2014 Air Quality Progress Report for Calderdale MBC

Reporting monitoring data for 2013

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

April 2014
<table>
<thead>
<tr>
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<th>Thomas Moorhouse</th>
</tr>
</thead>
<tbody>
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<td><strong>Department</strong></td>
<td>Environmental Health</td>
</tr>
</tbody>
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Executive Summary

This report presents monitoring data for 2013 and other assessments of potential pollutants and new sources within the Borough. It also sets out actions taken since the previous report in respect of declarations of and changes to air quality management areas (AQMAs).

The main pollutant of concern in Calderdale and the only one for which monitoring is reported here is nitrogen dioxide, essentially traffic-related.

A seventh AQMA has been declared at Hipperholme on the basis of measurements made over the past two years.

The monitoring results confirm that the nitrogen dioxide annual mean objective is still being breached in all seven AQMAs. However, the extent of the areas of exceedence in AQMAs No. 1 Salterhebble, No. 4 Luddendenfoot and No. 5 Stump Cross was found to be smaller than the boundaries as declared. The Council has now implemented changes by means of orders under Section 83(2) of the Environment Act 1995, redefining the boundaries of these AQMAs.

The diffusion tube data for 2013 do not support the declaration of AQMAs at Rastrick and Ainley Top, but monitoring is continuing in these areas. Major works are underway at the Ainley Top roundabout to improve capacity and flow, prior to the completion of a large residential development in Kirklees MBC Local Authority area. Long term roadworks on the M62 finished late in 2013.

The mean concentrations of nitrogen dioxide measured across the Borough in 2013 indicate a decrease from 2012 levels, but the longer term trend does not indicate a consistent decline in concentrations.
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<th>Description</th>
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</thead>
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<td>QA:QC for monitoring data</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>Plots of continuous monitoring data for 2013</td>
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</table>
1 Introduction

1.1 Description of Local Authority Area

The Borough of Calderdale is a mixed rural and urban Borough, with the South Pennine Moors to the West and large areas of open countryside surrounding the urban centres of Todmorden, Halifax, Elland and Brighouse. The tourist centre of Hebden Bridge is served by the A646, which takes all the through traffic from Halifax to Lancashire. The A58 and A646 major commuter routes run through the Borough, and the M62 skirts the southern edge.

Once a thriving manufacturing centre, Calderdale has seen a shift away from large scale manufacturing industries, although there is industrial activity centred on industrial estates such as Lowfields Business Park and Armitage Road, as well as smaller mixed sites across the Borough. Some of the industrial installations hold environmental permits. There are some Part A1 sites regulated by the Environment Agency, including chemical manufacturers and combined heat and power plant. The Council regulates one Part A2 foundry at Todmorden, and around 80 Part B installations including petrol filling stations, quarry processes and timber and combustion installations. There is also a Schedule 13A small waste incineration plant at the south-eastern edge of the Borough.

1.2 Purpose of Progress 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 (AQM) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

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 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 µg/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**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Air Quality Objective</th>
<th>Date to be achieved by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration</td>
<td>Measured as</td>
</tr>
<tr>
<td>Benzene</td>
<td>16.25 µg/m$^3$</td>
<td>Running annual mean</td>
</tr>
<tr>
<td></td>
<td>5.00 µg/m$^3$</td>
<td>Annual mean</td>
</tr>
<tr>
<td>1,3-Butadiene</td>
<td>2.25 µg/m$^3$</td>
<td>Running annual mean</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>10 mg/m$^3$</td>
<td>Running 8-hour mean</td>
</tr>
<tr>
<td>Lead</td>
<td>0.50 µg/m$^3$</td>
<td>Annual mean</td>
</tr>
<tr>
<td></td>
<td>0.25 µg/m$^3$</td>
<td>Annual mean</td>
</tr>
<tr>
<td>Nitrogen dioxide</td>
<td>200 µg/m$^3$</td>
<td>not to be exceeded more than 18 times a year</td>
</tr>
<tr>
<td></td>
<td>40 µg/m$^3$</td>
<td>Annual mean</td>
</tr>
<tr>
<td>Particulate Matter (PM$_{10}$) (gravimetric)</td>
<td>50 µg/m$^3$, not to be exceeded more than 35 times a year</td>
<td>24-hour mean</td>
</tr>
<tr>
<td></td>
<td>40 µg/m$^3$</td>
<td>Annual mean</td>
</tr>
<tr>
<td>Sulphur dioxide</td>
<td>350 µg/m$^3$, not to be exceeded more than 24 times a year</td>
<td>1-hour mean</td>
</tr>
<tr>
<td></td>
<td>125 µg/m$^3$, not to be exceeded more than 3 times a year</td>
<td>24-hour mean</td>
</tr>
<tr>
<td></td>
<td>266 µg/m$^3$, not to be exceeded more than 35 times a year</td>
<td>15-minute mean</td>
</tr>
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</table>
### Table 1.2: Summary of Previous Review and Assessments

<table>
<thead>
<tr>
<th>Report</th>
<th>Date</th>
<th>Outcome/ notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 to 3 reports [S1, S2, S3]</td>
<td>1999, 2000, 2001</td>
<td>Lead to detailed assessment 2003/4</td>
</tr>
<tr>
<td>Updating and Screening Assessment [USA03]</td>
<td>2003</td>
<td>Assessments of SO₂</td>
</tr>
<tr>
<td>Detailed Assessment [DA03]</td>
<td>2004</td>
<td>Identified need for further investigations at Salterhebble and Ainley Top</td>
</tr>
<tr>
<td>Updating and Screening Assessment [USA05]</td>
<td>2005</td>
<td>Identified need for detailed assessments. AQMAs declared at Hebden Bridge (No 3) and Sowerby Bridge (No 2)</td>
</tr>
<tr>
<td>Detailed Assessment [DA06]</td>
<td>2006</td>
<td>Declaration of AQMAs at Luddendenfoot (No 4), Stump Cross (No 5) and Brighouse (No 6)</td>
</tr>
<tr>
<td>Progress Report [PR07]</td>
<td>2007</td>
<td>Reported monitoring results</td>
</tr>
<tr>
<td>Updating and Screening Assessment [USA09]</td>
<td>2009</td>
<td>Identified need for detailed assessments for nitrogen dioxide and particulates.</td>
</tr>
<tr>
<td>Detailed assessment, biomass [DAB10]</td>
<td>2010</td>
<td>Assessed air quality impacts of biomass plant identified in [USA09]</td>
</tr>
<tr>
<td>Detailed assessment (West End)</td>
<td>2011</td>
<td>Confirmed exceedences in this area are unlikely</td>
</tr>
<tr>
<td>Progress Report</td>
<td>2011</td>
<td>Reported monitoring results and action plan</td>
</tr>
<tr>
<td>Detailed assessment (Bull Green)</td>
<td>Not required</td>
<td>No relevant receptors</td>
</tr>
<tr>
<td>Detailed assessment (Hipperholme)</td>
<td>Nov 2012</td>
<td>AQMA declared, came into force April 2014</td>
</tr>
<tr>
<td>Detailed assessment (Ainley Top)</td>
<td>Covered in this report</td>
<td>Data reported below</td>
</tr>
<tr>
<td>Detailed assessment (Clough Lane Rastrick)</td>
<td>Covered in this report</td>
<td>Data reported below</td>
</tr>
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</table>
1.4 Maps of Air Quality Management Areas

Figure 1.1 AQMA Boundaries (indicative only): No. 1 Salterhebble (as amended in 2014)
Figure 1.2  AQMA Boundaries (indicative only): No. 2 Sowerby Bridge

Figure 1.3  AQMA Boundaries (indicative only): No. 3 Hebden Bridge
Figure 1.4  AQMA Boundaries (indicative only): No. 4 Luddendenfoot (as amended in 2014)
Figure 1.5  AQMA Boundaries (indicative only): No. 5 Stump Cross (as amended in 2014)
Figure 1.6 AQMA Boundaries (indicative only): No. 6 Brighouse

Figure 1.7 AQMA Boundaries (indicative only) No. 7 Hipperholme
2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Figure 2.1: Automatic monitoring location, Hebden Bridge Romon 3

Figure 2.2: Automatic monitoring location, Sowerby Bridge Romon 4
Figures 2.1 to 2.4 show the locations of the continuous monitors, known as Romons, within the AQMAs shown in Figures 1.1, 1.2, 1.3 and 1.6. Table 2.1 gives details of each automatic monitoring site. Romon 1 is no longer operational and no data is reported for 2013.
Calderdale MBC

Table 2.1 Details of Automatic Monitoring Sites

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site Type</th>
<th>OS Grid Ref</th>
<th>Pollutants Monitored</th>
<th>AQMA</th>
<th>Distance to closest Relevant Exposure?</th>
<th>Distance to kerb</th>
<th>Worst-case Location?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romon 1</td>
<td></td>
<td></td>
<td>No longer operating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romon 2</td>
<td>Roadside</td>
<td>409488 423428</td>
<td>NO₂</td>
<td>1</td>
<td>10m</td>
<td>2m</td>
<td>y</td>
</tr>
<tr>
<td>Romon 3</td>
<td>Roadside</td>
<td>398990 427209</td>
<td>NO₂</td>
<td>2</td>
<td>10m</td>
<td>2m</td>
<td>y</td>
</tr>
<tr>
<td>Romon 4</td>
<td>Roadside</td>
<td>406073 423615</td>
<td>NO₂</td>
<td>3</td>
<td>10m</td>
<td>2m</td>
<td>y</td>
</tr>
</tbody>
</table>

2.1.2 Non-Automatic Monitoring Sites

Limits on the number of diffusion tubes have lead to the removal of certain tubes for use in other locations, particularly those where more information is required for detailed assessments. The locations of the diffusion tubes are show in Figures 2.5 to 2.9. Discontinued sites and active sites are shown. Table 2.2 shows the details for each site. The diffusion tube locations are also shown on the Council's website.

Table 2.2 Details of passive diffusion tube monitoring sites

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site type</th>
<th>X</th>
<th>Y</th>
<th>Pollutants monitored</th>
<th>AQMA</th>
<th>relevant exposure/y/n (distance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ10</td>
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<td>409789</td>
<td>423195</td>
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</tr>
<tr>
<td>AQ12</td>
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<td>409823</td>
<td>423206</td>
<td>NO₂</td>
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<tr>
<td>AQ15</td>
<td>roadside</td>
<td>409780</td>
<td>422803</td>
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</tr>
<tr>
<td>AQ16</td>
<td>roadside</td>
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<tr>
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<tr>
<td>AQ4</td>
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<td>409432</td>
<td>423543</td>
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<td>y (&lt; 1m)</td>
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<tr>
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<tr>
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<td>BG2</td>
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Figure 2.5 Diffusion tubes in Hebden Bridge

Figure 2.6 Diffusion tubes in Luddendenfoot

LAQM Progress Report 2013
Figure 2.7 Diffusion tubes in Sowerby Bridge
Figure 2.8 Diffusion tubes at Salterhebble, AQMA No. 1
Figure 2.9 Diffusion tubes at Brighouse, AQMA No. 6
Figure 2.10 Diffusion tubes Clough Lane, Rastrick

Figure 2.11 Diffusion tubes at Ainley Top

LAQM Progress Report 2013
2.2 Comparison of Monitoring Results with Air Quality Objectives

Table 2.3: continuous monitoring results 2011 to 2013

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<th>Site ID</th>
<th>Location</th>
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<th>Proportion of 2013 with valid data</th>
<th>No of hours &gt;200μg/m³</th>
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* not reported in 2012 due to flood damage
** figure averaged over periods of operation, but not considered reliable – reported for completeness

Further information about the analyser results is presented in Appendix 1.

Romon 1 was decommissioned when the maintenance contract expired in 2013, and the analyser was transferred to Romon 3 at Hebden Bridge. The analyser at Romon 3 had apparently suffered permanent damage during floods in 2012, and failed in the summer of 2013.

Romon 2 has operated normally except for an air conditioning failure in August and a shorter period of unexplained instability in span measurements. The latter fault was resolved by the monitoring contractor. There have been 15 hours during which the mean concentration of NO2 has exceeded 200μg/m³. The 99.8th percentile for the 15-minute data was 206μg/m³. As previously reported the analyser is sited on an incline on a busy through route and is in AQMA No.1.

The time variation of the concentration of nitrogen dioxide at Romon 2 is shown in Figure 2.12 below. The variation is displayed by weekday, month and hour using the openair “timeVariation” function [openair].
Figure 2.12 Time variation of nitrogen dioxide concentrations at Romon 2.

There is a clear morning peak in concentrations on weekdays, with Thursday’s peak being most pronounced. As expected Sunday’s concentrations are the lowest. Concentrations dropped off in December, which is an uncommon situation, apparently due to the windy weather.

The 2013 data from Romon 3 is to be treated with caution due to the fault mentioned above. Since the analyser has been replaced no further issues have come to light, and the Council has extended the maintenance contract to operate the unit until the end of 2014.

Romon 4 has operated reliably except for a brief period during which there were several unexplained power cuts. The mean for 2013 is essentially unchanged from that for 2012. This monitor is on a route that regularly experiences high volumes of traffic diverted from the M62, and it is perhaps not surprising that the annual mean objective is still being exceeded here.

The time variation is shown in Figure 2.13 below. It is worth noting some differences between the diurnal profiles at Romon 4 and those at Romon 2. Firstly, the morning and evening peaks at Romon 4 reach similar concentrations, whereas Romon 2 shows a significantly higher morning peak. This seems likely to be due to the prevailing westerly wind direction in relation to the location of the monitors and the road sources. Secondly, the peaks at Romon 4 are also evident at weekends, when the peaks at Romon 2 are much less pronounced.

The monthly averages show quite different behaviour, with no recovery in concentrations at Romon 4 in November. This again may be due to stronger winds and the relative locations of the analysers and the source roads. Romon 2 shows a
higher concentration of nitrogen dioxide throughout November. Possibly the fault at Romon 4 in November masked a similar picture there.

![Nitrogen Dioxide Concentration Chart]

Figure 2.13 Time variation of nitrogen dioxide concentrations at Romon 4.

One other feature of note is the set of dips in concentrations reported by Romon 4 in August and October. These dips are not apparent at Romon 2 (although the August data is incomplete) and are presumably due to local conditions. The August dip is also in contrast to the diffusion tube results, which show no such feature.

A trend chart providing NO₂ annual mean results over the past 5 years is shown in Figure A3 below. The plot was produced using data from 2009 to 2013 and the openair function ‘smoothTrend’. The trend is clearly seen to be for fairly constant levels. Figure A4 shows the trend using deseasonalised data (that is, seasonal variations have been removed). In both cases there is little evidence for a long term decline in concentrations.
Figure 2.14 Five year trend at Romon 2

Figure 2.15 Five year trend at Romon 2 using deseasonalised data
### Table 2.4 – diffusion tube results for 2013

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* Annualised data
Table 2.4 shows the monthly data and annual means for the diffusion tubes exposed in 2013. Results for tubes deployed for less than a full year have been annualised, except for those tubes which were discontinued during the year.

Tube CL-XE was used to investigate the extent of an area of suspected exceedence of the annual mean objective around Clough Lane and New Hey Road, and there is no relevant exposure at this site. This mean has not been annualised.

All the other exceedences of the annual mean objective, highlighted in pink, are at sites lying within existing AQMAs.

The highest annual mean measured in the Borough, found at CRH1, supports the indications from Romon 2 (which is located on the A58 to the north of CRH1) that there are episodes during which the one-hour mean exceeds 200$\mu$g$\text{m}^{-3}$, but fewer than the 18 per year stated in the objective. Fifteen events were recorded at Romon 2 during 2013. CRH1 is located on a row of terraced houses on a quite steep and busy incline, and opposite a steep embankment, but it is not feasible to deploy a continuous analyser to obtain samples representative of relevant exposure for the one-hour objective here. The Council currently considers that there is insufficient evidence for a breach of the one-hour objective to justify further investigation.

![Diffusion tube trends 2004 to 2013](image)

**Figure 2.14:** Diffusion tube data, trends at selected sites – raw data
The trends of bias-corrected data shown in Figure 2.15 are typical of most sites in the survey. The levels have increased in general, with peaks around 2006/7 and 2010, but it is not clear whether concentrations are decreasing or levelling off to their previous mean since 2010 (which is known to have been a high-concentration year nationally).

The raw data shows a smaller range of concentrations, but again an overall upward trend over the ten-year sample. The peaks in 2006/7 and 2010 are less obvious in the raw concentrations.
2.2.1 Particulate Matter (PM$_{10}$)
No monitoring for particulate matter has been undertaken.

2.2.2 Sulphur Dioxide (SO$_2$)
No monitoring for sulphur dioxide has been undertaken.

2.2.3 Benzene
No monitoring for benzene has been undertaken.

2.2.4 Other Pollutants Monitored
No other pollutants have been monitored.
2.2.5 Summary of Compliance with AQS Objectives

The Council has examined the results from monitoring in the Borough.

Concentrations within the AQMA still exceed the annual mean objective for nitrogen dioxide within all seven AQMAs and the revised AQMAs should remain.

Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.
3  New Local Developments

3.1  Road Traffic Sources

There are no new or newly identified road sources in the Borough. There have been long term roadworks at Dudwell Lane, which is near to Romon 2. This road was closed for a substantial period of 2013, and local traffic was diverted. Long term roadworks to improve the traffic management on the M62 came to an end in 2013 and the effects on local air quality are being monitored using diffusion tubes at Ainley Top.

3.2  Industrial Sources

3.2.1 Lower Brighouse ATC

A small waste incineration plant, as defined in the Environmental Permitting (England and Wales) Regulations 2010 (as amended), has been constructed in the Borough, and an environmental permit incorporating the relevant Industrial Emmissions Directive requirements has been granted.

The plant is on the southeastern edge of the Borough, and is within 1km of an existing Air Quality Management Area declared for the annual mean nitrogen dioxide objective by Kirklees MBC. An air quality impact assessment [YW13] was submitted as part of the environmental permit application, concluding that an appropriate chimney height would make any impact on the nitrogen dioxide concentrations in the AQMA negligible. Kirklees MBC was consulted on the application, and on a parallel planning application. The chimney height determination incorporated the findings of the dispersion modelling.

3.2.2 Sia Fibral Ltd

A manufacturing site in Greetland has commissioned an air quality impact assessment for a new gas fired boiler as part of a chimney height application. The topography around the site makes a standard calculation impossible. The assessment will take into account the nitrogen dioxide annual mean and hourly mean objectives using modelling.

3.2.3 Nathan Furniture Ltd

A furniture manufacturer operating a Part B timber and combustion installation in Cornholme, Todmorden, has been undertaking investigations in relation to smoke emissions from the chimney. This is in response to complaints about smoke grounding in the village. No particulate monitoring has been undertaken by the Council and emissions monitoring data from the site has proved to be unreliable due to circumstances unique to the site.

It is not known to what extent the stack emissions contribute to the local concentrations of fine particulate matter including PM$_{10}$, but the company has undertaken initial remedial works and has indicated that it will commission work to improve the monitoring, quality and dispersal of emissions.
The site was identified in the Stage Three report [STR01, Section 4.7] as potentially contributing to an exceedence of the PM$_{10}$, but this was on the basis of modelling using emissions data that was considered likely to overestimate the mean concentrations of PM$_{10}$, and no further investigation was undertaken at that time. The site has been occupied by several different companies since then and has not operated continuously. Currently the combustion plant is operated intermittently, which may contribute to the smoke issue, but no further investigation of the PM$_{10}$ concentrations is proposed.

### 3.3 Commercial and Domestic Sources

A planned biomass installation at Hipperholme High School, reported in the 2013 Progress Report, has not been pursued. The school does not intend to install the biomass units, currently favouring a gas fired boiler.

The Council has become aware of an increase in the number of complaints about smoke from domestic chimneys. It appears that wood burning appliances are being installed in smoke control areas, and that some of these may not be exempt appliances. The Council is currently considering an awareness-raising initiative to reduce the likelihood of residents installing unsuitable appliances.

### 3.4 New Developments with Fugitive or Uncontrolled Sources

The Council has not identified new developments with fugitive or uncontrolled sources of air pollution.

The 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.

The Council confirms that all the following have been considered:

- Road traffic sources
- Other transport sources
- Industrial sources
- Commercial and domestic sources
- New developments with fugitive or uncontrolled sources.
4 Local / Regional Air Quality Strategy

The Council is a participant in the development of the West Yorkshire Low Emissions Strategy (the WYLES Project). The following text is taken from a report submitted to members of the project group in 2012.

“The overall aim of the project is to develop an integrated, regional Low Emission Strategy to reduce road transport emissions across West Yorkshire. The specific aim of the project is to reduce road transport emissions of nitrogen dioxide through the accelerated transformation of the vehicle fleet. The project will also look to achieve reductions in exposure to PM$_{10}$/PM$_{2.5}$, noise; the production of greenhouse gases related to transport and compliment other policies and strategies relating to these issues.

“It aims to create a centre of low emission policy excellence, delivered through cost effective service planning brought about by the joint working and individual mandates adopted as part of each authority’s policy. The project will be partnered by each of the five West Yorkshire Local Authorities, the Integrated Transport Authority (METRO) and regional health representatives.

“The Low Emission Strategy aims to provide an overarching structure, influencing all municipal policy areas that have the potential to influence road transport emissions, and focus for co-ordinated activity. Key areas of activity are seen as:

1) Development of a Low Emission Vehicle (LEV) and Infrastructure strategy.
2) Transport Planning, including LTP3, Freight Strategy, Public Transport & Cycling Provision, Travel Planning and Emission Reduction Information.
3) Health information awareness (dependant on further funding).
4) Fleet Management & Procurement, including LEV & Infrastructure purchasing and public/private partnerships.
5) Waste Management, including potential to produce sustainable, low emission vehicle energy.
6) Air Quality Management, including LES promotion / increasing public awareness, development of best practice emission schemes in partnership with the private sector.
7) Climate Change & Sustainability, including road transport emission reduction.
8) Economic Development, including public private partnerships etc.
9) Land-Use Planning, including on and off-site mitigation, CIL and LEV Infrastructure Provision.”

At the present time a draft travel planning and development control document is under consideration by the five West Yorkshire Authorities.
5 Planning Applications

No major planning applications have been approved in Calderdale in 2013.
6 Air Quality Planning Policies

Previous policies have been based on national planning guidance. The replacement National Planning Policy Framework (NPPF) includes in paragraph 124 provision for the consideration of air quality matters when determining planning applications. The Council's existing policy (EP1) is an old policy, and its usefulness must be considered in the light of the requirements of NPPF paragraph 124.

EP1 Protection of Air Quality

Development which might cause air pollution (including that from modes of transport) will only be permitted if:

i. it would not harm the health and safety of users of the site and surrounding area; and  
ii. it would not harm the quality and enjoyment of the environment.

Where permission is granted, appropriate conditions and/or planning obligations will be attached to ensure that the air quality is maintained.

The Council is party to the development of air quality planning guidance to be available to developers and planners across West Yorkshire. A draft document has been produced by Wakefield City Council and training is being given to officers in the West Yorkshire Local authorities.

It is yet to be decided what part this guidance will play in the development of the Local Plan and related matters.
7 Local Transport Plans and Strategies

The Council is involved in the West Yorkshire Local Transport Plan, “My Journey”. Five West Yorkshire Local Authorities and other partners adopted the plan, also known as LTP3, in 2011. The plan is summarised, with links to the key documents, on the website http://www.calderdale.gov.uk/transport/transport-policy/west-yorkshire.html

The Council also has its own Corporate Travel Plan and Environmental Management System, both addressing the Council’s impact on climate change and the wider environment.
8 Climate Change Strategies

As previously reported Calderdale Council has developed in partnership with other local organisations a climate change strategy called Calderdale’s Energy Future.

8.1 Calderdale's Energy Future

Calderdale’s Energy Future sets out how Calderdale Council and its partners can transform Calderdale into a resilient low carbon economy, leading to a 40% reduction in carbon emissions by 2020 (from a 2005 baseline). It focuses attention on priority actions that will have the biggest carbon reduction impact while protecting Calderdale’s communities and landscapes. The Council aims to achieve these targets in a way that delivers the maximum social, economic and environmental benefits to the community.

The full strategy document and executive summary are available through the website www.calderdalesenergyfuture.org.uk.
9 Implementation of Action Plans

The Action Plan is dated 2009 and awaits revision.
10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

The monitoring undertaken in 2013 included continued monitoring of concentrations of nitrogen dioxide within existing AQMAs. It also included investigations of areas where exceedences of the annual mean objective had been indicated by previous data.

The data from existing AQMAs, as amended by Orders made in March 2014, shows that the air quality objective for the annual mean concentration of nitrogen dioxide is still being exceeded, and supports the revisions of the AQMA boundaries and the declaration of the new AQMA at Hipperholme.

Monitoring undertaken in areas outside AQMAs indicates that there is insufficient evidence to confirm previous suspected exceedences at Ainley Top and Clough Lane. In view of the unusual weather in December 2013, and the unknown impact of the roadworks on the M62 and the Ainley Top roundabout, the Council is continuing with reduced monitoring in these areas.

10.2 Other Conclusions

The Council is conscious that the Action Plan requires reviewing and updating.

10.3 Proposed Actions

The Council proposes to continue monitoring nitrogen dioxide concentrations using three continuous monitors, up to the end of 2014, when the position will be reviewed in the light of available budget and any further information from Defra. The Council also proposes to retain the existing diffusion tube network for the same period.
References


[DAHH12]  Detailed Assessment, Hipperholme 2012


[PG09]  Local Air Quality management Policy Guidance LAQM.PG(09), DEFRA 2009


[STR01]  Stage 3 Report, Calderdale MBC, 2001

[TG09]  Local Air Quality management Technical Guidance LAQM.TG(09), DEFRA 2009

[USA09]  Updating and Screening Assessment 2009, Calderdale MBC, 2009

[USA12]  Updating and Screening Assessment 2012, Calderdale MBC, 2012


[YW13]  Application for an Environmental Permit, Appendix E (Public Register)
Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors
The tubes used by Calderdale MBC are supplied and analysed by West Yorkshire Analytical Services at Morley, Leeds. The tubes are prepared using 50% TEA in acetone. The bias adjustment factor taken from the database version 03/14 is 0.79.

Factor from Local Co-location Studies (if available)
The local colocation study uses three tubes collocated with Romon 4 at Wharf Street, Sowerby Bridge. The bias correction factor derived from this study is 0.7.

Discussion of Choice of Factor to Use
The Council has adopted the regional factor of 0.79. This is because the regional survey represents a wider range of exposure conditions and hence may represent the range of bias across a range of concentrations, rather than the single exposure type at Romon 4. Results are presented using both factors, but the Council’s formal choice is 0.79.

PM Monitoring Adjustment
No PM monitoring has been carried out.

Short-term to Long-term Data adjustment
For the tubes deployed from June 2013 a short-to-long-term adjustment has been calculated, as set out in Table A.1

Table A.1 Short-Term to Long-Term Monitoring Data Adjustment

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QA/QC of Automatic Monitoring
The continuous monitors are serviced on a contract with Enviro Technology. The units are serviced every six months, with fortnightly visits by Council staff to check that the units have not been damaged or subject to equipment failure, and to check the span and zero readings.

QA/QC of Diffusion Tube Monitoring
West Yorkshire Analytical Services is subject to quality control testing as part of the WASP scheme [WS13]. There is evidence of laboratory systematic bias for the third quarter of 2013 (the latest for which figures are available at the time of writing).
Appendix 2: Plots of continuous monitoring data for 2013

These plots were generated using the “summaryPlot” function of openair. Periods of invalid data were marked prior to importing the data, and these periods are marked in red in the plots.

Figure A2.1: Romon 2 summary plot 2013
The histogram shows typical behaviour for this type of analysis, with the peak at a positive value (the modal range). Two periods of invalid data have been removed.
Figure A2.2: Romon 3 summary plot 2013
This plot is included for completeness, but the annual mean shown is not considered reliable due to the indications that the analyser was approaching failure due to earlier flood damage (in 2012). The histogram indicates that there were a lot of zeros in the filtered data. The data following the replacement of the analyser in October appears more stable.
Figure A2.3: Romon 4 summary plot for 2013
The period of power failures is indicated by the red bar. Other data appear reliable and consistent with other results.
Calendar plots for 2013
These plots were produced using the “calendarPlot” function of openair. They show the average nitrogen dioxide concentrations, coded by colour, on each day of 2013.

Figure A2.4: Romon 2 calendar plot
The missing data during August is evident, as is the period of higher concentrations during November.
Figure A2.5: Romon 3 calendar plot
The missing data for June and much of August and September is evident.
Figure A2.6: Romon 4 calendar plot
The plot indicates that there were two days of high average concentration in January (both Thursdays) and that concentrations over the summer months were generally lower. The plot for December shows that concentrations did not ‘recover’ as they have done in previous years.