2011 Air Quality Progress Report for Ards Borough Council

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

May 2011

Local Authority Officer	Gareth Kinnear Senior Environmental Health Officer

Department	Environmental Health
Address	2 Church Street, Newtownards Co Down BT23 4AP
Telephone	02891824051
e-mail	gareth.kinnear@ards-council.gov.uk

Report Reference number	Progress Report 2011
Date	May 2011

Executive Summary

Increasing priority has been given at both European and National Levels to the assessment and the management of air quality. The Air Quality Strategy has established the frame work for air quality management in the UK. Local Authorities have a duty under the Environment Act 1995 to assess air quality and produce an annual report, action is required in areas where the objectives are or are likely to be exceeded.

Air Quality in Northern Ireland has shown substantial improvement in recent years. In particular levels of pollutants associated with coal and oil combustion have declined significantly over the past decade. Locally the NIHE has completed a fuel conversion scheme over the past few years which has dramatically reduced the number of coal burning properties in Newtownards.

This Progress Report has been undertaken in accordance with the Local Air Quality Technical Guidance TG>09. It forms part of a continual process of review and assessment of local air quality and provides an opportunity to update information on the pollution climate and to reassess conclusions from previous assessments.

Within this report sources of pollution in the Borough have been re-examined and any aspects that have changed since the previous round of review and assessment have been identified. New monitoring data has been used to assess compliance with the relevant national air quality objectives. The conclusions from the previous round of review and assessment continue to be valid and there is no need to proceed to a detailed assessment for any of the monitored pollutants.

Table of contents

1 Introduction

1.1 Description of Local Authority Area

Ards Borough Council is situated east of Belfast on the shores of Strangford Lough, which is designated as an area of outstanding natural beauty and special scientific interest. The Borough comprises of 140 square miles, bounded by 90 miles of coastline. Ards remains one of the fastest growing boroughs with the Northern Ireland Statistics and Research Agency Mid 2006 population estimates standing at 76,179 representing 4.4% of the total population of Northern Ireland.

The Borough is of mixed urban and rural character. The main town of Newtownards is located at the northern end of Strangford Lough and is a natural basin surrounded by hills. The prevailing wind direction is south-westerly. The other main centres of population include Comber, Donaghadee and Portaferry. Neighbouring Councils include North Down Borough Council, Castlereagh Borough Council and Down District Council.

Map of Borough:

1.2 Purpose of Progress Report

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

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

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in 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 micrograms 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 Local Air Quality Management in Northern Ireland.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	3.25 $\mu g/m^3$	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

This Progress Report is the second report in round four of the staged Review and Assessment process undertaken by all local authorities in the UK. The first round consisted of four stages which resulted in a number of authorities declaring air quality management areas (AQMAs) for particular pollutants and producing action plans to address air quality issues. The second and third rounds consisted of a series of USA reports and detailed assessments where required, to ensure that the AQMAs and action plans are kept up to date.

The stage one review and assessment completed in 2000 concluded that:

1. The air quality objectives for the following pollutants were not likely to be exceeded:

Benzene, 1,2- Butadiene and Lead

2. A detailed assessment was required for the following pollutants:

Carbon Monoxide, Sulphur Dioxide, Nitrogen dioxide and PM_{10}

The stage two & three assessment completed in 2004 concluded that:

1. The air quality objectives for the following pollutants were not likely to be exceeded:

Carbon Monoxide, Nitrogen Dioxide, and Sulphur Dioxide

2. Based on the predictions of the dispersion modelling exercise it was identified that the objective for the following pollutant would be marginally exceeded:

PM_{10}

The area of predicted PM_{10} exceedence was identified to be within the area of Bradshaw's Brae, based on the findings of the dispersion modelling exercise. The modelling was undertaken by BMT Cordah on behalf of the Council during 2003/2004. The findings were in part based on the real time monitoring for PM_{10} at the Glen Community Centre in Newtownards, and on a fuel usage survey carried out in April 2003. BMT Cordah concluded that the NAQS 24 hour mean would be marginally exceeded, as a result of the high level of domestic coal burning in the town.

The Council therefore declared an AQMA, and produced an action plan as a means to improve air quality in Newtownards. The AQMA encapsulated the areas within Newtownards that had the highest density of dwellings using solid fuel burning as the primary source of heating. The automatic monitoring station was relocated to a site within the AQMA, to confirm the findings of the dispersion modelling exercise. Initially there were some difficulties in finding a suitable location; however, the monitoring

station was moved to a site within the grounds of Ards Leisure Centre during the spring of 2006. Information relating to the site, including the latest monitoring data, can be accessed at http://www.airqualityni.co.uk. The monitoring from this location indicated that it was unlikely that the objective for PM10 will be exceeded. As a result Ards Borough Council revoked the AQMA on 1st December 2007.

In addition it was felt it would be beneficial to identify any major changes in fuel consumption within the AQMA. A consultation exercise was undertaken with the Northern Ireland Housing Executive (NIHE), to assess the amount of fuel conversion carried out within their properties since 2003. An estimated 859 properties were converted between 2003 and 2009, which has significantly reduced the emissions from domestic coal burning properties within the town.

A progress report was completed in 2008 and an Updating and Screening Assessment 2009, both reports re-examined the possible pollution sources within the borough and any aspects that had changed since the previous round of review and assessment were identified. Monitoring data for the relevant years was used to assess compliance with the relevant national air quality objectives. The conclusions from the previous rounds of review and assessment were found to be valid and a detailed assessment was therefore not required. No exceedences of the objectives were identified in 2008 or 2009.

A progress report in April 2010 once again concluded there were no exceedences of the objectives.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

From mid 2002 until April 2006, an automatic monitoring station was located at an urban background Estate, Newtownards, to monitor pollutants from the high density of domestic coal burning properties in the area. PM_{10} is monitored using an automatic TEOM sampler and sulphur dioxide is monitored using a UV fluorescence analyser. Modelling carried out for the combined 2nd/3rd review indicated the possibility of exceedence of the PM_{10} objective. As a result an AQMA was declared in 2005 and the automatic monitoring station was moved to a location within the area of predicted exceedence in April 2006. The station is now located at the rear of Ards Leisure Centre, William Street, Newtownards. The monitoring results from this location indicate that it is unlikely that the objectives for PM_{10} or Sulphur Dioxide would be exceeded. Therefore the Sulphur Dioxide analyser was decommissioned on the 6th April 2010 as levels continued to be extremely low. Automatic monitoring of PM10 continued in 2010 at the Ards Leisure centre site.

The reference method for PM_{10} is the gravimetric technique, in which the ambient concentration of PM_{10} is calculated from the mass of particulate matter collected on a filter. The TEOM has been found to underestimate relative to this reference method. As a result data obtained from the TEOM sampler has been corrected using Volatile Correction Model.

Quality Assurance and Quality Control

Environmental Monitoring System (EMS) the supplier of the automated Sulphur Dioxide and PM10 analysers are currently contracted to undertake routine servicing and maintenance of the equipment. This aims to ensure a high percentage of data capture due to reduced delays in the execution of repairs, in the event of equipment breakdown.

The Council has engaged the services of AEA to undertake independent 6 –monthly audits. AEA is also responsible for data management which involves downloading data directly from the site on a daily basis and validating the data to provide reports at regular intervals. Any irregularities are notified immediately to the Council and officers can take measures to rectify any problems or notify EMS to carry out repairs if necessary. The Councils air quality officers undertake routine calibration and maintenance of the equipment following the QA/QC procedures set out by AEA. A data capture rate of 90% for ratified data is specified in the technical guidance and is the recommended as a target for automatic monitoring.

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?
Ards Leisure Centre	Urban Background	348469	374516	PM10 SO2 **(a)**	TEOM SO2 Analyser	No	N	N/A	Y

(a) the SO2 analyser was decommissioned on 6th April 2010 as levels were extremely low.

Non-Automatic Monitoring

Sulphur Dioxide:

In November 2000, a semi-automatic eight-port bubbler was installed within the Scrabo Estate in Newtownards. This area at the time was identified as an area with high density of domestic coal burning properties, the number of properties using coal has since decreased significantly over the past 10 years. The 8-port bubbler apparatus was originally used to measure both sulphur dioxide and suspended particulate matter as black smoke, however, since 2007 it has only been used for black smoke. This method does not allow direct comparison with the National Air Quality Objectives; however it was a useful indicative measurement, although due to the unavailability of replacement parts, the site was decommissioned January 2010.

Nitrogen Dioxide:

Ards Borough Council has monitored Nitrogen Dioxide by passive diffusion tubes regularly since 1994. Diffusion tube data cannot be compared directly with air quality limit values based on short-term averages; however, they can be used to help identify areas with high concentrations of NO_2, which require more detailed investigation. The aim of the NO2 monitoring undertaken has been to measure pollutant concentrations at busy roads and junctions especially near residential areas. The tubes are sited using guidelines from AEA but are not part of the monitoring network.

Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref		Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
2a East Street	Urban Background	349001	374242	Nitrogen Dioxide	N	Y	>50m from busy road	Y
Islandmore Avenue	Urban Background	349847	375132	Nitrogen Dioxide	N	Y	>50m from busy road	Y
Bangor Road	Roadside	349607	374267	Nitrogen Dioxide	N	Y	1.5m	Y
Talbot Street	Roadside	348994	374553	Nitrogen Dioxide	N	Y	1.5m	Y
Church Street	Roadside	348123	374364	Nitrogen Dioxide	N	Y	1.5m	Y
Court Street (a)	Roadside	348945	373928	Nitrogen Dioxide	N	N	1.5m	N
South Street (b)	Roadside	348238	373590	Nitrogen Dioxide	N	Y	1.5m	Y

(a) Court Street site in 2009 remained close to the objective but as there was no relevant exposure at this site, the diffusion tube was relocated to the facade of the nearest relevant exposure ie. South Street.
(b) New monitoring site 67 South Street, Newtownards.

Quality Assurance and Quality Control

All six of the Nitrogen Dioxide Tubes are sited in accordance with the NETCEN guidelines; however, there is no longer a national monitoring network. The NO_2 tubes are supplied by Gradko Anaylsed by Eurofins, (preparation method 20% TEA in water), which is a UKAS recognised laboratory for the provision and analysis of diffusion tubes. They participate in the Work Place Analysis Scheme for Proficiency (WASP) for NO_2. This scheme is an independent proficiency testing scheme operated by the Health and Safety Laboratory (HSL). Each month a diffusion tube doped with nitrite is distributed to each participating laboratory; participants then analyse the tube and report the result to the HSL. The nominal mass of nitrite on the doped tubes is different each month, and is intended to reflect the range encountered in actual monitoring.

The Technical guidance states that diffusion tube data should be appropriately bias corrected. Unfortunately the Council does not carry out continuous monitoring for NO_2, therefore can not undertake a collocation study. After consultation with the air quality officer for the Eastern Group it was decided that Eurofins national standard bias adjustment factor for 2010 should be used. The overall correction factor in the UK for 2010 is 0.84. There are 4 co-located studies carried out within the local Eastern Group area and the average of these is also 0.84.t

http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors_v04_11_v6.xls

2. Comparison of Monitoring Results with Air Quality Objectives

Nitrogen Dioxide

Pollutant	Objective	Date to be achieved by
Nitrogen Dioxide	200ug/m3 hourly mean not to be exceeded >18 times per year 40ug/m3 annual mean	31st December 2005 31st December 2005

Nitrogen dioxide (NO2) and Nitrogen oxide (NO) are both oxides of nitrogen and are collectively referred to as Nox. All combustion processes produce Nox emissions largely in the form of nitric oxide which is converted to nitrogen dioxide, mainly as a result of reactions with ozone in the atmosphere. It is Nitrogen Dioxide which is of most concern, as it is respiratory irritant.

The principal source of nitrogen dioxide is road transport. Major Roads carrying large volumes of high speed traffic are major contributors, as are city centres with congested streets. Other significant sources of nitrogen oxides emissions include power stations and domestic sources.

The conclusion from the previous round of review and assessment continues to be valid, and it is not necessary to proceed to a detailed assessment.

Diffusion Tube Monitoring Data

There are currently 6 diffusion tubes located throughout the town of Newtownards, all results from 2006-2010 are contained within appendix two. In 2007 it was decided to relocate the tube at the Town Hall, to 2a East Street, Newtownards and the tube at Ashgrove Avenue, to Church Street Newtownards as it felt there was no relevant exposure at either site. On 1st April 2010 the Court street site was also relocate to the nearest relevant exposure at 67 South Street, Newtownards.

The 2010 results (annual average) show no exceedences of the National Air Quality objective. Although the Court Street 2009 result is just above the national standard, there was no relevant exposure at this location. However, this location was considered to be the best possible location to allow for monitoring of the change in traffic flow with the construction of the new A20 Newtownards Southern Relief Road which was completed 2009, this involved the construction of a 2.0km new link road, from the A20 Blaire Main Road South to the A21 Comber to the Portaferry Road, Newtownards. Following a recent discussion with the air quality officer a new site was identified with relevant exposure (67 South Street, Newtownards) within this area and the diffusion tube relocated.

There is no Automatic NO2 site within the Ards area, so therefore no local bias adjustment factor for the diffusion tubes is available. There are 4 co-location studies carried out within the local Eastern Group area and the average of these is 0.84, the national bias adjustment factor and therefore a decision was made to use the LAQM data base bias adjustment for Eurofins of 0.84.
The results for the past 3 years do not show any particular trends. Annual variation is more likely to be as a result of climatic conditions, rather than changes in emissions.

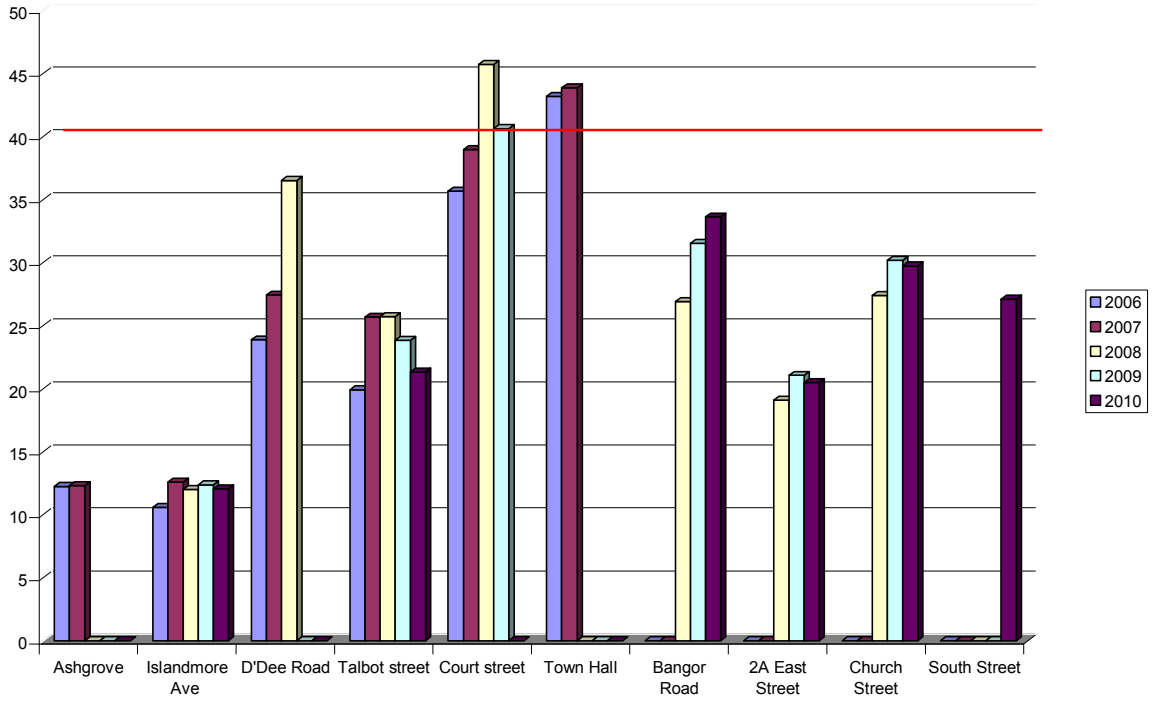
Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes for 2010

Site ID	Location	Within AQMA?	Data Capture 2010 %	Annual mean concentrations
				2010 (μg/m^3) Adjusted for bias 0.84
	East Street	N	100	20
	South Street	N	75	**27**
	Bangor Road	N	100	34
	Islandmore Avenue	N	100	12
	Church Street	N	100	30
	Talbot Street	N	100	21

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes 2008-10

Site ID	Location	Within AQMA?	Annual mean concentrations (μg/m^3) Adjusted for bias		
			2008	2009	2010
	East Street	N	-	21	20
	Court Street	N	46	41	-
	Bangor Road	N	27	32	34
	Islandmore Aven	N	12	12	12
	Church Street	N	27	30	30
	South Street	N			27
	Talbot Street	N	26	24	21

Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites.



PM_{10}

Particulate matter is often associated with a range of medical conditions including effects on the respiratory and cardiovascular systems and asthma. Particulate matter in the atmosphere is composed of a wide range of material of various origins. PM^{10} is the description given to particles falling below 10*u*m in diameter.

There are a wide range of emissions in the UK which can be divided into three main categories:
1. Primary particle emissions – which are derived directly from combustion sources including road traffic, power generation and industrial processes.
2. Secondary particles- which are formed by chemical reaction in the atmosphere
3. Coarse particles – comprise of emissions from a wide range of sources including re-suspended dusts from road traffic, construction works, and wind blown dusts and soils, and sea salt.

The conclusion from the previous round of review and assessment continues to be valid that it is not necessary to proceed to a detailed assessment for PM^{10} .The results from the automatic monitoring station located in William Street, Newtownards indicates that there were no exceedences of the objective for this pollutant in 2010.

Produced by AEA on behalf of Ards Borough Council

ARDS LEISURE CENTRE
01 January to 31 December 2010

These data have been fully ratified by AEA

POLLUTANT	PM_{10}+	PM_{10} VCM*	PM_{10} GR10
Number Very High	-	-	0
Number High	-	-	0
Number Moderate	-	-	0
Number Low	-	-	8722
Maximum 15-minute mean	387 µg m^{-3}	-	503 µg m^{-3}
Maximum hourly mean	111 µg m^{-3}	-	144 µg m^{-3}
Maximum running 8-hour mean	52 µg m^{-3}	-	67 µg m^{-3}
Maximum running 24-hour mean	31 µg m^{-3}	-	40 µg m^{-3}
Maximum daily mean	30 µg m^{-3}	51 µg m^{-3}	40 µg m^{-3}
90th percentile of daily means	19 µg m^{-3}	30 µg m^{-3}	25 µg m^{-3}
Average	13 µg m^{-3}	20 µg m^{-3}	18 µg m^{-3}
Data capture	99.4 %	89.3%	99.4 %

+ PM_{10} as measured by a TEOM
*PM_{10} VCM – TEOM data corrected using Volatile Correction Model
PM_{10} GR10 - indicative gravimetric corrected, i.e. 'raw' TEOM PM_{10} data with a 1.3 factor applied
Particulate matter concentrations are reported at ambient temperature and pressure.

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
PM_{10} Particulate Matter (VCM Corrected)	Daily mean > 50 µgm^{-3}	1	1
PM_{10} Particulate Matter (VCM Corrected)	Annual mean > 40 µgm^{-3}	-	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

The PM_{10} TEOM data has been corrected using the Volatile Correction Model (www.volatile-correction-model.info) as detailed on Page 3-10 of LAQM.TG (09).

Please be advised the VCM has been calculated using Belfast AURN (contains some provisional data) and locally source ratified FDMS data (Lisburn Dunmurry High School) plus temperature and pressure as selected by the VCM Model

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
PM_{10} Particulate Matter (Gravimetric)	Daily mean > 50 µg m^{-3}	0	0
PM_{10} Particulate Matter (Gravimetric)	Annual mean > 40 µg m^{-3}	0	-

Table 2.5a Results of PM_{10} Automatic Monitoring: Comparison with Annual Mean Objective

Site ID	Location	Within AQMA?	Data Capture 2010 %	Annual mean concentrations ($\mu g/m^3$)		
				2008	2009	2010
1	Ards Leisure Centre	N	99.4	20	18	20

Table 2.5b Results of PM_{10} Automatic Monitoring: Comparison with 24-hour Mean Objective

Site ID	Location	Within AQMA?	Data Capture 2010 %	Number of Exceedences of hourly mean (50 $\mu g/m^3$) *If data capture < 90%, include the 90th %ile of hourly means in brackets.*		
				2008	2009	2010
1	Ards Leisure Centre	N	99.4	0	2	0

Sulphur Dioxide

Sulphur dioxide is an acute respiratory irritant. It is generated during the combustion of fuels containing sulphur. The most significant source is fossil fuelled power stations, other major sources include industrial emissions and commercial & domestic heating.

There is currently no AQMA for sulphur dioxide. The automatic monitoring station located at Ards Leisure Centre, William Street Newtownards since April 2006 to April 2010 continually monitored sulphur dioxide using a UV Fluorescence analyser. The results form the automatic station indicated that during this period there were no exceedences of the objective.

The conclusion from the previous round of review and assessment continues to be valid that the objective for this pollutant would not be exceeded and it is therefore not necessary to proceed to a detailed assessment. After consultation with the air quality officer it was decided that the SO2 analyser should be decommissioned. The analyser was decommissioned on 1st April 2010.

Table 2.6 Results of SO_2 Automatic Monitoring: Comparison with Objectives

Produced by AEA on behalf of Ards Borough Council

ARDS LEISURE CENTRE
01 January to 31 December 2010

These data have been fully ratified by AEA

POLLUTANT	SO_2
Number Very High	0
Number High	0
Number Moderate	0
Number Low	8899
Maximum 15-minute mean	59 μgm^{-3}
Maximum hourly mean	45 μgm^{-3}
Maximum running 8-hour mean	27 μgm^{-3}
Maximum running 24-hour mean	15 μgm^{-3}
Maximum daily mean	13 μgm^{-3}
Average	4 μgm^{-3}
Data capture	25.9 %

Pollutant	Air Quality Regulations (Northern Ireland) 2003	Exceedences	Days
Sulphur Dioxide	15-minute mean > 266 μgm^{-3}	0	0
Sulphur Dioxide	Hourly mean > 350 μgm^{-3}	0	0
Sulphur Dioxide	Daily mean > 125 μgm^{-3}	0	0

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

The SO2 analyser was decommissioned on 1st April 2010 therefore only 25.9% data capture was obtained in 2010.

Summary of Compliance with AQS Objectives

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

Delete box if not applicable. Otherwise add local authority name, amend the text as appropriate and leave box in the report.

3 New Local Developments

Ards Borough Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Delete box if not applicable. Otherwise add local authority name and leave in.

Road Traffic Sources

The following road has been constructed since the last review and assessment:

A20 Newtownards Southern Relief Road was completed early 2009, this involved the construction of a 2.0KM new link road, from the A20 Blaire Main Road South to the A21 Comber to the Portaferry Road in connection with the Castlebawn development.

An environmental impact assessment was carried out at the planning stage which adequately considered the effect on local air quality and showed no potential impact on the air quality objectives.

Industrial Sources

Ards Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area.

Commercial and Domestic Sources

Ards Borough Council confirms that there are no new commercial or domestic sources within the Borough.

New Developments with Fugitive or Uncontrolled Sources

Ards Borough Council confirms that there are no new potential sources of fugitive particulate matter emissions in the District.

4 Conclusions and Proposed Actions

4.1 Conclusions from New Monitoring Data

The 2010 monitoring data has been assessed and has indicated no exceedences of the national air quality objectives. It is therefore not necessary to proceed to a detailed assessment for any of the pollutants, however monitoring should continue at key locations to allow for comparison in future rounds of review and assessment.

4.2 Proposed Actions

Ards Borough Council intends to:

1. Continue to monitor nitrogen dioxide in key locations.

2. To decommission the Automatic PM10 site at Ards Leisure Centre in 2011 as levels remain below the objective. (SO2 analyser decommissioned 1st April 2010).

3. Produce a workplace travel plan for employees

4. Actively promote the governments car sharing scheme throughout the Borough

5. Submit an Updating and Screening Assessment 2012

References

- Part IV of the Environment Act 1995 Local Air Quality Management Technical Guidance LAQM.TG (09)
- The Northern Ireland Air Quality Website-www.airquality.ni.gov.uk
- Air Pollution NI- AEA/DOE pollution report
- Ards Borough Council Updating and Screening Assessment 2009

Appendix 1: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Information regarding Eurofins Bias Adjustment can be viewed at:
http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors_v04_11_v6.xls

Information regarding the tube precision can be viewed at:

www.uwe.ac/aqm/review/R&Asupport/tubeprecision2009pdf

PM Monitoring Adjustment

The reference method for PM_{10} is the gravimetric technique, in which the ambient concentration of PM_{10} is calculated from the mass collected on a filter. The TEOM has been found to underestimate relative to this reference method. As a result data obtained from the TEOM sampler has been corrected using Volatile Correction Model.

QA/QC of Automatic Monitoring

Environmental Monitoring Systems (EMS) the supplier of the automated analysers are currently contracted to undertake routine servicing and maintenance of the equipment. This aims to ensure a percentage of data capture due to reduced delays in the execution of repairs, in the event of equipment breakdown.

The Council has engaged the services of AEA to undertake independent 6 monthly calibrations. AEA is also responsible for data management which involves downloading data directly from the site on a daily basis, and validating the data to provide reports at regular intervals. Any irregularities are notified immediately to the Council and officers can take measures to rectify any problems or notify EMS to carry out repairs if necessary. The Councils air quality officers undertake routine calibration and maintenance of the equipment following the QA/QC procedures set out by AEA. A data capture rate of 90% for ratified data is specified in the technical guidance and is the recommended as a target for automatic monitoring.

QA/QC of diffusion tube monitoring

All six of the Nitrogen Dioxide Tubes are sited in accordance with the AEA guidelines; however, there is no longer a national monitoring network. The NO_2 tubes are supplied by Bureau Veritas and analysed by Eurofins, (preparation method 20% TEA in water), which is a UKAS recognised laboratory for the provision and analysis of diffusion tubes. They participate in the Work Place Analysis Scheme for Proficiency (WASP) for NO_2

Appendix 2: Nitrogen Dioxide Results

	2006	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ards 1	Ashgrove	20.9	16.5	11.3	11.3	0.0	7.8	4.4	7.0	6.1	20.0	14.8	14.8
Ards 2	Islandmore Ave	18.3	14.8	10.4	11.3	0.0	7.0	6.1	7.0	4.4	11.3	12.2	13.9
Ards 3	D'Dee Road	35.7	30.5	28.7	29.6	0.0	21.8	14.8	12.2	17.4	19.1	23.5	29.6
Ards 4	Talbot street	0.0	0.0	20.9	23.5	0.0	20.0	10.4	25.2	0.0	20.9	20.9	17.4
Ards 5	Court street	48.7	55.7	38.3	43.5	0.0	32.2	0.0	27.8	19.1	37.4	20.9	33.1
Ards 6	Town Hall	56.6	37.4	39.2	45.2	0.0	36.5	34.8	33.1	40.0	47.9	63.5	40.9

	2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ards 1	Ashgrove	18.3	18.3	13.8	8.3	6.4	9.2	6.4	8.3	11.9	12.8	14.7	19.3
Ards 2	Islandmore Ave	16.5	18.3	11.9	6.4	7.3	5.5	9.2	5.5	11.0	28.4	17.4	13.8
Ards 3	D'Dee Road	35.8	34.8	35.8	17.4	0.9	19.3	21.1	30.3	33.9	28.4	38.5	33.0
Ards 4	Talbot street	26.6	29.3	33.0	14.7	19.3	13.8	16.5	22.0	30.3	40.3	42.2	20.2
Ards 5	Court street	47.7	42.2	55.0	27.5	39.4	43.1	46.8	28.4	22.9	33.0	62.4	19.3
Ards 6	Town Hall	44.9	55.9	39.4	31.2	39.4	11.9	33.0	55.9	46.8	40.3	76.1	51.4

	2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ards 1	Ashgrove	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 2	Islandmore Ave	15.8	19.9	10.0	8.3	7.5	6.6	0.0	7.5	8.3	13.3	12.5	22.4
Ards 3	D'Dee Road	39.8	33.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 4	Talbot street	53.1	24.1	22.4	17.4	23.2	17.4	19.1	15.8	24.1	24.1	29.1	39.0
Ards 5	Court street	53.1	63.1	39.8	32.4	53.1	46.5	34.9	37.4	36.5	40.7	49.8	61.4
Ards 6	Town Hall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 7	Bangor Road	0.0	0.0	20.8	20.8	24.1	0.0	24.9	24.9	24.9	27.4	31.5	43.2
Ards 8	2A East Street	0.0	0.0	15.8	14.1	14.9	14.1	13.3	16.6	15.8	26.6	27.4	32.4
Ards 9	Church Street	0.0	0.0	28.2	20.8	19.9	23.2	21.6	24.9	28.2	29.9	30.7	46.5

	2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ards 1	Ashgrove	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 2	Islandmore Ave	17.0	19.4	13.8	10.5	7.3	7.3	5.7	0.0	14.6	12.2	12.2	16.2
Ards 3	D'Dee Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 4	Talbot street	24.3	38.9	26.7	24.3	17.0	18.6	14.6	16.2	34.0	21.1	21.9	28.4
Ards 5	Court street	40.5	64.0	50.2	42.1	42.1	46.2	34.0	22.7	43.7	30.8	28.4	42.9
Ards 6	Town Hall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 7	Bangor Road	25.9	42.9	34.0	36.5	25.1	26.7	31.6	25.9	35.6	30.0	26.7	37.3
Ards 8	2A East Street	25.1	30.8	23.5	20.3	18.6	15.4	12.2	16.2	23.5	20.3	19.4	27.5
Ards 9	Church Street	32.4	42.9	33.2	30.0	30.0	21.9	23.5	25.9	30.8	28.4	29.2	34.0

	2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ards 1	Ashgrove	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 2	Islandmore Ave	20.2	20.8	16.9	15.2	6.7	6.6	5.8	7.6	7.3	2.8	15.0	19.9
Ards 3	D'Dee Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 4	Talbot street	30.2	12.4	30.6	24.2	18.0	15.3	12.1	20.0	13.9	21.9	26.1	31.0
Ards 5	Court street	44.5	50.7	45.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 6	Town Hall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ards 7	Bangor Road	39.5	46.6	39.4	41.3	29.4	24.8	20.8	30.9	25.2	29.4	34.1	42.0
Ards 8	2A East Street	28.6	33.2	24.7	19.7	15.4	14.8	12.5	15.5	15.2	0.0	17.9	27.9
Ards 9	Church Street	41.2	44.1	39.9	0.0	16.8	21.2	18.6	22.8	22.9	30.2	32.4	37.1
Ards 10	South Street	0.0	0.0	0.0	41.5	22.6	9.9	20.2	23.6	20.1	27.3	34.0	44.6