30	Suburban	N			10.19	10.32	8.6
12	Urban	N			23.7	27.17	20.6
6	Urban	N			20.8	20.8	19.97
11	Urban	N			23.19	22.87	20.86

*Optional

Figure 2. Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites

Trends NO2 04-08

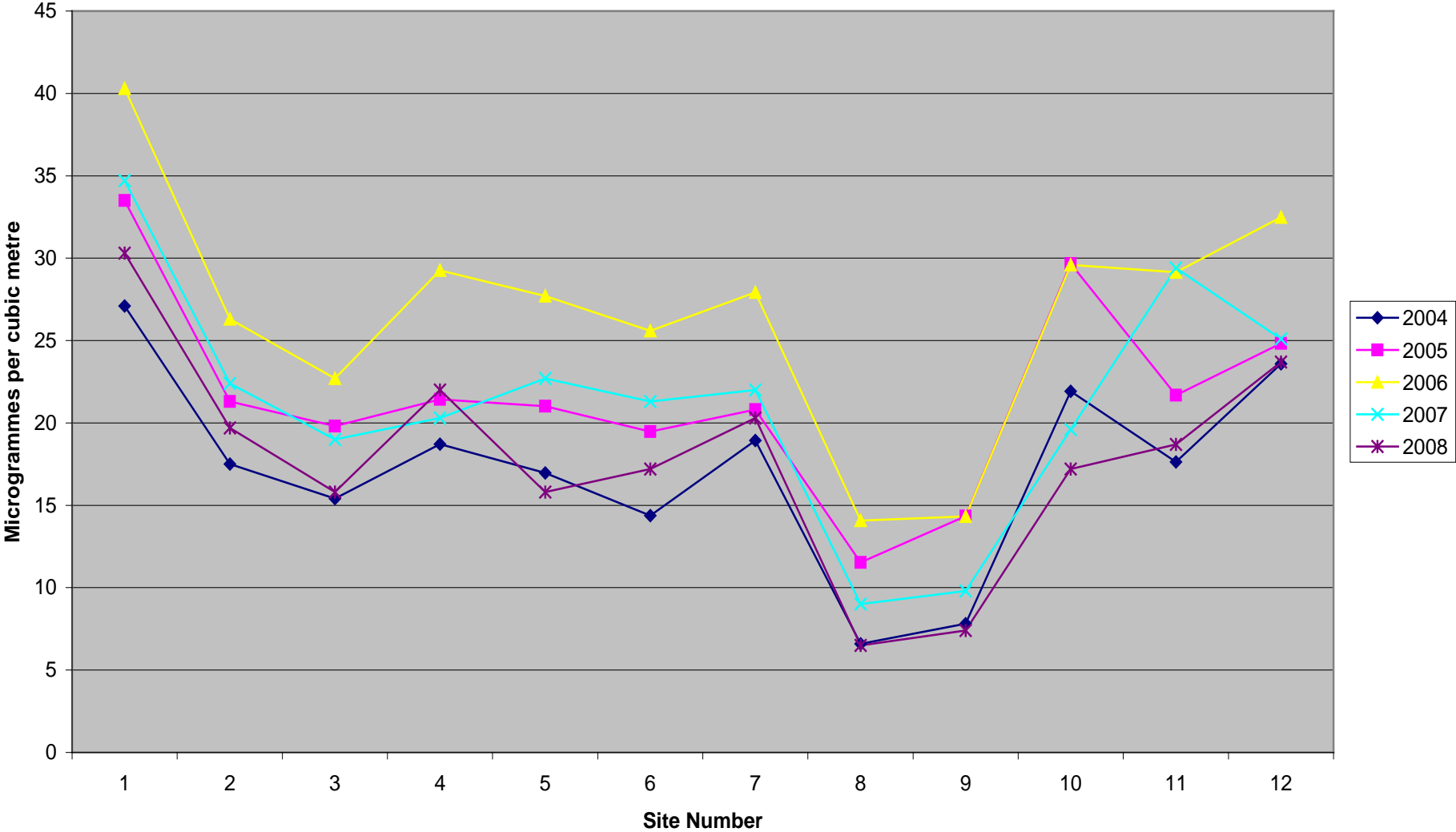


Figure 3 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites



2.2.2 PM₁₀

In 2006 Coleraine Borough Council completed its updating and screening assessment of local air quality. The areas of Articlave, Liffock, Castlerock, 3 areas in Garvagh, Mettican, Kilrea, Larchfield and Macosquin were assessed for domestic fuel combustion. Housing counts were undertaken from maps and location visits. Information detailing the number of Housing Executive houses and heating type was obtained from the Northern Ireland Housing Executive – Heating Co-ordination Unit. The proportion of solid fuel users in private housing was obtained from the Northern Ireland Housing Condition Survey 2001 Main Report.

This assessment identified the need to conduct a fuel survey in the areas of Castlerock and Articlave. The objective of this fuel survey was to provide more accurate data on solid fuel use in homes in these areas. Data from this survey was used to calculate the effective density of coal burning houses and determine whether there was an exceedance of the criterion in the nomograms laid out in Technical Guidance LAQM.TG(03). This in turn determined whether there was a requirement to proceed to a detailed assessment for particulate matter in these areas.

Where detailed assessment is required the modelling requirements would be highly dependent upon the manner in which the coal-burning houses are distributed. Care was taken not to aggregate the emissions over a large area in which coal burning does not predominantly take place, as this would dilute the emission strength.

This survey identified that oil is the primary fuel used for home heating in private homes in both Articlave and Castlerock. Both areas fell under the threshold of 50 solid fuel burning homes in 500 x 500m and therefore further assessment is not required. Coleraine therefore does not currently monitor for particulate matter.

2.2.3 Sulphur Dioxide

The first round of review and assessment concluded that there were no Part A or B processes with the potential to emit significant quantities of sulphur dioxide. It identified 2 significant combustion systems with thermal power rating greater than 5MW. It also identified three 1x1 km grid squares in Coleraine, one in Portstewart and one in Portrush, with more than 300 houses burning coal. It recommended a second stage review for sulphur dioxide with respect to domestic combustion and the two industrial combustion systems. Further modeling concluded that the objective for sulphur dioxide would most likely be met.

2.2.4 Benzene

The first round of Review and Assessment concluded that there were no significant sources of benzene in the Coleraine area or in neighbouring areas and that there were no proposals for developments likely to emit this pollutant. It stated that national policies were expected to deliver the air quality objective by the end of 2003 and that the objective for benzene was likely to be achieved in the Coleraine area.

2.2.5 Other pollutants monitored

Coleraine Borough Council does not routinely monitor for any other pollutants.

Summary of Compliance with AQS Objectives

Coleraine Borough Council has examined the results from monitoring in the borough. Concentrations are all below the objectives, 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

Coleraine Borough 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

Coleraine Borough 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.

Coleraine Borough Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Coleraine Borough 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

Coleraine Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

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

3.7 Bus and Coach Stations

Coleraine Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Coleraine Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Coleraine Borough 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

Coleraine Borough 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)

Coleraine Borough 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

Coleraine Borough 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.

Coleraine Borough 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.

5.2 Major Fuel (Petrol) Storage Depots

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

5.3 Petrol Stations

Coleraine Borough Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

Coleraine Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Coleraine Borough Council confirms that there is no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Coleraine Borough Council confirms that there is no biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

In 2006 Coleraine Borough Council completed its updating and screening assessment of local air quality. The areas of Articlave, Liffock, Castlerock, 3 areas in Garvagh, Mettican, Kilrea, Larchfield and Macosquin were assessed for domestic fuel combustion. Housing counts were undertaken from maps and location visits. Information detailing the number of Housing Executive houses and heating type was obtained from the Northern Ireland Housing Executive – Heating Co-ordination Unit. The proportion of solid fuel users in private housing was obtained from the Northern Ireland Housing Condition Survey 2001 Main Report.

This assessment identified the need to conduct a fuel survey in the areas of Castlerock and Articlave. The objective of this fuel survey was to provide more accurate data on solid fuel use in homes in these areas. Data from this survey was used to calculate the effective density of coal burning houses and determine whether there was an exceedance of the criterion in the nomograms laid out in Technical Guidance LAQM.TG(03). This in turn determined whether there was a requirement to proceed to a detailed assessment for particulate matter in these areas.

This survey identified that oil is the primary fuel used for home heating in private homes in both Articlave and Castlerock. Both areas fell under the threshold of 50 solid fuel burning homes in 500 x 500m and therefore further assessment was not deemed to be required.

Coleraine Borough Council has assessed areas of significant domestic solid fuel use, and concluded that it will not be necessary to proceed to a Detailed Assessment.

7 Fugitive or Uncontrolled Sources

The first round of review and assessment predicted the highest background concentration of PM10 in the borough in 2004 to be $18.9\mu\text{g}/\text{m}^3$. Data from 'Maps of Estimated Ambient Air Pollution in 2004 and Projections for Other Years' provided on the website <http://www.airquality.co.uk/archive/laqm/tools> showed the estimated annual mean background gravimetric PM10 concentration in 2004 to be between 15 and $20\mu\text{g}/\text{m}^3$. Similar data for the year 2008 shows that estimated annual mean background gravimetric PM10 concentration was between 10 and $15.5\mu\text{g}/\text{m}^3$. According to LAQM.TG (09) relevant exposure should be defined as within 200m of the source if the 2004 background concentration is predicted to be less than $26\mu\text{g}/\text{m}^3$. Locations not covered by previous rounds of review and assessment have not been identified. At the time of writing this report background maps for 2010 were as yet unavailable.

Coleraine Borough 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

Monitoring carried out since the last round of review and assessment has identified no exceedence of the air quality objectives at any sites. Recent monitoring has shown a decrease of levels at one site causing concern.

8.2 Conclusions from Assessment of Sources

As detailed above, Coleraine Borough Council has identified no new road transport, other transport, industrial installations, commercial/domestic sources, fugitive emissions, residential or commercial developments not previously assessed which may lead to an exceedence of air quality objectives

8.3 Proposed Actions

The Updating and Screening Assessment has not identified the need to proceed to a Detailed Assessment for any pollutant or identified any need for additional monitoring, or changes to the existing monitoring programme. Coleraine borough Council have recently increased the number of sites at which Nitrogen Dioxide is monitored in order to ensure that air quality objectives are not exceeded. The Borough has no existing AQMAs.

The next proposed action by this authority therefore will be to submit a Progress report in 2013.

9 References

- The Environment (Northern Ireland) Order 2002
- UK National Air Quality Archive, <http://www.airquality.co.uk/archive>
- Air Quality Regulations (Northern Ireland) 2003
- The Air Quality Limit Values Regulations (Northern Ireland) 2002, S.R. 2002 No.94
- The Air Quality Limit Values (Amendment) Regulations (Northern Ireland) 2002, S.R. 2002 No. 357
- Department of the Environment's Local Air Quality Management Technical Guidance LAQM. TG(09).
- Traffic and travel information 2009, Roads Service
- Air Quality Review and Assessment website – Spreadsheet of Bias Adjustment Factors, <http://www.uwe.ac.uk/aqm/review>
- <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>

Appendices

Appendix A: QA:QC Data

Factor from Local Co-location Studies (if available)

Coleraine Borough Council does not currently carry out co location studies.

Diffusion Tube Bias Adjustment Factors

Gradko preparation method is 20% TEA in water. Bias adjustment factor for this laboratory for 2011. is .89

Spresadsheet used, Version Number 03/12 <http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

Discussion of Choice of Factor to Use

Coleraine Borough Council does not currently have a co location study and therefore the national Bias Adjustment Factor was used. The QA/QC data for the national factors was taken into consideration.

PM Monitoring Adjustment

Coleraine Borough Council does not currently monitor for particulate matter

Short-term to Long-term Data adjustment

No short to long term monitoring adjustments are required

QA/QC of automatic monitoring

Coleraine Borough Council does not currently carry out automatic monitoring

QA/QC of diffusion tube monitoring

Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies

Gradko 20%TEA inWater

Diffusion tube precision results have been obtained from

<http://laqm.defra.gov.uk/diffusion-tubes/precision.html>

2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Poor
2007	Poor
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2007	Good
2008	Good
2008	Good
2008	Good
2008	Poor
2008	Good
2008	Good
2008	Good
2008	Good
2008	Good
2008	Good
2008	Good
2008	Poor

Coleraine Borough Council

2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
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2009	GOOD	2010	GOOD
2009	GOOD	2010	GOOD
2009	POOR	2010	GOOD
2009	GOOD	2010	GOOD
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2009	GOOD	2010	GOOD
2009	GOOD	2010	POOR
2009	GOOD	2010	GOOD
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2011	GOOD
2011	GOOD
2011	POOR
2011	POOR

Appendix B: Part A and B Authorised Processes Coleraine Borough

P0087/05A	Craigmore Landfill Site	Craigmore Landfill Craigmore Road RINGSEND Co. Londonderry BT51 5HF	Coleraine BC	5.2	Disposal of Waste by Landfill	Determined
P0089/05A	Dairy Produce Packers Ltd	Millburn Road COLERAINE Co. Londonderry BT52 1QZ	Coleraine BC	6.8	The Treatment of Animal and Vegetable Matter	Determined
P0104/05A	Ballyrashane Co-op	18 Creamery Road Cloyfin COLERAINE Co. Londonderry BT52 2NE	Coleraine BC	6.8	The Treatment of Animal and Vegetable Matter	Determined
P0138/06A	Spanboard Products Ltd	10 Curragh Road Castleroe COLERAINE Co. Londonderry BT51 3RY	Coleraine BC	6.1	Paper, Pulp and Board Manufacturing Activities	Determined
P0148/06A	Craigahullier Landfill Site	Craigahulliar Landfill Ballymacrae Road PORTRUSH Co. Antrim BT56 0NN	Coleraine BC	5.2	Disposal of Waste by Landfill	Determined
P0236/07A	Ballyhome Road Landfill Site	Rear of 61 Ballyhome Road Portrush COLERAINE Co. Londonderry BT56 8NG	Coleraine BC	5.2	Disposal of Waste by Landfill	Pending
P0337/10A	Cam Road Landfill Site	19 Cam Road Macosquin Coleraine Co Londonderry BT51 4PX	Coleraine BC	5.2	Disposal of Waste by Landfill	Determined
PPC0033/08B	Northstone (NI) Ltd	Croaghan Depot Shinny Road Macosquin COLERAINE Co. Londonderry BT51 4PS	Coleraine BC	3.5	Other Mineral Activities	Determined
PPC0050/08B	Kennedy Concrete Products Ltd	1 Letterloan Road Macosquin COLERAINE Co. Londonderry BT51 4PP	Coleraine BC	3.1	Production of Cement and Lime	Determined
PPC0054/08B	Craigall Quarry	Cullyrammer Road Kilrea COLERAINE Co. Londonderry BT51 5YL	Coleraine BC	3.5	Other Mineral Activities	Determined
PPC0055/08B	B Mullan & Sons (Contractors) Ltd	Cam Quarry 19 Cam Road Macosquin COLERAINE Co. Londonderry BT51 4PX	Coleraine BC	3.5	Other Mineral Activities	Determined
PPC0133/08B	Conway Bros	Blackhill Quarries 129 Killeague Road Blackhill COLERAINE BT51 4HH	Coleraine BC	3.5	Other Mineral Activities	Determined
PPC0191/08B	Crocknamolt Quarry	Ballyholme Road PORTRUSH Co. Antrim BT56 8NE	Coleraine BC	3.5	Other Mineral Activities	Determined
PPC0232/08B	Whitemountain Quarries Ltd	39 Cam Road Macosquin COLERAINE Co. Londonderry BT51 4PX	Coleraine BC	3.5	Other Mineral Activities	Determined

<http://www.doeni.gov.uk/niea/other-index/content-databases/content-databases-listofpartabprocessesppc.htm>