

2016 Air Quality Annual Status Report (ASR)

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

September 2016

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Executive Summary: Air Quality in Our Area

Air Quality in Wealden

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

The District of Wealden is the largest district in East Sussex, and one of the most rural districts in England. Road traffic is the dominant source of air pollution in the area, the major routes being the A22, the A26, the A267, the A259, the A27 and the A272. The main pollutants of concern with respect to road traffic are nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}). Currently, there are no areas in Wealden where members of the public are exposed to levels of these pollutants in excess of the UK Air Quality Objectives.

Wealden District Council manages local air quality in close collaboration with East Sussex County Council, which provided part of the monitoring until 2014, and with the Sussex Air Quality Partnership (Sussex Air). The partnership provides assistance to members and information to the public via its web-site with recent air quality data, news updates, educational resources, links and other services such as airAlert.

In recent years, local monitoring has identified high levels of NO₂ at two roadside locations (A267 East of Cross in Hand, and West of Boship Roundabout), in areas where members of the public are not affected. NO₂ levels at these locations have been decreasing steadily since 2011, and in 2015, both locations achieved the UK Air Quality Objective for annual mean NO₂, with concentrations lower than 40 µg/m³.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

There is evidence that NO₂ concentrations are increasing in the town centres of Crowborough, Uckfield, Polegate and Hailsham; however, the levels in these areas remain below the objective level.

PM₁₀ and PM_{2.5} are not monitored in the Wealden District, but data from the neighbouring Eastbourne Borough suggest concentrations are consistently low (well below the UK annual mean objectives), with no significant increasing or decreasing trend.

As in other suburban and rural areas of East Sussex, ozone (O₃) is of considerable concern. Ozone is monitored in two locations in Wealden: Isfield and Lullington Heath. Ozone levels at Lullington Heath have increased since 2011, while at Isfield they have been stable.

Sulphur dioxide (SO₂) is also measured at the Lullington Heath station. However, in recent years there have been no exceedances of any of the three UK Air Quality Objectives (15-minute, 1-hour and 24-hour).

Two-thirds of the District is designated as the High Weald and Sussex Downs Areas of Outstanding Natural Beauty (AONB) with 34 other conservations areas. The impact of traffic-related air pollution on some of these areas has been assessed in past years. Current or future traffic flows predicted from development plans are not expected to put the Pevensey Levels Special Area of Conservation (SAC) at risk from excessive nitrogen deposition. The impact of traffic on the Ashdown Forest Special Protection Area (SPA) and SAC is currently being monitored, and the results will be examined in future years.

Actions to Improve Air Quality

Wealden District Council is helping the public to avoid the worst effects of O₃ pollution by monitoring O₃ levels at two locations, and informing the public of pollution events through the airAlert pollution warning service. This service is provided and maintained through the Sussex Air partnership. As of June 2016 the airAlert service has 805 registered subscribers, 60 of which from the Wealden District.

Wealden District Council together with Sussex Air supports the Energise Network, an integrated network of electric charging points for vehicles. Charging points are now located in the Wealden District at Selmeston Services (A27), Wealden District

Council offices in Hailsham, Herstmonceux Integrated Health Centre, Crowborough Station, and Forest Row Parish Council.

Wealden District Council seeks to mitigate the air quality impacts from development in the district, in particular in the areas of ecological importance. The Council screens development proposals for significant air quality impacts on conservation areas such as the Ashdown Forest, and is working to reduce the current traffic levels around the Forest by identifying Suitable Alternative Natural Green Spaces (SANGS), and by implementing, with partner authorities and organisations, a Strategic Access Management and Monitoring Strategy (SAMMS). There is also a guidance note for developers on reducing traffic-related impacts on the Ashdown Forest.

Wealden District Council also contributes to the Air Quality and Emissions Mitigation Guidance for Sussex. The guidance supports the principles of the Sussex Air Quality Partnership to improve air quality across Sussex and encourage emissions reductions to improve the environment and health of the population. Other actions being implemented to improve public health include promoting active modes of transportation like walking, cycling and using public transport, as well as car clubs and car sharing.

Local Priorities and Challenges

The main challenge for air quality management in Wealden is balancing the planned population growth in the District with conservation of the natural habitats that constitute most of the District's territory. Two-thirds of the District is designated as the High Weald and Sussex Downs Areas of Outstanding Natural Beauty (AONB), along with 34 other conservations areas. Wealden District Council will address this challenge by managing a sustainable level of development, and monitoring pollution impacts on conservation areas such as the Ashdown Forest.

Another challenge facing Wealden District Council is the presence of pollutants such as O₃ that originate outside the District, and sometimes outside the country.

Wealden District Council will continue to protect public health by providing real-time O₃ measurements on the Sussex Air website and alerting the general public in advance of pollution events through the airAlert service.

How to Get Involved

Everyone concerned about air quality in Wealden and the rest of Sussex can find real-time information on pollution levels on the Sussex Air website sussex-air.net, and sign up for advance warnings with the airAlert service at airalert.info. Warnings are provided by text or voice message, email, or using an Android or iOS app. The service is also available to schools and is a great way to get everyone engaged in thinking about the importance of air quality.

Large and small businesses in the vicinity of the Ashdown Forest and elsewhere can help reduce air pollution by adopting 'smarter choices' for traffic, as detailed in the council's Guidance Note⁴.

Drivers planning to replace their vehicles are encouraged to consider low and ultra-low emission vehicles, such as electric cars, plug-in hybrids and extended-range electric vehicles. The Energise Network provides members with access to more than 150 electric vehicle charging points across the South East. These include most local authority charge points in Kent, Surrey and Sussex, plus a number of Southern Rail fast chargers. For a map of the charging points and details on how to join, please visit energisenetwork.co.uk.

⁴ Wealden District Council (2013). Guidance note on reducing nitrogen deposition at the Ashdown Forest Special Area of Conservation and Special Protection Area. Available at: <http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=12452&sID=3484>

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1 Local Air Quality Management

This report provides an overview of air quality in Wealden District during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 an exceedance is considered likely the local authority must 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. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Wealden District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E. For reference, other relevant objectives from the UK Air Quality Strategy⁵ have been included in Table E.2.

⁵ Defra and Devolved Administrations (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volume 1)

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Wealden District currently does not have any AQMAs, because previous studies have not indicated any likelihood of the UK air quality objectives being exceeded. Therefore, no formal Air Quality Action Plan has been set up and implemented for the District.

2.2 Progress and Impact of Measures to address Air Quality in Wealden District

Wealden District Council (WDC) is a member of the Sussex Air Quality Partnership (Sussex Air), which produced an air quality strategic plan 2010 to 2015⁶. Wealden District Council contributed to the development of this strategy, which aims to provide a consistent approach to air quality across a number of district councils.

This plan has 5 key objectives:

1. Provide advice and support and improve the expertise and knowledge base
2. Project development and implementation
3. Partnership working
4. Develop cross cutting work on health improvement, climate change, environment and transport
5. Communicate air quality issues and initiatives in Sussex.

Wealden District Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality and improving public awareness of air quality issues, in close collaboration with the Sussex Air Quality Partnership.

⁶ Sussex Air Quality Partnership Air Quality Strategic Plan 2010 http://www.sussex-air.net/Reports/SAQP_Vision_Strategy_2015.pdf

Key completed measures are:

1. Website

Wealden District Council supports the Sussex Air Quality website (<http://www.sussex-air.net>), which provides access to air quality statistics and relevant local information and improves public awareness of air quality.

2. airAlert

Wealden District Council supports the airAlert air pollution warning service, offered by the Sussex Air Quality Partnership to vulnerable people, schools, health professionals and general public in Sussex. The airAlert service provides warnings based on ozone levels monitored inside the Wealden District both at Isfield and Lullington Heath. As of June 2016 the service has 805 registered subscribers, 60 of which from the Wealden District.

3. Local ozone monitoring

High ozone levels can cause difficult breathing in vulnerable people with existing breathing or heart conditions. Wealden District Council monitors ozone levels at the Isfield rural monitoring station. Data from this station is available on the Sussex-Air website and feeds the airAlert service.

4. Guidance.

Wealden District Council contributed to the Air Quality and Emissions Mitigation Guidance for Sussex, first published in 2013 and updated in 2014. The guidance is helping to mitigate potential air quality impacts from developments across Sussex. It is also contributing to public health by promoting active modes of transportation like walking, cycling and using public transport, as well as car clubs and car sharing.

5. Energise Network.

The Sussex Air Partnership manages the Energise Network, an integrated network of electric charging points for vehicles with regional coverage. Electric car charging points are now located in the Wealden District at Selmeston Services (A27), Wealden District Council offices in Hailsham, Herstmonceux Integrated Health Centre, Crowborough Station, and Forest Row Parish Council.

Following the adoption of the Core Strategy Local Plan⁷ in 2013, Wealden District Council has been assessing the air quality impacts of new traffic and development on protected natural habitats in the District, in particular the Pevensey Levels (Special Area of Conservation (SAC) and Ramsar site) and the Ashdown Forest (SAC and Special Protection Area (SPA)).

Key completed measures regarding protected habitats are:

1. Pevensey Levels Assessment

Wealden District Council commissioned in 2009 a study⁸ to assess the predicted air quality impact on the Pevensey Levels of increases in traffic on the A259 associated with planned population growth up to 2026. The conclusion was that an increase in nitrogen deposition and NOx concentrations is likely, but these will still be below the Critical Levels set by the Habitats Directive⁹, therefore there is unlikely to be a significant effect on the Ramsar site.

2. Ashdown Forest impact mitigation

Wealden District Council currently screens all new development proposals for significant effects on levels of nitrogen depositions on the Ashdown Forest, focusing on traffic emissions, and where appropriate, requires mitigation measures to be implemented¹⁰. The main mitigation strategy proposed by Wealden District Council is the identification of Suitable Alternative Natural Green Spaces (SANGS), and the implementation of a Strategic Access Management and Monitoring Strategy (SAMMS). Wealden District Council published in 2013 a guideline document¹¹ to

⁷ Wealden District (Incorporating Part of the South Downs National Park) (2013). Core Strategy Local Plan. Available at: <http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=14756&SID=2829>.

⁸ Rother District Council, Hastings Borough Council, Wealden District Council and Eastbourne Borough Council (2009). Appropriate Assessment and Air Quality Local to the Pevensey Levels Ramsar Site. Available at: <http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=14305&SID=5509>

⁹ EC Habitats Directive 1992, interpreted into British law by the Conservation (Natural Habitats &c) Regulations 1994 (as amended in 2007).

¹⁰ Wealden District Council website. Ashdown Forest Special Protection Area, Special Area of Protection and Site of Special Scientific Interest. http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Development_Management/Agents_and_Parish_Council_Information/Planning_Agents_Ashdown_Forest.aspx. Retrieved July 2016:

¹¹ Wealden District Council (2013). Guidelines for the creation of Suitable Alternative Natural Green Space (SANGS). Available at: <http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=13843&SID=3484>

help identify SANGS sites, and a guidance note¹² for small scale developments on reducing traffic impacts on the Ashdown Forest.

3. Ashdown Forest monitoring

Wealden District Council is investigating the impact of nitrogen deposition upon the Ashdown Forest SAC, so that its effects on development can be more fully understood and mitigated as appropriate. The Air Quality Report¹³ completed for Wealden District Council in 2013 proposed a methodology for air quality and ecological monitoring. On 30th April 2014, Wealden District Council awarded a contract to Ecus Ltd, supported by Air Quality Consultants Ltd, to implement a monitoring, modelling and assessment programme which will run for a number of years¹⁴. Monitoring began in the summer of 2014, and the Year 1 interim report has been published in February 2016¹⁵.

¹² Wealden District Council (2013). Guidance note on reducing nitrogen deposition at the Ashdown Forest Special Area of Conservation and Special Protection Area. Available at:

<http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=12452&SID=3484>

¹³ Wealden District Council (2013). Ashdown Forest SAC. Method for Air Quality Monitoring and Assessment of Nitrogen Deposition. Available at: <http://www.wealden.gov.uk/nmsruntime/saveasdialog.aspx?IID=13088&SID=3484>

¹⁴ Wealden District Council website, Ashdown Forest Monitoring FAQs:

http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/Evidence_Base/PPolicy_Ashdown_Forest_Monitoring_FAQs.aspx Retrieved July 2016.

¹⁵ Air Quality Consultants (2016). Interim Report Year 1: Ashdown Forest Air Quality Monitoring and Modelling.

http://www.wealden.gov.uk/Wealden/Residents/Planning_and_Building_Control/Planning_Policy/CoreStrategy/CoreStrategy_Library/Planning_Evidence_Base_Habitat_Regulations_Assessment.aspx

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Air Quality and Emissions Mitigation Guidance for Sussex	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Sussex Air Quality Partnership		2014		N/A		Completed	
2	Air Quality Strategic Plan 2010	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	Sussex Air Quality Partnership		2010 - 2015		N/A		Ongoing	
3	Sussex Air website	Public Information	Via the Internet	Sussex Air Quality Partnership				N/A		Ongoing	
4	airAlert	Public Information	Via other mechanisms	Sussex Air Quality Partnership			805 registered subscribers, 60 from Wealden District	N/A		Ongoing	
5	Energise Network	Promoting Low Emission Transport	Procuring alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Sussex Air Quality Partnership			5 charging points installed in Wealden District	N/A		Ongoing	
6	SANGS guidelines	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Wealden District Council		2013		N/A		Completed	

Wealden District Council

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Nitrogen Reduction Guidance	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Wealden District Council		2013		N/A		Completed	
8	Ashdown Forest Monitoring	N/A	N/A	Wealden District Council	2013	2014 - 2017		N/A	Monitoring started in 2014	2017	

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5 µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Wealden District Council is taking the following measures to address PM_{2.5}:

- Supporting the Energise Network of electric vehicle charging points, together with the Sussex Air Quality Partnership;
- Requiring the assessment of PM_{2.5} as part of Air Quality Assessments for planning applications.

Further measures will be considered in future years.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

This section sets out what monitoring has taken place and how it compares with objectives.

3.1.1 Automatic Monitoring Sites

Automatic (continuous) monitoring within the Wealden District was undertaken at two sites during 2015: Isfield and Lullington Heath, for the pollutants NO₂, SO₂ and O₃. Particulate matter (PM₁₀ and PM_{2.5}) was not monitored in the district, so this report includes the results from two sites in the neighbouring Eastbourne District: Devonshire Park and Holly Place. Table A.1 in Appendix A shows the details of the sites.

Wealden - Lullington Heath and Eastbourne - Holly Place are part of the Automatic Urban and Rural Network (AURN), managed by the Environment Agency. National monitoring results are available at <https://uk-air.defra.gov.uk/>.

Wealden - Isfield and Eastbourne - Devonshire Park are part of the Sussex Air Quality Monitoring Network (SAQMN), managed on behalf of Sussex Air by King's College London Environmental Research Group (KCL-ERG). Regional monitoring results are available at www.sussex-air.net.

Data capture for 2015 was the following:

- Wealden - Isfield: 100% for O₃
- Wealden - Lullington Heath: 95% for SO₂, 99% for O₃, 67% for NO₂
- Eastbourne - Devonshire Park: 0% for NO₂, 0% for PM₁₀
- Eastbourne - Holly Place: 99% for NO₂, 77% for PM₁₀ and 67% for PM_{2.5}

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

Wealden District Council undertook non-automatic (passive) monitoring of NO₂ at 8 sites during 2015. Table A.2 in Appendix A shows the details of the sites.

The towns of Crowborough and Uckfield each contain one roadside site (W2, W4) and one urban background site (W1, W3), whilst two roadside sites are operated in Polegate (W5) and Hailsham (W6, installed in 2012). The original diffusion tube network has been operational since 2001. Two further roadside sites (W7, W8) – previously operated by East Sussex County Council (ESCC) – are currently maintained by Wealden District Council.

Data capture for 2015 was generally good; however, July and August data were missing for all diffusion tube sites. One site, A267 East of Cross in Hand Pub (W7) required “annualisation”, as four months of data were missing.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC), bias adjustment and “annualisation” calculations for the diffusion tubes are included in Appendix C. The full 2015 dataset of monthly mean values for diffusion tubes is provided in Appendix B.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for “annualisation” and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40 µg/m³. The results indicate that the annual mean NO₂ concentrations at the Wealden - Lullington Heath and Eastbourne - Holly Place automatic monitoring sites were all well within the UK air quality objective (40 µg/m³) in all years between 2011 and 2015. No valid data was available from the Eastbourne - Devonshire Park station for the 2015 period; however, annual mean NO₂ concentrations between 2011 and 2014, inclusive, were well below the annual mean objective.

None of the eight diffusion tube sites exceeded the annual mean objective for NO₂ in 2015. The highest annual mean NO₂ concentration was 38.4 µg/m³ and is the first time since at least 2011 that the objective has been achieved at this location.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the 1-hour air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. None of the automatic monitoring sites exceeded the 200 µg/m³ standard on any occasion in 2015, or in any year since 2011. The results indicate that the 1-hour NO₂ air quality objective is unlikely to be exceeded at any location in the district. Diffusion tubes do not provide hourly measurements of NO₂; however, the Defra Technical Guidance states that where annual mean NO₂ concentrations measured by diffusion tubes exceed 60 µg/m³ there is a likelihood that the 1-hour objective may be exceeded. All of the annual mean NO₂ concentrations at diffusion tube monitoring locations between 2011 and 2015, inclusive, were well below 60 µg/m³ and so the 1-hour objective is very unlikely to have been exceeded.

Figure 1 shows the trend in NO₂ concentrations monitored at the Wealden - Lullington Heath and Eastbourne - Devonshire Park automatic monitoring stations. The results indicate there is a gradual downward trend in NO₂ concentrations over the time period shown, with little variation from year to year. Concentrations have also been well below the Air Quality Objective of 40 µg/m³ in all years.

Figure 1: Trends in Annual Mean NO₂ Concentrations measured at Automatic Monitoring Sites

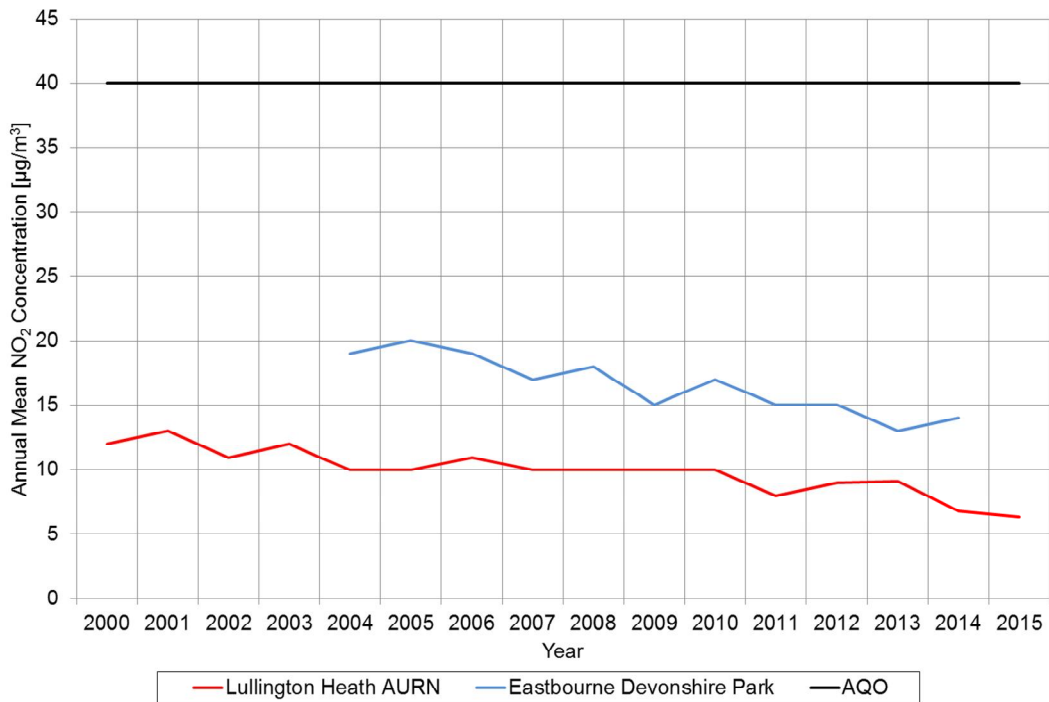


Figure 2 shows trends in annual mean NO₂ concentrations measured at the six roadside diffusion tube sites. The W7 and W8 sites (ex ESCC) historically recorded the highest values, often exceeding the objective, but there is a trend for gradually decreasing concentrations. In 2015 the W7 site achieved the objective for the first time since 2008, while the W8 site has consistently shown concentrations below the objective since 2012. By contrast, annual mean NO₂ concentrations appear to be increasing at the other roadside sites (W2, W4, W5 and W6), even though they remain well within the air quality objective.

Figure 2: Trends in Annual Mean NO₂ Concentrations measured at Roadside Diffusion Tube Monitoring Sites

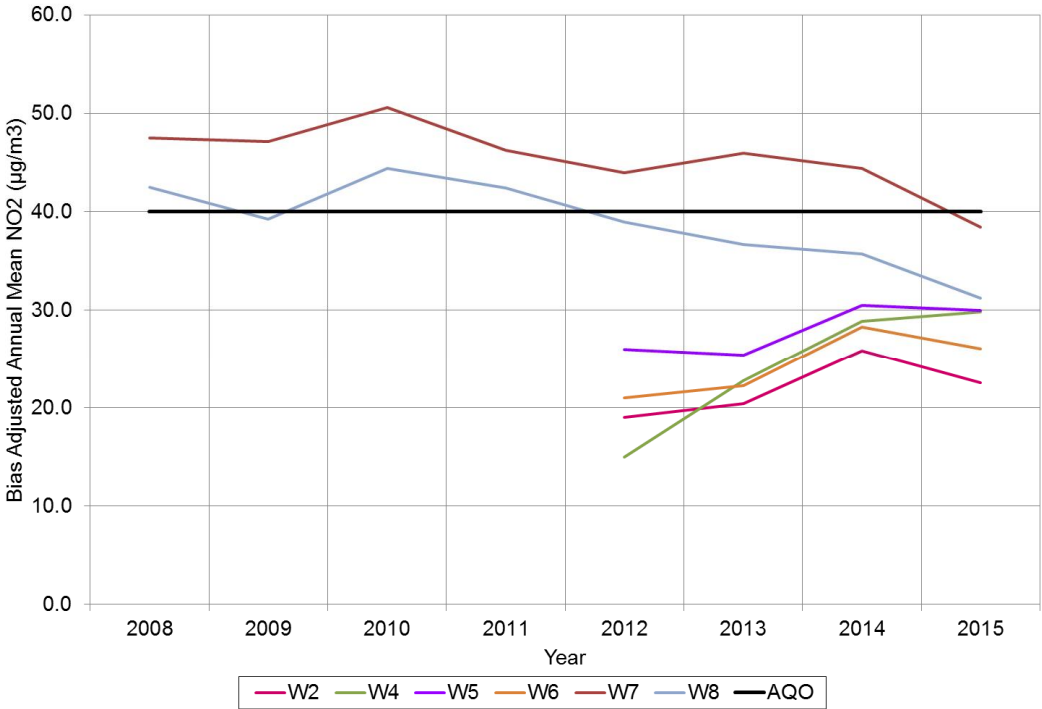
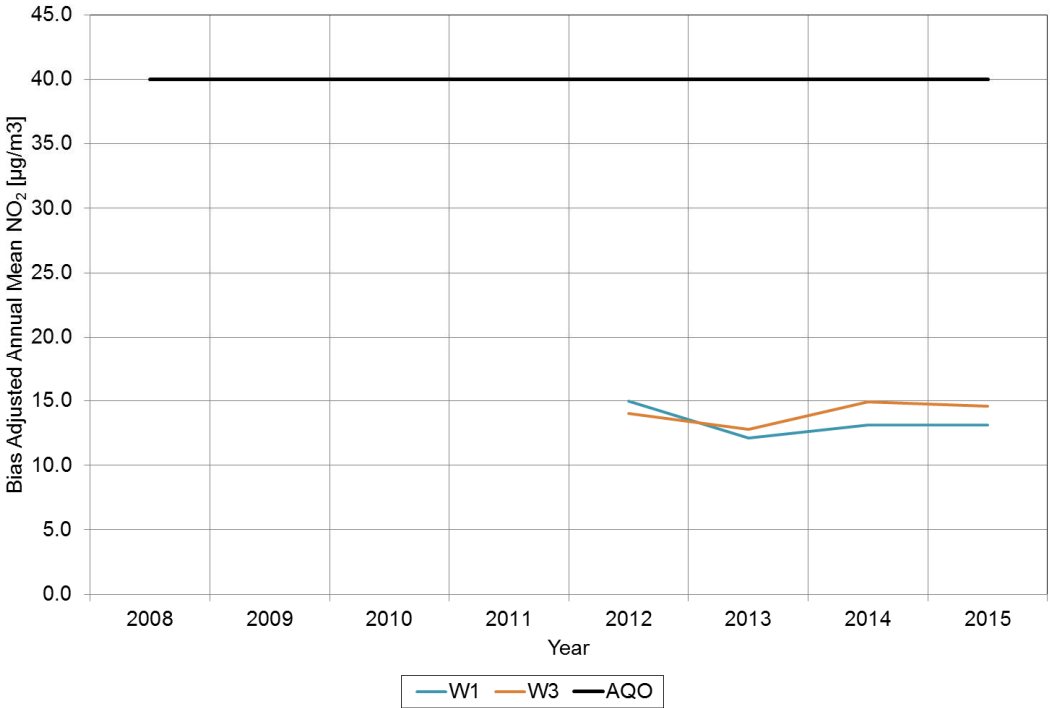


Figure 3 shows the trend in NO₂ concentrations at background diffusion tube sites (W1 and W3), which show very little overall trend compared to the roadside sites.

Figure 3: Trends in Annual Mean NO₂ Concentrations measured at Background Diffusion Tube Monitoring Sites



3.2.2 Particulate Matter (PM₁₀)

There has been no PM₁₀ monitoring undertaken within the Council’s area. Concentrations monitored at two urban background sites in Eastbourne (Devonshire Park and Holly Place) are therefore provided for indicative purposes.

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 40 µg/m³. The results indicate that annual mean PM₁₀ concentrations were well below the UK air quality objective between 2011 and 2015 at both stations.

Figure 4 shows the trend in annual mean PM₁₀ concentrations. A slight decreasing trend is apparent from concentrations recorded at Holly Place in the past five years, but with considerable year on year variability. However, the longer-term data (2001 to 2014) at Devonshire Park is less conclusive. Concentrations have been consistently well below the annual mean Air Quality Objective.

Figure 4: Trends in Annual Mean Particulate Matter (PM₁₀) Concentrations measured at Automatic Monitoring Sites

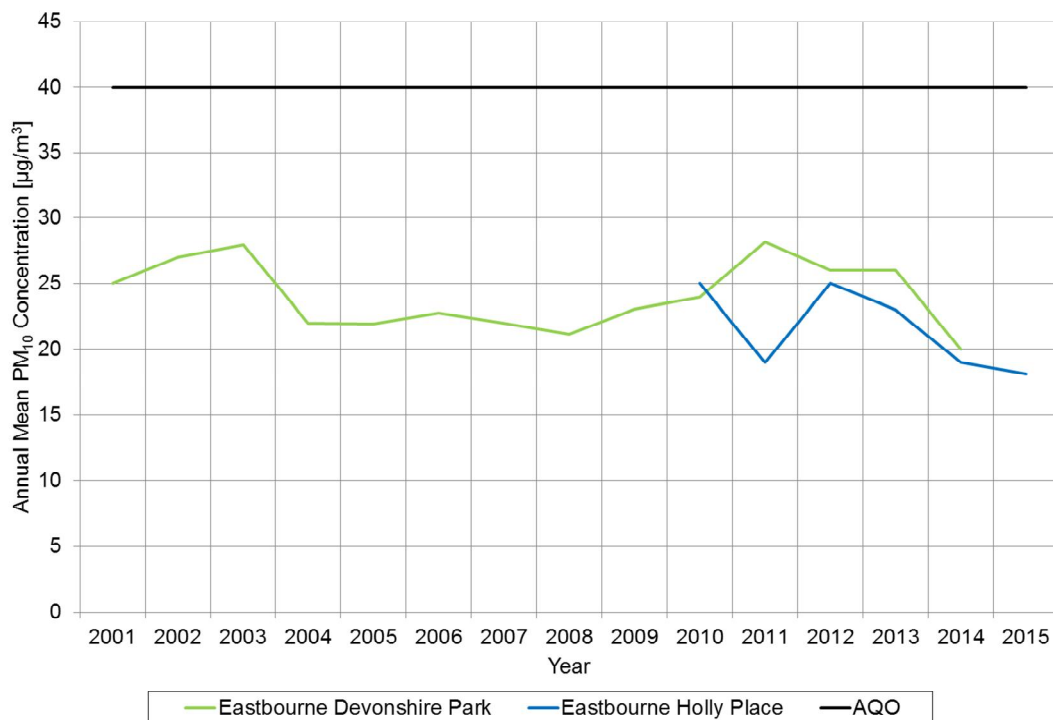


Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50 µg/m³, not to be exceeded more than 35 times per year. These results show that both Eastbourne sites achieved the daily PM₁₀ objective every year from 2011 to 2015.

Based on the information gathered in Eastbourne, it is anticipated that PM₁₀ levels in Wealden are likely to achieve the UK air quality objectives for annual and daily mean concentrations.

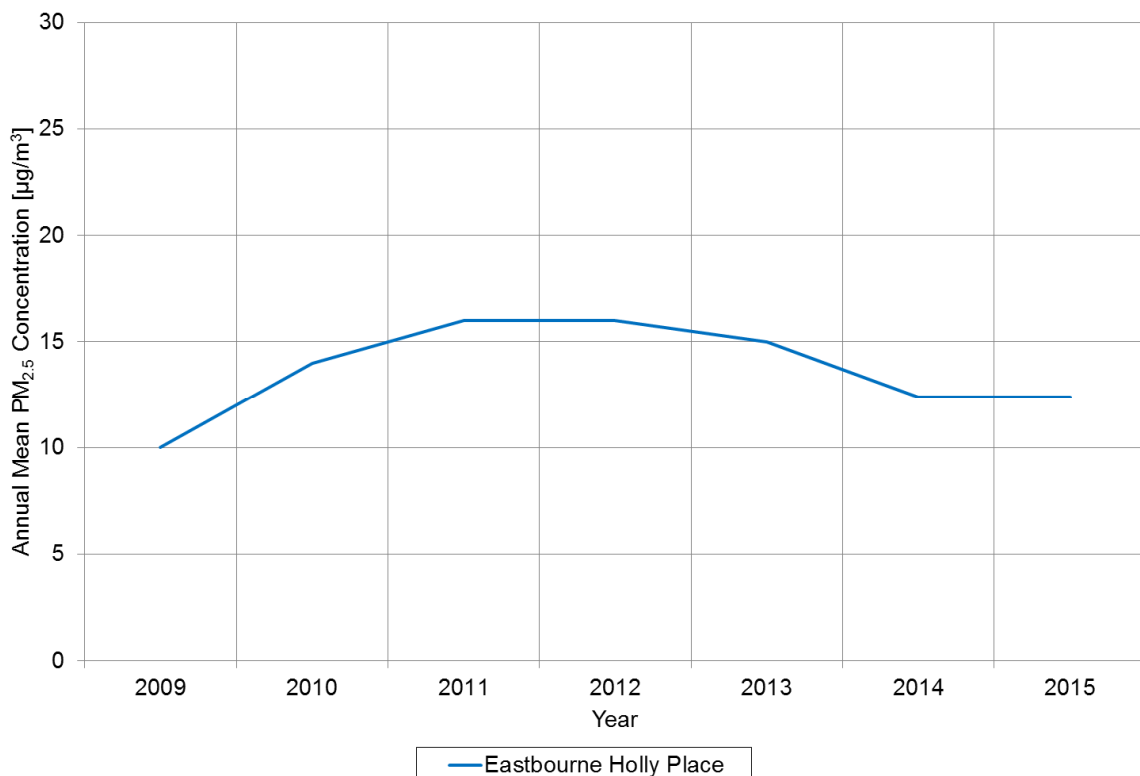
3.2.3 Particulate Matter (PM_{2.5})

There is no PM_{2.5} monitoring undertaken within Wealden District. Concentrations monitored at the Holly Place urban background site in Eastbourne are therefore provided for indicative purposes.

Table A.7 in Appendix A presents the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past 5 years. Between 2011 and 2015, the measured levels have been between 12 µg/m³ and 16 µg/m³.

Figure 5 shows the trend in annual mean PM_{2.5} concentrations. No clear trend is evident in the results between 2009 and 2015.

Figure 5: Trends in Annual Mean Particulate Matter (PM_{2.5}) Concentrations measured at Automatic Monitoring Sites



3.2.4 Sulphur Dioxide (SO₂)

Table A.8 in Appendix A compares the ratified continuous monitored SO₂ concentrations at the Lullington Heath rural site for year 2015 with the air quality objectives for SO₂. There have been no exceedances in 2015 of any of the three UK Air Quality Objectives for SO₂ (15-minute, 1-hour and 24-hour). Further details about the SO₂ objectives are reported in Appendix E.

3.2.5 Ozone (O₃)

Table A.9 in Appendix A presents the ratified continuous monitored annual mean O₃ concentrations for the past 5 years at the Isfield and Lullington Heath rural sites. Between 2011 and 2015, the annual mean concentrations monitored at Isfield have been between 24 µg/m³ and 27 µg/m³, and at Lullington Heath between 49 µg/m³ and 57 µg/m³. There is no annual mean objective or target value for annual mean O₃ concentration.

Figure 6 shows the trend in annual mean O₃ concentrations at the two monitoring stations. No clear trend is evident in the results at Isfield between 2011 and 2015, while a slight increase has been observed at Lullington Heath.

Figure 6: Trends in Annual Mean O₃ Concentrations measured at Automatic Monitoring Sites

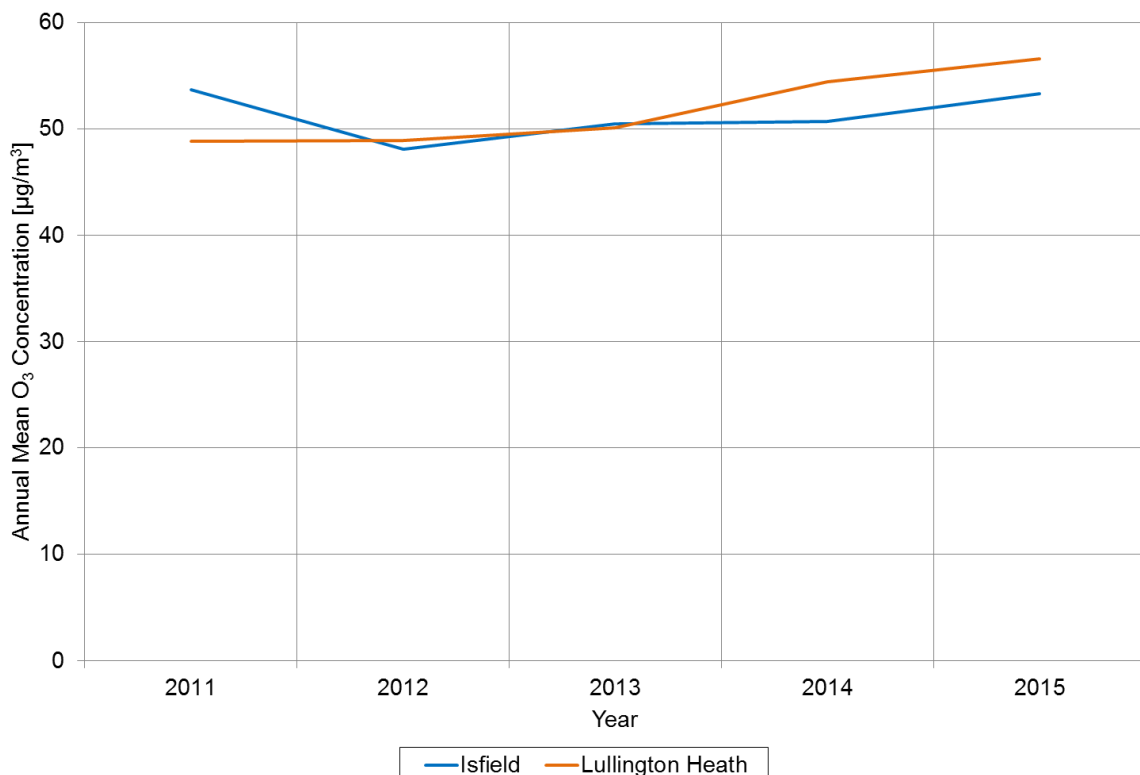


Table A.10 in Appendix A compares the ratified continuous monitored O₃ running 8-hour mean concentrations for the past 5 years with the UK Air Quality Objective of 100 µg/m³, not to be exceeded on more than 10 days per year. The monitoring results show that both the Lullington Heath and Isfield sites exceeded the O₃ objective every year from 2011 to 2015, except for 2014. The maximum number of days above the target values was 44 days in 2011 at Isfield.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
Wealden										
LL1	Lullington Heath AURN	Rural	553855	101740	NO ₂ SO ₂ O ₃	N	Chemiluminescence UV Fluorescence UV Absorption	> 1000	1000	3.0
AR2	Wealden - Isfield	Rural	544890	117380	O ₃	N	UV Absorption	60	20	2.0
Eastbourne										
EB1	Devonshire Park	Urban Background	561180	098360	NO ₂ PM ₁₀ O ₃	N	Chemiluminescence FDMS UV Absorption	40	10	1.5
EB3	Holly Place AURN	Urban Background	560085	103118	NO ₂ PM ₁₀ PM _{2.5}	N	Chemiluminescence TEOM FDMS TEOM FDMS	10	10	4.0

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
W1	Crowborough Background	Urban Background	552591	130667	NO ₂	N	5 – 10	2	N	2.5
W2	Crowborough Town Centre	Roadside	551626	131090	NO ₂	N	5 – 10	2	N	2.5
W3	Uckfield Background	Urban Background	547828	121954	NO ₂	N	10 – 20	1	N	2.5
W4	Uckfield Town Centre	Roadside	547250	120977	NO ₂	N	5 – 10	2	N	2.5
W5	Eastbourne Road, Polegate	Roadside	558079	104481	NO ₂	N	13	1	N	2
W6	London Road, Hailsham	Roadside	558845	109783	NO ₂	N	0.5	1	N	2.5
W7	A267 E of Cross in Hand	Roadside	556813	121665	NO ₂	N	19	0.5	N	1.8
W8	A22 W of Boship roundabout	Roadside	556933	111165	NO ₂	N	8	2	N	2

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
LL1	Rural	Automatic	67	67	8	9	9.1	6.8	6.4
EB1	Urban Background	Automatic	0	0	15	15	13	14	-
EB3	Urban Background	Automatic	99	99	12	13	17	12	10.6
W1	Urban Background	Diffusion Tube	83	83	-	15	12.1	13.1	13.1
W2	Roadside	Diffusion Tube	75	75	-	19	20.4	25.9	22.5
W3	Urban Background	Diffusion Tube	83	83	-	14	12.8	14.9	14.6
W4	Roadside	Diffusion Tube	75	75	-	15	22.8	28.9	29.9
W5	Roadside	Diffusion Tube	83	83	-	26	25.4	30.5	30.0
W6	Roadside	Diffusion Tube	83	83	-	21	22.3	28.3	26.1
W7	Roadside	Diffusion Tube	67	67	46.3	44.0	45.9	44.4	38.4
W8	Roadside	Diffusion Tube	75	75	42.4	39.0	36.7	35.7	31.3

Notes: Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2011	2012	2013	2014	2015
LL1	Rural	Automatic	67	67	0	0	0	0 (43)	0 (42.7)
EB1	Urban Background	Automatic	0	0	0 (70.2)	0	0	0	-
EB3	Urban Background	Automatic	99	99	0 (68.3)	0	0	0 (69.3)	0

Notes: Exceedances of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2011	2012	2013	2014	2015
EB1	Urban Background	0	0	28	26	26	20	-
EB3	Urban Background	77	77	19	25	23	19	18.1

Notes: Exceedances of the PM₁₀ annual mean objective of 40µg/m³ are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per Technical Guidance LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
				2011	2012	2013	2014	2015
EB1	Urban Background	0	0	20	12	12 (42)	6 (32)	-
EB3	Urban Background	77	77	- (28)	7	11 (41)	7 (29)	1 (28.5)

Notes: Exceedances of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 35 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Table A.7 – PM_{2.5} Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2011	2012	2013	2014	2015
EB3	Urban Background	67	67	16	16	15	12.4	12.4

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per Technical Guidance LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.8 – SO₂ Monitoring Results

Site ID	Site Type	Valid Data Capture for monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	Number of Exceedances (percentile in bracket) ⁽³⁾		
				15-minute Objective (266 µg/m ³)	1-hour Objective (350 µg/m ³)	24-hour Objective (125 µg/m ³)
LL1	Rural	95	95	0	0	0

Notes: Exceedances of the SO₂ objectives are shown in **bold** (15-min mean = 35 allowed a year, 1-hour mean = 24 allowed a year, 24-hour mean = 3 allowed a year)

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%)

(3) If the period of valid data is less than 85%, the relevant percentiles are provided in brackets.

Table A.9 – Annual Mean O₃ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	O ₃ Annual Mean Concentration (µg/m ³) ⁽³⁾				
				2011	2012	2013	2014	2015
AR2	Rural	100	100	53.7	48.1	50.5	50.7	53.3
LL1	Rural	99	99	48.8	48.9	50.1	54.4	56.6

Notes: (1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) All means have been “annualised” as per Technical Guidance LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.10 – Running 8-Hour Mean O₃ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	Days With O ₃ Running 8-Hour Means > 120µg/m ³				
				2011	2012	2013	2014	2015
AR2	Rural	100	100	44	16	31	10	15
LL1	Rural	99	99	17	12	12	6	12

Notes: Exceedances of the O₃ running 8-hour mean objective (100 µg/m³ not to be exceeded more than 10 days/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2015

Site ID	NO ₂ Mean Concentrations (µg/m ³)													Annual Mean	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted ⁽¹⁾	
	W1	21.2	18.9	19.7	12.3	10.3	9.2	9.0	-	-	16.7	14.8			12.1
W2	33.8	35.1	31.8	26.7	23.3	-	21.8	-	-	32.4	23.9	20.1	24.8	22.5	
W3	21.4	22.0	20.7	13.0	11.9	12.2	12.5	-	-	19.0	14.1	13.5	16.0	14.6	
W4	14.8	47.4	44.1	28.7	38.7	36.6	38.8	-	-	40.2	40.7	-	32.8	29.9	
W5	36.9	43.0	38.4	35.6	32.5	34.1	21.8	-	-	39.2	26.3	21.5	32.9	30.0	
W6	32.6	34.7	31.3	30.6	23.5	25.8	30.2	-	-	31.9	25.8	20.6	28.7	26.1	
W7	56.1	46.6	45.1	42.6	39.4	53.9	-	-	-	47.2	46.5	-	42.2	38.4	
W8	44.4	49.8	31.8	42.3	36.4	-	35.7	-	-	43.8	37.8	23.4	34.4	31.3	

(1) See Appendix C for details on bias adjustment

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Diffusion Tube Bias Adjustment Factors

Bias adjustment is effectively a calculated factor which shows whether diffusion tubes are over or under-reading ambient concentrations, thereby allowing a correction to be made.

Wealden District Council does not carry out a co-location study with diffusion tubes and an automatic continuous analyser, and so it is necessary to use the national database of bias adjustment factors (version 03/16) to select the appropriate bias adjustment factor for diffusion tubes prepared by Gradko. Figure 7 shows the appropriate national bias adjustment factor used in this report.

Figure 7: National Diffusion Tube Bias Adjustment Factor for Wealden District Council (Gradko).

National Diffusion Tube Bias Adjustment Factor Spreadsheet							Spreadsheet Version Number: 03/16			
Follow the steps below in the correct order to show the results of relevant co-location studies							This spreadsheet will be updated at the end of June 2016			
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods							LAQM Helpdesk Website			
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet										
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.										
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.							Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.			
Step 1:		Step 2:		Step 3:		Step 4:				
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor shown in blue at the foot of the final column.				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote 1. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953				
Analysed By ¹	Method ²	Year ³	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ⁴	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2015	R	Ards and North Down Borough Council	12	38	26	48.6%	G	0.67
Gradko	20% TEA in water	2015	UC	Breckland Council	12	30	29	1.5%	G	0.99
Gradko	20% TEA in water	2015	R	Cheltenham Borough Council	12	35	35	2.7%	G	0.97
Gradko	20% TEA in water	2015	R	Lisburn & Castlereagh City Council	10	36	29	24.8%	G	0.80
Gradko	20% TEA in water	2015	R	Luton Borough Council	12	46	44	6.0%	G	0.94
Gradko	20% TEA in water	2015	R	Monmouthshire County Council	12	41	37	11.0%	G	0.90
Gradko	20% TEA in water	2015	B	Pembrokeshire Council	10	4	3	36.7%	G	0.73
Gradko	20% TEA in water	2015	R	City of Lincoln Council	12	39	33	17.9%	G	0.85
Gradko	20% TEA in water	2015	R	Borough Council of King's Lynn and West Norfolk	12	29	22	32.5%	G	0.75
Gradko	20% TEA in water	2015	R	Cheshire West and Chester	10	38	40	-5.2%	G	1.06
Gradko	20% TEA in water	2015	R	Dudley MBC	12	47	50	-5.9%	G	1.06
Gradko	20% TEA in water	2015	R	Dudley MBC	12	40	35	14.0%	G	0.88
Gradko	20% TEA in water	2015	R	Dudley MBC	12	34	31	10.0%	G	0.91
Gradko	20% TEA in water	2015	UB	Dudley MBC	11	23	19	20.0%	G	0.83
Gradko	20% TEA in water	2015	KS	Glasgow City Council	12	60	61	-0.9%	P	1.01
Gradko	20% TEA in water	2015	UB	Glasgow City Council	10	25	25	3.3%	P	0.97
Gradko	20% TEA in water	2015	R	Glasgow City Council	9	30	31	-2.8%	P	1.03
Gradko	20% TEA in water	2015	R	Glasgow City Council	12	43	38	14.0%	P	0.88
Gradko	20% TEA in water	2015	KS	Marylebone Road Intercomparison	12	102	61	26.2%	G	0.79
Gradko	20% TEA in water	2015	UB	Liverpool	12	20	22	-9.0%	G	1.10
Gradko	20% TEA in water	2015	R	Preston City Council	12	29	27	8.9%	G	0.92
Gradko	20% TEA in water	2015	R	Thurrock Borough Council	12	28	45	-37.1%	G	1.59
Gradko	20% TEA in water	2015	R	Gateshead Council	11	33	33	-0.8%	G	1.01
Gradko	20% TEA in water	2015	R	Gateshead Council	10	36	33	11.2%	G	0.90
Gradko	20% TEA in water	2015	R	Gateshead Council	12	28	25	9.2%	G	0.92
Gradko	20% TEA in water	2015	KS	New Forest DC	11	47	36	31.1%	P	0.76
Gradko	20% TEA in water	2015	R	New Forest DC	11	33	25	31.7%	G	0.76
Gradko	20% TEA in water	2015	R	Wokingham Borough Council	11	36	33	-69.0%	G	0.93
Gradko	20% TEA in water	2015	UC	Southampton City Council	12	28	29	-3.5%	G	1.04
Gradko	20% TEA in water	2015		Overall Factor⁵ (29 studies)					Use	0.91

Discussion of Choice of Factor to Use

Wealden District Council has no means of deriving a local bias adjustment factor as there is no co-location study with diffusion tubes and a continuous analyser.

Therefore, the national bias adjustment factor has been used.

PM Monitoring Adjustment

The PM₁₀ data from the FDMS continuous analysers at Eastbourne Devonshire Park (EB1) and Holly Place (EB3) measure gravimetric-equivalent PM₁₀ concentrations, and therefore no additional adjustment has been necessary.

Short-term to Long-term Data Adjustment

As data capture for the Lullington Heath continuous NO₂ analyser was 67% in 2015, period adjustment was carried out using data from three continuous NO₂ analysers in urban background sites in neighbouring local authorities: Eastbourne – Holly Place (EB3), Lewes – Denton Community Centre (LS6), and Brighton and Hove – Preston Park (BH0). The EB3 and LS6 analysers had 99% data capture and the BH0 analyser had 98% data capture. The periods used in the adjustment calculation were 01/01/15 - 18/05/15 and 11/09/2015 - 31/12/2015. The average ratio of the annual mean to the period mean is the adjustment factor used. The details of this adjustment calculation are given in Table C.1.

Table C.1 – Period Adjustment of 2015 NO₂ Data for Lullington Heath (LL1) automatic monitoring site.

Site ID	Annual Mean Concentration (µg/m ³)	Period Mean Concentration (µg/m ³)	Annual Mean to Period Mean Ratio
EB3	10.6	11.8	0.89
LS6	10.2	11.4	0.89
BH0	14.6	15.8	0.93
Average Ratio			0.90

As data capture for the Eastbourne - Holly Place continuous PM_{2.5} analyser was 67% in 2015, period adjustment was carried out using data from three continuous PM_{2.5} analysers in background sites within 75 miles: Reading – New Town (REA1), Portsmouth (PMTH), and Rochester – Stoke (ROCH), which had data capture

respectively of 90%, 92% and 91%. The periods used in the adjustment calculation were 01/01/2015 - 11/01/2015, 20/04/2015 - 01/07/2015, 07/07/2015 - 26/07/2015, 31/07/2015 - 07/08/2015, 20/08/2015 - 01/09/2015 and 02/09/2015 - 31/12/2015. The average ratio of the annual mean to the period mean is the adjustment factor used. The details of this adjustment calculation are given in Table C.2.

Table C.2 – Period Adjustment of 2015 PM_{2.5} Data for Eastbourne - Holly Place (EB3) automatic monitoring site.

Site ID	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)	Period Mean Concentration ($\mu\text{g}/\text{m}^3$)	Annual Mean to Period Mean Ratio
REA1	7.9	6.3	1.26
PMTH	10.5	9.1	1.15
ROCH	9.1	7.9	1.16
Average Ratio			1.19

QA/QC of Automatic Monitoring

As previously described in Section 2.1, monitoring stations within East Sussex are part of the SAQMN and, therefore, measurements made at these sites are traceable to national standards and operational procedures defined for the regional network. AURN sites such as Lullington Heath and Holly Place are managed by Defra contractors and data collected at these sites are traceable to the UK AURN national standards.

QA/QC of Diffusion Tube Monitoring

AIR is an independent analytical proficiency-testing (PT) scheme, operated by LGC Standards and supported by the Health and Safety Laboratory (HSL). AIR PT is a new scheme, started in April 2014, which combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL Workplace Analysis Scheme for Proficiency (WASP) PT scheme.

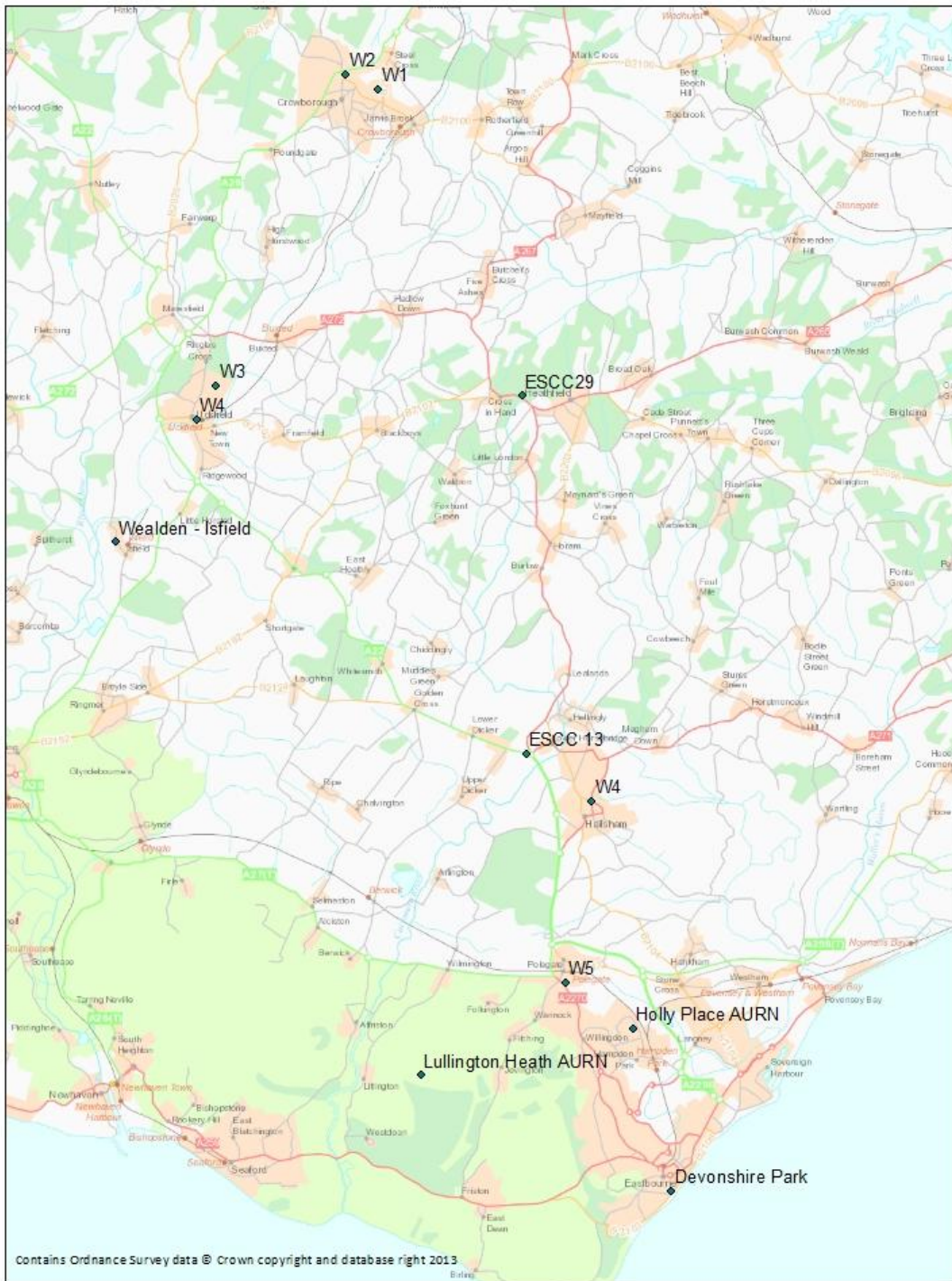
Defra and the Devolved Administrations advise that diffusion tubes used for Local Air Quality Management should be obtained from laboratories that have demonstrated satisfactory performance in the AIR PT scheme.

Wealden District Council

Wealden District Council used Gradko International for diffusion tubes, with a 20% triethanolamine (TEA) in water preparation. In the 12 most recent AIR PT testing rounds, Gradko achieved 100% satisfactory results, and so there is high confidence in the accuracy of the diffusion tube results.

Appendix D: Map(s) of Monitoring Locations

Figure 8: Automatic and Non-Automatic Monitoring Locations



Air Quality Monitoring Locations in the Wealden District

Legend

- ◆ Diffusion Tube Locations
- ◻ Automatic Monitors

AECOM Sunley House, 4 Bedford Park, Croydon, CR0 2AP
Tel: +44 (0)20 8639 3500, Fax: +44 (0)20 8663 6723
www.aecom.com

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ¹⁶	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM _{2.5})	Work towards reducing emissions/concentrations	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

Table E.2 – Additional objectives from the UK Air Quality Strategy

Pollutant	Air Quality Objective ¹⁵	
	Concentration	Measured as
Ozone (O ₃)	100 µg/m ³ , not to be exceeded more than 10 days a year	Running 8-hour mean

¹⁶ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SAC	Special Area of Conservation
SAMMS	Strategic Access Management and Monitoring Strategy
SANGS	Suitable Alternative Natural Green Spaces
SO ₂	Sulphur Dioxide
SPA	Special Protection Area
O ₃	Ozone

References

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