

East Devon District Council Annual Status Report 2020

Bureau Veritas

August 2020



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2020 Air Quality Annual Status Report (ASR)

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

August 2020

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Executive Summary: Air Quality in Our Area

Air Quality in East Devon District Council

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 areas1,2.

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

East Devon is a mainly rural area with small market towns and only pockets of commercial development, mainly involving supply and distribution. Although there are some modern energy plants these are small scale and compliant with the air quality requirements of their environmental permits. The M5 motorway runs through the west of the district, and the area is bisected east to west by the A35 and A30 major trunk roads. Smaller main roads serving the main towns and commercial areas feed into the strategic network. East Devon is an identified area of expansion for the City of Exeter and it is likely that vehicle flows will increase as a result of this.

The main pollutant of concern in East Devon is NO₂ arising from road traffic around the busier and more congested areas and as such, East Devon District Council ('the Council'), have continued to primarily focus on NO₂ monitoring and management. 53 passive monitoring sites, including 1 triplicate location, were deployed to monitor NO₂ concentrations across East Devon in 2019, as well as the Automatic Urban and Rural Network (AURN) Honiton Urban Background monitoring site.

Air quality across East Devon District Council is considered good overall; with only one exceedance of the 40µg/m³ annual mean Air Quality Objective (AQO) in 2019, which is located along Honiton High Street (site N46 – 41.5µg/m³). Site N46 falls below the AQO following application of the distance correction to relevant exposure calculation⁴.

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

Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
 Defra. Abatement cost guidance for valuing changes in air quality, May 2013
 Nitrogen Dioxide fall off with distance. https://lagm.defra.gov.uk/tools-monitoring-data/no2-falloff.html

East Devon District Council revoked their only Air Quality Management Area (AQMA) in April 2018 as a result of monitored improvements in air quality in the designated area, in addition to the 2017 detailed air quality report⁵, which concluded that no exceedances were likely to be observed at locations of relevant exposure within the district.

East Devon District Council have continued to work with other local authorities such as Devon District Council, Exeter City Council and Teignbridge District Council on larger schemes across the wider Devon area. These schemes include the Devon Wide Personal Exposure Reduction Project Report⁶ and the Devon Low-Carbon Energy & Transport Technology Innovator (DELETTI) programme⁷.

Actions to Improve Air Quality

There are no designated AQMAs within the district; therefore, the Council has no active Air Quality Action Plans (AQAPs). The Council however continue to progress a number of measures in order to ensure that the district regularly improves on its local air quality.

The Council continue to recommend that all major new developments across the district incorporate measures to discourage car use with the provision of cycle and walking routes, subsidise new bus services, and install electric vehicle charging points across the area.

The Greater Exeter Strategic Plan (GESP Project); involving East Devon, Exeter, Mid Devon and Teignbridge Councils, is currently in its consultation process and is to include draft planning policies and large scale development options across all four Council areas during 2020 in relation to transport trends and low carbon studies⁸. This will be discussed further in next year's ASR.

Conclusions and Priorities

In 2019, there was one exceedance reported of the $40\mu g/m^3$ annual mean NO_2 objective (site $N46-41.5\mu g/m^3$). Following distance correction at locations not already at relevant exposure, all monitoring locations across East Devon remained compliant with the AQO. One monitoring location located in Wilmington continued to report within 10% of the AQO, following distance correction (site N71 – $36.6\mu g/m^3$). Based on the

⁵ https://eastdevon.gov.uk/media/2266676/honiton-detailed-assessment-as-part-of-asr-defra-approved.pdf

https://committees.exeter.gov.uk/documents/s52642/AirQualityMonitoringReport.pdf

https://eastdevon.gov.uk/news/2019/10/electric-car-charge-points-to-be-installed-in-east-devon-car-parks/

⁸ https://www.gesp.org.uk/consultation-phases/stage-two-policy-and-options/

historically exceeding, or close to exceedance, concentration levels observed in NO₂ concentrations since 2016 at location N71, the Council plan to deploy additional diffusion tube monitoring sites within the Wilmington area for 2020 as part of the Council's continuous review of East Devon's NO₂ monitoring regime. The additional monitoring results will be discussed in next year's ASR.

The Honiton AURN automatic urban background monitoring site continued to monitor no exceedances in both the short and long term objective limits in 2019, with the NO₂ annual mean concentration continuing to report significantly below the AQO (2019 - 8.1µg/m³).

East Devon District Council's priorities for the coming year include;

- Deploy additional NO₂ monitoring locations within the Wilmington area and continue to review the current NO₂ diffusion tube monitoring network, where necessary, in order to identify and mitigate any potential exceedances of the annual mean air quality objective at locations of relevant exposure;
- Progress ongoing projects such as the Greater Exeter Strategic Plan consultation and the Devon Low-Carbon Energy & Transport Technology Innovator Programme;
- Ensure new developments meet the requirements of planning policies and guidance in relation to air quality; and
- Proceed to the 2021 Annual Status Report.

Local Engagement and How to get Involved

Local residents of East Devon can help to improve air quality in the district by using alternative methods of sustainable transport such as walking, running, cycling, public transport or replacing petrol/diesel cars with an electric vehicle. Car sharing is also a simple way to reduce private car use. Further information regarding East Devon District Council's Local Air Quality Management strategy, including access to the Council's LAQM reports, can be found on the Council's website.⁹

⁹ http://eastdevon.gov.uk/environment/air-quality/

Table of Contents

| Executive Summary: Air Quality in Our Area | i |
|---|-----|
| Air Quality in East Devon District Council | i |
| Actions to Improve Air Quality | ii |
| Conclusions and Priorities | ii |
| Local Engagement and How to get Involved | iii |
| 1 Local Air Quality Management | 1 |
| 2 Actions to Improve Air Quality | 2 |
| 2.1 Air Quality Management Areas | 2 |
| 2.2 Progress and Impact of Measures to address Air Quality in East Devon | |
| District Council | 3 |
| 2.3 PM _{2.5} – Local Authority Approach to Reducing Emissions and/or | |
| Concentrations | 5 |
| 3 Air Quality Monitoring Data and Comparison with Air Quality | |
| Objectives and National Compliance | 7 |
| 3.1 Summary of Monitoring Undertaken | |
| 3.1.1 Automatic Monitoring Sites | |
| 3.1.2 Non-Automatic Monitoring Sites | |
| 3.2 Individual Pollutants | 8 |
| 3.2.1 Nitrogen Dioxide (NO ₂) | 8 |
| Appendix A: Monitoring Results | 11 |
| Appendix B: Full Monthly Diffusion Tube Results for 2019 | 35 |
| Appendix C: Supporting Technical Information / Air Quality Monitoring | |
| Data QA/QC | 40 |
| QA/QC of automatic monitoring | |
| QA/QC of diffusion tube monitoring | |
| Diffusion Tube Bias Adjustment | |
| Short to Long term data adjustment; Annualisation | 42 |
| NO ₂ Fall-off with Distance Correction | 43 |
| Appendix D: Map(s) of Monitoring Locations and AQMAs | 44 |
| Appendix E: Summary of Air Quality Objectives in England | 54 |
| Glossary of Terms | 56 |
| Deferences | E7 |

List of Tables

| Table A.1 - Details of Automatic Monitoring Sites | 12 18 34 35 |
|--|----------------------|
| Table E.1 – Air Quality Objectives in England | 54 |
| List of Figures | |
| Figure A.1 - Trends in Annual Mean NO ₂ Concentrations – Honiton AURN | |
| Lympstone - Passive Monitoring Sites | |
| Sidmouth- Passive Monitoring Sites Figure A.4 - Trends in Annual Mean NO ₂ Concentrations - Clyst St George - Pass Monitoring Sites | sive |
| Figure A.5 - Trends in Annual Mean NO ₂ Concentrations - East of Exeter, Beare, Broadclyst - Passive Monitoring Sites | |
| Figure A.6 - Trends in Annual Mean NO ₂ Concentrations - Clyst St Mary, Farringc - Passive Monitoring Sites | lon |
| Figure A.7 - Trends in Annual Mean NO ₂ Concentrations - Axminster - Passive Monitoring Sites | |
| Figure A.8 - Trends in Annual Mean NO ₂ Concentrations - Seaton, Ottery - Passiv Monitoring Sites | /e |
| Figure A.9 - Trends in Annual Mean NO ₂ Concentrations - Honiton West - Passive | Э |
| Figure A.10 - Trends in Annual Mean NO ₂ Concentrations - Honiton Central & Ea | |
| Figure A.12 - Trends in Annual Mean NO ₂ Concentrations - Wilmington- Passive Monitoring Sites | |
| Figure C.1 – National Bias Adjustment 2019 | 41 |
| Figure C.2 – Honiton, Dove Close Local Bias Adjustment 2019 | 42 |
| Figure C.3 - Fall off with Distance Correction | 43 |
| Figure D.1 - 2019 NO ₂ Monitoring Locations - Exmouth, Exton and Lympstone | |
| Figure D.2 - 2019 NO ₂ Monitoring Locations - Newton Pop, Sidford. Sidmouth | |
| Figure D.3 - 2019 NO ₂ Monitoring Locations - Clyst St George | |
| Figure D.4 - 2019 NO2 Monitoring Locations – East of Exeter, Beare, Broadcryst Figure D.5 - 2019 NO ₂ Monitoring Locations – Clyst St Mary, Farringdon | |
| Figure D.6 - 2019 NO ₂ Monitoring Locations – Gryst St Mary, Farmingdon | |
| Figure D.7 - 2019 NO ₂ Monitoring Locations – Seaton | |
| Figure D.8 - 2019 NO ₂ Monitoring Locations – Ottery | 51 |
| Figure D.9 - 2019 NO ₂ Monitoring Locations – Honiton | 52 |
| Figure D.10 - 2019 NO ₂ Monitoring Locations – Wilmington | 53 |

1 Local Air Quality Management

This report provides an overview of air quality in East Devon District Council during 2019. 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 East Devon 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.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

Information related to the UK's declared or revoked AQMAs, including maps of AQMA boundaries, are available online.¹⁰

East Devon District Council had one declared AQMA in the Honiton area as a result of exceedances of the NO₂ annual mean objective, however the AQMA was revoked in April 2018. This was following robust monitoring data trends identifying consistent improvements of the monitored annual mean NO₂ concentrations in the area.

East Devon District Council does not currently have any declared AQMAs.

LAQM Annual Status Report 2020

 $^{10 \} AQMA \ Maps \ and \ Further \ Information:: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=86$

2.2 Progress and Impact of Measures to address Air Quality in East Devon District Council

As reported within last year's appraisal document, following the 2018 revocation of the sole AQMA within East Devon Council, Defra were supportive of the Council's continued review of the existing monitoring regime that was in place throughout 2019. Defra further recommended that the Council should continue to review the monitoring programme regularly, ensuring that any potential exceedances are identified at sites of relevant exposure. Defra further recommended that the Council include a more detailed discussion of PM_{2.5} concentrations across the District; this has therefore been included in Section 2.3 of this year's report.

The Council, despite not currently having a declared AQMA or AQAP in place, have progressed a number of measures in 2019 in order to improve air quality and help identify any potential improvements. Such actions are as follows;

- In 2019, the Council began the Devon Low-Carbon Energy & Transport Technology Innovator (DELETTI) programme, which aims to help reduce emissions with the installation of electric vehicle charging points for public use across Devon¹¹;
- Investigations were undertaken in relation to the GESP project between October 2018 and March 2019, surrounding vehicle flow deriving from the A3052 and A376, which were previously identified as potentially impacting on air quality at new developments;¹²
- Continued review of the Council's passive monitoring network.

Following distance correction, no exceedances were reported in East Devon Council during 2019. Areas of exceedance or close to exceedance, which have been reported in the 2019 data prior to any distance correction, will be monitored in future reporting years to identify if these areas continue or worsen. Where this becomes apparent, an AQMA may be considered.

The Council's main priorities for the coming year are to progress consultation of the GESP Project, continue the work associated with the DELETTI programme, and

¹¹ https://eastdevon.gov.uk/news/2019/10/electric-car-charge-points-to-be-installed-in-east-devon-car-parks/

¹² https://eastdevon.gov.uk/environmental-health-and-wellbeing/land-air-and-water-pollution/air-quality/review-monitoring-and-assessment-reports/2019-to-2020-8th-round/

continue to review and further develop the Council's existing NO₂ monitoring strategy where necessary.

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 2.5µm 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.

Currently there is no LAQM monitoring of PM_{2.5} completed within the District, however, East Devon District Council have carried out PM_{2.5} monitoring through the use of 5 Zephyr® air quality sensors¹³ in 2019.

Zephyr® air quality sensors are not MCERTS certified¹⁴, therefore they are not approved for use under LAQM. Monitoring data from these instruments can however provide an indication of existing PM_{2.5} concentrations in the area, with annual concentrations from these monitors reporting no exceedances of the 25μg/m³ target value in 2019. The highest annual concentration (where data capture was sufficient) was found at Site 55 along the A378 in Ebford (7.0μg/m³). All Zephyr® data is provided within Appendix F: Zephyr® PM_{2.5} Monitoring

In addition, as primary emissions of both NO₂ and particulates predominately originate from the same source, the largely downward trend observed in the Council's NO₂ monitoring data simultaneously indicates reduced trends of both PM₁₀ and PM_{2.5}.

The current Defra 2019 background maps for East Devon (2017 based)¹⁵ show that all background concentrations of PM_{2.5} are far below the annual mean AQS target value for PM_{2.5}. The highest concentration is predicted to be 8.4µg/m³ within the 1 x 1km grid square x297500, y94500. This grid square encapsulates a section of the M5, South of West Clyst.

The Public Health Outcomes Framework data tool¹⁶ compiled by Public Heath England quantifies the mortality burden of PM_{2.5} within England on a county and local authority scale. The 2018 fraction of mortality attributable to PM_{2.5} pollution in East Devon is

¹³ https://www.earthsense.co.uk/zephyr

¹⁴ https://uk-air.defra.gov.uk/networks/monitoring-methods?view=mcerts-scheme

¹⁵ Defra Background Maps (2017-based), available online at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2017

¹⁶ Public Health Outcomes Framework, Public Health England, data tool available online at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000009/ati/101/are/E07000040/iid/30101/age/230/sex/4/cid/4/page-options/car-do-0

3.4%, 1% below the South West Region average of 4.4% and almost 2% below the national average of 5.2%.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

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

There is one automatic monitoring site in East Devon (Honiton AURN). Table A.1 in Appendix A shows the details of the site. The site monitors hourly NO₂ concentrations and is part of the Automatic, Urban and Rural Network (AURN) in the UK.

National monitoring results are available at https://uk-air.defra.gov.uk/data/.

A map showing the location of the automatic monitoring site is provided in Appendix D. Further details on how the monitor is calibrated and how the data has been adjusted is included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

East Devon District Council undertook non- automatic (passive) monitoring of NO₂ at 53 sites, including 1 triplicate site, during 2019. Table A.2 in Appendix A shows the details of the sites. Monitoring location N84 was deployed from February 2019, at a location within Newton Poppleford along the A3052, where there are a high number of relevant receptors present and local concerns had been raised regarding the air quality in the area. Diffusion tube N61, located in Sowton on the side of a residential property with monitoring site N60, was decommissioned from February 2019 due to providing similar results to the N60 diffusion tube therefore it was decided that the diffusion tube would be more beneficial elsewhere (N84 location) . N61 did not therefore provide sufficient data to be included within the Council's 2019 annual mean monitoring data.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. distance correction), are included in Appendix C.

Individual Pollutants 3.2

The air quality monitoring results presented in this section are, where relevant, adjusted for bias¹⁷ and distance correction¹⁸. Annualisation (where the data capture falls below 75%) was not required in 2019 due to all monitoring locations providing over 75% of the 2019 data capture. One monitoring site, N61, provided monitoring data in January 2019 only, therefore did not have the sufficient 3 months' minimum data capture required for annualisation to be applied as per TG(16) guidance¹⁹. Details on the adjustments undertaken for the 2019 data 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 40µg/m³. Note that the concentration data presented in Table A.3 represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year.

Data capture for the 2019 decommissioned diffusion tube (N61) was reported at 8.3% in 2019 (January 2019, only) therefore this site is not included within the Council's 2019 monitoring data as, according to TG(16)¹⁹, there must be a minimum of 3 month's data capture for annualisation to be completed.

Diffusion Tube results for 2019 have been bias adjusted using a local bias adjustment factor of 0.91. Full details of the bias adjustment and QA/QC procedure are provided in Appendix C.

https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html
 Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

¹⁹ https://lagm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf

During 2019, before distance correction was applied, 1 site recorded an NO₂ annual mean concentration above the NO₂ annual mean air quality objective (AQO) of $40\mu g/m^3$ (N46 - $41.5\mu g/m^3$), and 2 monitoring locations reported concentrations to be within 10% of the annual mean objective (N59- $38.5\mu g/m^3$ & N71- $38.6\mu g/m^3$). The monitoring site N46 is located in Honiton at the junction of the A35 and, following the application of the fall-off with distance correction calculation, the 2019 concentration fell to $20.1\mu g/m^3$. Monitoring locations N59 and N71, located in Clyst St. George along the A376 and Wilmington respectively, fell to $17.8\mu g/m^3$ and $36.6\mu g/m^3$ following distance correction. Of the 2019 NO₂ concentrations following distance correction, Wilmington's N71 was therefore the highest reported concentration in the District at $36.6\mu g/m^3$.

Full details of the distance correction calculations are provided in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

There is a predominatly downward trend in NO₂ concentrations in East Devon, with 41 diffusion tubes across the District in 2019 reporting a decrease in NO₂ concentrations in comparison to 2018. There is however a slight increase in concentrations reported at 12 diffusion tube monitoring locations during 2019, in comparison to the 2018 monitoring data. The highest increase for this reporting year in comparison to 2018 was recorded at site N60, with an increase of $4.0\mu g/m^3$, which is located close to the junction 29 slip road of the M5. Similarly, this is close to the grid square where PM_{2.5} background concentrations were estimated to be at their highest in 2019 (8.4 $\mu g/m^3$). The AURN monitoring site in Honiton, reported a NO₂ annual mean increase of 0.7 $\mu g/m^3$ in 2019, when compared to 2018. The AURN site however, continues to report significantly below the AQO with a NO₂ annual mean concentration of 8.1 $\mu g/m^3$ in 2019.

In accordance with Defra LAQM.TG(16)¹⁹, the 2019 diffusion tube results indicate that an exceedance of the 1-hour mean objective is unlikely to have occurred at any of the locations as no concentrations reported 60µg/m³ or above. Equally, no exceedances of the 1-hour mean objective were reported in 2019 at the AURN automatic monitoring site in Honiton.

Following the application of distance correction, there are no 2019 exceedances within the District, with one monitoring location reporting within 10% of the AQO (site N71).

Following distance correction, no other monitoring sites within East Devon District Council reported concentrations exceeding 36µg/m³, with the majority of existing monitoring sites reporting continuous downward concentration trends. This indicates that the Council does not need to establish an AQMA anywhere in the District at this time.

3.2.2 Particulate Matter (PM_{2.5})

East Devon District Council undertakes monitoring of PM_{2.5} through the use of Zephyr® air quality sensors²⁰. Currently there are 4 monitors in operation with an additional monitor that ceased operation at the end of 2019, and are detailled as follows:

- Site 43, located at Dove Close in Honiton;
- Site 50, located just off of the roundabout connecting the A376 and A3052 in Clyst St Mary;
- Site 55, located along the A378 in Ebford;
- Site 56 located along the A3052 in Clyst St Mary; and
- Site 395, located along the A3052 in Clyst St Mary (replacing monitor 56);

Zephyr® air quality sensors are not MCERTS certified²¹, therefore not suitable for LAQM reporting purposes, however monitoring data from these instruments can provide an indication of existing PM_{2.5} concentrations in the area. Annual concentrations from these monitors are presented in Appendix F and were found to not exceed the 25µg/m³ target value in 2019.

²⁰ https://www.earthsense.co.uk/zephyr

²¹ https://uk-air.defra.gov.uk/networks/monitoring-methods?view=mcerts-scheme

Appendix A: Monitoring Results

Table A.1 - Details of Automatic Monitoring Sites

| Site ID | Site Name | Site Type | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Pollutants Monitored | In AQMA? | Monitoring Technique | Distance to Relevant Exposure (m) (1) | Distance to kerb of nearest road (m) | Inlet Height (m) |
|------------------------------------|-----------|---------------------|-------------------------------|--------------------------------|-------------------------|-------------|-------------------------|---|--|------------------|
| Honiton AURN (Dove Close) | Honiton | Urban Background | 315749 | 99874 | NO2 | NO | FDMS | 20 | N/A | 2 |

Notes:

- (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) |
|-------------|--|------------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|
| Exmouth, Ex | cton, Lympstone | | | | | | | | | |
| N01 | N01 Exmouth - Library | Kerbside | 300267 | 81193 | NO ₂ | N | N/A | 2.4 | No | 2.5 |
| N02 | N02 Exmouth - Salterton Rd opp Tesco | Roadside | 302163 | 81724 | NO ₂ | N | 31.1 | 1.6 | No | 2.5 |
| N03 | N03 Exmouth - 64 Chichester Close | Industrial | 301386 | 81518 | NO ₂ | N | 7.7 | 1.7 | No | 2.5 |
| N07 | N07 Exmouth - The Strand | Kerbside | 300087 | 80955 | NO ₂ | N | N/A | 0.7 | No | 2.7 |
| N73 | N73 Exmouth - 369 Exeter Road | Kerbside | 300294 | 83265 | NO ₂ | N | 0 | 1.7 | No | 2.4 |
| N74 | N74 Lympstone - Opposite 6 Jubilee Grove | Kerbside | 299931 | 84157 | NO ₂ | N | 0 | 1.7 | No | 2.4 |
| N75 | N75 Exton - Iddesleigh Terrace | Kerbside | 298425 | 86472 | NO ₂ | N | 0 | 1.7 | No | 2.4 |
| Newton Pop | , Sidmouth, Sidfor | d | | | | | | | | |
| N16 | N16 Sidmouth - opp Travelwise | Roadside | 312665 | 87432 | NO ₂ | N | N/A | 4.9 | No | 2.5 |
| N19 | N19 Sidford - School St (opp PO) | Roadside | 313403 | 90074 | NO ₂ | N | N/A | 1.5 | No | 2.5 |

| 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) |
|--------------|--|-----------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|
| N72 | N72 Newton Pop - Westhayes High Street | Kerbside | 308004 | 89533 | NO ₂ | N | 0 | 1.3 | No | 2.32 |
| N84 | Newton- Poppleford - School Lane junction, A3052 | Roadside | 308632 | 89742 | NO ₂ | N | 9 | 1.14 | No | 2.38 |
| Clyst St Geo | rge | | | | | | | | | |
| N06 | N06 Clyst St George - George & Dragon | Kerbside | 298062 | 88425 | NO ₂ | N | 1.4 | 6.2 | No | 2.5 |
| N68 | N68 Clyst St George - o/s Marsh Barton | Roadside | 298079 | 88521 | NO ₂ | N | N/A | 6.5 | No | 2.5 |
| N59 | N59 Clyst St George - o/s Clyst Dene | Roadside | 298083 | 88337 | NO ₂ | N | 26 | 1.2 | No | 2.5 |
| N63_EB | N63_EB Clyst St George - speed sign – Ebford Lane | Roadside | 298088 | 88161 | NO ₂ | N | 0.2 | 2.6 | No | 2.5 |
| N80 | N80 Nr 21 to 23 Exmouth Rd | Roadside | 297941 | 89437 | NO ₂ | N | 13 | 2.75 | No | 1.85 |

LAQM Annual Status Report 2020

| 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) |
|--------------|---|------------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|
| East of Exet | er - Beare, Broado | lyst | | | | | | | | |
| N26 | N26 Little Orchard - Airport junction | Roadside | 299102 | 93198 | NO ₂ | N | N/A | 2.5 | No | 2.5 |
| N60 | N60 Sowton - Sowton Lodge (Nearest) | Roadside | 297029 | 93140 | NO ₂ | N | 0.1 | 11 | No | 2 |
| N61 | N61 Sowton - Sowton Lodge (Furthest) | Roadside | 297018 | 93139 | NO ₂ | N | 0.1 | 12 | No | 2 |
| N20 | N20 Clyst Honiton - o/s Whimple Farm | Roadside | 300345 | 94860 | NO ₂ | N | 9.6 | 7.1 | No | 2.5 |
| N21 | N21 Broadclyst - opp Lower Hayes | Roadside | 299605 | 95350 | NO ₂ | N | 7.3 | 6.9 | No | 2.5 |
| N22 | N22 Rockbeare - Jack in the Green | Industrial | 301876 | 95558 | NO ₂ | Ν | 53.4 | 80 | No | 2.5 |
| N76 | N76 Cranbrook - St Martins School | Roadside | 300283 | 95200 | NO ₂ | Ν | 0 | 8.5 | No | 2.44 |
| N77 | N77 Cranbrook - Opposite Jn Court Royal | Roadside | 301228 | 95665 | NO ₂ | N | N/A | 4.9 | No | 2.35 |
| N78 | N78 Beare - Beare House | Industrial | 299763 | 102177 | NO ₂ | N | N/A | N/A | No | 2.5 |

| 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) |
|----------------|---|-----------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|
| Clyst St Mary | y, Farringdon | | | | | | | | | |
| N13 | N13 Clyst St Mary - Opp P. O. | Roadside | 297314 | 91056 | NO ₂ | N | 6.7 | 1.9 | No | 2.5 |
| N63 _ LODGE | N63_LO Clyst St Mary - Lodge A3052 | Roadside | 297633 | 90927 | NO ₂ | N | 2 | 2.9 | No | 2.5 |
| N64_GP | N64_GP Clyst St Mary - A3052 Crealy | Roadside | 300259 | 90712 | NO ₂ | N | N/A | 11 | No | 1.9 |
| N65 | N65 Clyst St Mary - A3052 Farringdon | Roadside | 300735 | 90555 | NO ₂ | N | N/A | 2.8 | No | 2.5 |
| N66 | N66 Clyst St Mary - A3052 Vineyard | Roadside | 302491 | 90461 | NO ₂ | Ν | N/A | 5.1 | No | 2.5 |
| N67 | N67 Clyst St Mary - B3184 Opp Perkins | Kerbside | 302420 | 90750 | NO ₂ | Ζ | N/A | 0.8 | No | 2.5 |
| N81 | N81 rear of Lammorric | Roadside | 297327 | 90998 | NO ₂ | Ν | 9 | 0.34 | No | 2.1 |
| N82 | N82 Nr 1 Poplars Walk | Roadside | 298923 | 90859 | NO ₂ | Ν | 20 | 2.15 | No | 1.9 |
| N83 | N83 Nr 44 Sidmouth Roa | Roadside | 299997 | 90722 | NO ₂ | N | 66 | 3.8 | No | 1.84 |

| 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) |
|---------------|---|---------------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|
| Axminster | | | | | | | | | | |
| N11 | N11 Axminster - o/s Swans | Roadside | 329584 | 98464 | NO ₂ | N | 0.1 | 1.5 | No | 2.5 |
| N56 | N56 Axminster - Trinity Square | Kerbside | 329680 | 98550 | NO ₂ | N | N/A | 0.7 | No | 2.5 |
| N57 | N57 Axminster - George Hotel | Roadside | 329765 | 98554 | NO ₂ | N | N/A | 1.5 | No | 2.5 |
| N58 | N58 Axminster - Homelea Grand Rd | Roadside | 329789 | 98613 | NO ₂ | N | N/A | 1.4 | No | 2.5 |
| N64_AX | N64_AX Axminster - Morgan York Victoria PI | Kerbside | 329743 | 98589 | NO ₂ | N | N/A | 1 | No | 2.5 |
| Ottery, Seato | | | | | | | | | | |
| N14 | N14 Seaton - 6 Marine Crescent | Roadside | 324479 | 89930 | NO ₂ | N | 0.1 | 4.4 | No | 2.5 |
| N10 | N10 Ottery St Mary - Bank/Gold St | Roadside | 309882 | 95449 | NO ₂ | N | 1.5 | 1.5 | No | 2.5 |
| Honiton - We | st (Near Turks He | ead Junction) | | | | | | | | |
| N24 | N24 opp 4 Ex Rd | Roadside | 315097 | 100182 | NO ₂ | N | 12.7 | 0.1 | No | 2.5 |
| N25 | N25 4 Ex Road (garden) | Roadside | 315087 | 100165 | NO ₂ | N | 26 | 0.77 | No | 2.3 |
| N27 | N27 Byways Ex Rd | Roadside | 314875 | 100097 | NO ₂ | N | 0 | 9 | No | 2.5 |
| N29 | N29 West Mede Ex Rd | Roadside | 315114 | 100201 | NO ₂ | N | 0 | 14 | No | 2.5 |

| 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) | | |
|--|---|---------------------|------------------|------------------|-------------------------|-------------|--|--|---|---------------|--|--|
| Honiton - CENTRAL & EAST HONITON (High Street) | | | | | | | | | | | | |
| N09 | N09 High St / Dowell St jn | Roadside | 316062 | 100596 | NO ₂ | N | 0.1 | 2.2 | No | 2.5 | | |
| N36 | N36 10 Dowell St | Kerbside | 316012 | 100653 | NO ₂ | N | 0.1 | 1.2 | No | 2.5 | | |
| N37 | N37 153 High St | Kerbside | 316102 | 100607 | NO ₂ | N | 3.1 | 0.3 | No | 2.5 | | |
| N44 | N44 9 High St | Kerbside | 316629 | 100837 | NO ₂ | N | 2.2 | 0.6 | No | 2.5 | | |
| N45 | N45 Holyshute Cottage | Kerbside | 316816 | 100934 | NO ₂ | N | 17.2 | 0.1 | No | 2.5 | | |
| N46 | N46 Windmill Ct A35 | Kerbside | 316796 | 100856 | NO ₂ | N | 19.8 | 1 | No | 2.5 | | |
| DEFRA AURI | N SITE - HONITO | N, DOVE CLO | SE | | | | | | | | | |
| N62a,b,c | N62 Dove Close (Triplicate) | Urban Background | 315745 | 99875 | NO ₂ | N | N/A | N/A | Yes | 1.75 | | |
| Wilmington | | | | | | | | | | | | |
| N71 | N71 Wilmington Outside Higher Gatehouse EX14 9JR | Kerbside | 321135 | 99875 | NO ₂ | N | 0.7 | 2.7 | No | 3 | | |

Notes:

(2) N/A if not applicable.

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

Table A.3 – Annual Mean NO₂ Monitoring Results

| Site ID | X OS Grid Ref (Easting) | Ref | Site Type | Monitoring | Valid Data Capture for | Valid Data Capture 2019 | NO ₂ Annual Mean Concentration (μg/m³) (3) (4) | | | | | |
|---------------------------|-------------------------------|-------|---------------------|-------------------|---|----------------------------|---|------|------|------|------|--|
| Oite ib | | | | Туре | Monitoring Period (%) ⁽¹⁾ | Wonitoring (0/) (2) | | | | 2018 | 2019 | |
| Honiton AURN (Dove Close) | 315749 | 99874 | Urban Background | Automatic | 100.0% | 100.0% | 8.0 | 8.2 | 7.8 | 7.4 | 8.1 | |
| Exmouth, Extor | n, Lympstone | | | | | | | | | | | |
| N01 | 300267 | 81193 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 16.1 | 20.6 | 17.9 | 19.7 | 19.2 | |
| N02 | 302163 | 81724 | Roadside | Diffusion Tube | 100.0% | 100.0% | 15.9 | 19.2 | 18.4 | 17.4 | 16.9 | |
| N03 | 301386 | 81518 | Industrial | Diffusion Tube | 100.0% | 100.0% | 8.7 | 9.8 | 8.7 | 10.6 | 8.8 | |
| N07 | 300087 | 80955 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 21.0 | 24.7 | 24.1 | 22.8 | 21.3 | |
| N73 | 300294 | 83265 | Kerbside | Diffusion Tube | 100.0% | 100.0% | - | - | 30.4 | 29.7 | 29.8 | |
| N74 | 299931 | 84157 | Kerbside | Diffusion Tube | 100.0% | 100.0% | - | - | 29.1 | 27.8 | 25.9 | |
| N75 | 298425 | 86472 | Kerbside | Diffusion Tube | 100.0% | 100.0% | - | - | 36.6 | 37.5 | 34.5 | |
| Newton Pop, Si | dford. Sidmo | uth | | | | | | | | | | |
| N16 | 312665 | 87432 | Roadside | Diffusion Tube | 100.0% | 100.0% | 12.9 | 14.3 | 14.4 | 13.3 | 12.2 | |
| N19 | 313403 | 90074 | Roadside | Diffusion Tube | 100.0% | 100.0% | 20.6 | 20.7 | 19.0 | 17.5 | 19.0 | |
| N72 | 308004 | 89533 | Kerbside | Diffusion Tube | 100.0% | 100.0% | - | - | 18.8 | 18 | 18.5 | |
| N84 | 308632 | 89742 | Roadside | Diffusion Tube | 91.7% | 91.7% | - | - | - | - | 19.3 | |

| Site ID | X OS Grid Ref | Y OS Grid Ref | Site Type | Valid Data Monitoring Capture for | | Valid Data Capture 2019 | NO ₂ Annual Mean Concentration (μg/m³) ^{(3) (4)} | | | | |
|------------------|------------------|------------------|------------|------------------------------------|---|----------------------------|--|------|------|------|------|
| Oile ib | (Easting) | (Northing) | | Туре | Monitoring Period (%) ⁽¹⁾ | (%) ⁽²⁾ | 2015 | 2016 | 2017 | 2018 | 2019 |
| Clyst St George | • | | | | | | | | | | |
| N06 | 298062 | 88425 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 28.4 | 32.4 | 30.7 | 30.4 | 28.3 |
| N68 | 298079 | 88521 | Roadside | Diffusion Tube | 100.0% | 100.0% | 27.6 | 31.4 | 27.3 | 31.8 | 38.5 |
| N59 | 298083 | 88337 | Roadside | Diffusion Tube | 100.0% | 100.0% | 37.1 | 43.0 | 38.6 | 39.8 | 28.3 |
| N63_EB | 298088 | 88161 | Roadside | Diffusion Tube | 100.0% | 100.0% | 29.5 | 32.1 | 29.8 | 32.4 | 31.6 |
| N80 | 297941 | 89437 | Roadside | Diffusion Tube | 100.0% | 100.0% | - | - | - | 20.3 | 19.5 |
| East of Exeter - | Beare, Broad | lclyst | | | | | | | | | |
| N26 | 299102 | 93198 | Roadside | Diffusion Tube | 91.7% | 91.7% | 18.8 | 19.9 | 20 | 19.5 | 18.8 |
| N60 | 297029 | 93140 | Roadside | Diffusion Tube | 100.0% | 100.0% | 26.2 | 32.6 | 26.7 | 27.7 | 31.7 |
| N61 | 297018 | 93139 | Roadside | Diffusion Tube | 100.0% | 8.3% | 26.5 | 29.9 | 25.5 | 27.1 | _* |
| N20 | 300345 | 94860 | Roadside | Diffusion Tube | 100.0% | 100.0% | 12.6 | 13.7 | 13.2 | 12.9 | 13.3 |
| N21 | 299605 | 95350 | Roadside | Diffusion Tube | 91.7% | 91.7% | 7.7 | 8.5 | 7.8 | 7.5 | 7.9 |
| N22 | 301876 | 95558 | Industrial | Diffusion Tube | 100.0% | 100.0% | 7.2 | 10.9 | 9.2 | 9.7 | 10.3 |
| N76 | 300283 | 95200 | Roadside | Diffusion Tube | 91.7% | 91.7% | - | - | 11.4 | 11.4 | 11.2 |
| N77 | 301228 | 95665 | Roadside | Diffusion Tube | 83.3% | 83.3% | - | - | 13.1 | 12.4 | 11.7 |
| N78 | 299763 | 102177 | Industrial | Diffusion Tube | 100.0% | 100.0% | - | - | 19.2 | 22.7 | 21.3 |

| Site ID | X OS Grid | Ref Ref | Site Type | | Valid Data Capture 2019 | NO ₂ Annual Mean Concentration (μg/m³) (3) (4) | | | | | |
|------------------|-----------|---------|-----------|-------------------|---|---|------|------|------|------|------|
| Site ID | (Easting) | | | Туре | Monitoring Period (%) ⁽¹⁾ | 2015 | 2016 | 2017 | 2018 | 2019 | |
| Clyst St Mary, F | arringdon | | | | | | | | | | |
| N13 | 297314 | 91056 | Roadside | Diffusion Tube | 100.0% | 100.0% | 19.2 | 22 | 23.2 | 22.3 | 21.2 |
| N63_LODGE | 297633 | 90927 | Roadside | Diffusion Tube | 100.0% | 100.0% | 31.7 | 35.4 | 34.3 | 33.8 | 30.9 |
| N64_GP | 300259 | 90712 | Roadside | Diffusion Tube | 100.0% | 100.0% | 18.9 | 21.9 | 21.0 | 21 | 19.6 |
| N65 | 300735 | 90555 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 28 | 31.3 | 32.5 | 31 | 28.0 |
| N66 | 302491 | 90461 | Roadside | Diffusion Tube | 100.0% | 100.0% | 12.9 | 14.6 | 13.6 | 14.1 | 12.1 |
| N67 | 302420 | 90750 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 8.1 | 9.6 | 9 | 9.5 | 8.9 |
| N81 | 297327 | 90998 | Roadside | Diffusion Tube | 100.0% | 100.0% | - | - | 1 | 24.9 | 24.1 |
| N82 | 298923 | 90859 | Roadside | Diffusion Tube | 100.0% | 100.0% | - | - | 1 | 27.7 | 25.8 |
| N83 | 299997 | 90722 | Roadside | Diffusion Tube | 100.0% | 100.0% | - | - | 1 | 25.1 | 22.9 |
| Axminster | | | | | | | | | | | |
| N11 | 329584 | 98464 | Roadside | Diffusion Tube | 100.0% | 100.0% | 32.4 | 34.7 | 32.9 | 30.4 | 33.0 |
| N56 | 329680 | 98550 | Roadside | Diffusion Tube | 100.0% | 100.0% | 30.3 | 36.0 | 31.3 | 32.1 | 30.3 |
| N57 | 329765 | 98554 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 23.4 | 24.0 | 23.2 | 23.5 | 22.2 |
| N58 | 329789 | 98613 | Roadside | Diffusion Tube | 100.0% | 100.0% | 27.2 | 35.7 | 33.2 | 31.1 | 31.1 |
| N64_AX | 329743 | 98589 | Roadside | Diffusion Tube | 100.0% | 100.0% | 31.7 | 28.0 | 24.2 | 23.7 | 22.4 |

| Site ID | X OS Grid Ref | Ref Ref | Site Type | Monitoring | Valid Data Capture for | Valid Data Capture 2019 | NO ₂ Annual Mean Concentration (μg/m³) (3) (4) | | | | |
|-----------------------|------------------|----------------|-----------|-------------------|---|----------------------------|---|------|------|------|------|
| Oile ID | (Easting) | | Oile Type | Туре | Monitoring Period (%) ⁽¹⁾ | 2015 | 2016 | 2017 | 2018 | 2019 | |
| Ottery, Seaton | | | | | | | | | | | |
| N14 | 324479 | 89930 | Roadside | Diffusion Tube | 100.0% | 100.0% | 12.6 | 15.8 | 15.1 | 14.3 | 12.4 |
| N10 | 309882 | 95449 | Roadside | Diffusion Tube | 100.0% | 100.0% | 23.1 | 25.2 | 23.3 | 22.9 | 23.4 |
| Honiton - West | (Near Turks H | lead Junction) | | | | | | | | | |
| N24 | 315097 | 100182 | Roadside | Diffusion Tube | 100.0% | 100.0% | 34.6 | 31.6 | 30.3 | 30.6 | 30.1 |
| N25 | 315087 | 100165 | Roadside | Diffusion Tube | 100.0% | 100.0% | - | - | - | 31.7 | 29.4 |
| N27 | 314875 | 100097 | Roadside | Diffusion Tube | 100.0% | 100.0% | 17.3 | 19.7 | 17.9 | 18.6 | 17.3 |
| N29 | 315114 | 100201 | Roadside | Diffusion Tube | 100.0% | 100.0% | 17.8 | 20.4 | 19.0 | 21.3 | 18.0 |
| Honiton - CENT | RAL & EAST | HONITON (Hig | h Street) | | | | | | | | |
| N09 | 316062 | 100596 | Kerbside | Diffusion Tube | 91.7% | 91.7% | 28.9 | 31.8 | 31.7 | 25.4 | 29.2 |
| N36 | 316012 | 100653 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 32.3 | 36.1 | 37.0 | 30.3 | 31.4 |
| N37 | 316102 | 100607 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 32.3 | 41.0 | 39.7 | 35.3 | 34.7 |
| N44 | 316629 | 100837 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 28.0 | 32.6 | 28.6 | 25.9 | 26.4 |
| N45 | 316816 | 100934 | Kerbside | Diffusion Tube | 100.0% | 100.0% | 32.8 | 35.4 | 36.5 | 34.7 | 33.1 |
| N46 | 316796 | 100856 | Kerbside | Diffusion Tube | 91.7% | 91.7% | 40.4 | 45.2 | 45.8 | 42.7 | 41.5 |

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Monitoring | Valid Data Capture for | Valid Data Capture 2019 | NO ₂ | NO₂ Annual Mean Concentration (µg/m³) ^{(3) (4)} | | | | | |
|--------------|---------------------------------------|--------------------------------|---------------------|-------------------|---|----------------------------|-----------------|---|------|------|------|--|--|
| | | | Site Type | Туре | Monitoring Period (%) ⁽¹⁾ | (%) ⁽²⁾ | 2015 | 2016 | 2017 | 2018 | 2019 | | |
| DEFRA AURN S | DEFRA AURN SITE - HONITON, DOVE CLOSE | | | | | | | | | | | | |
| N62a,b,c | 315745 | 99875 | Urban Background | Diffusion Tube | 97.2% | 97.2% | 8.1 | 9.5 | 8.8 | 9.4 | 8.1 | | |
| Wilmington | | | | | | | | | | | | | |
| N71 | 321135 | 99875 | Kerbside | Diffusion Tube | 100.0% | 100.0% | - | 37.7 | 41.5 | 40.9 | 38.6 | | |

- □ Diffusion tube data has been bias corrected
- ☑ Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment

Notes:

Exceedances of the NO_2 annual mean objective of $40\mu g/m^3$ 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 Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.
- (4) Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

*Monitoring site N61 was decommissioned from February 2019

Figure A.1 - Trends in Annual Mean NO₂ Concentrations - Honiton AURN

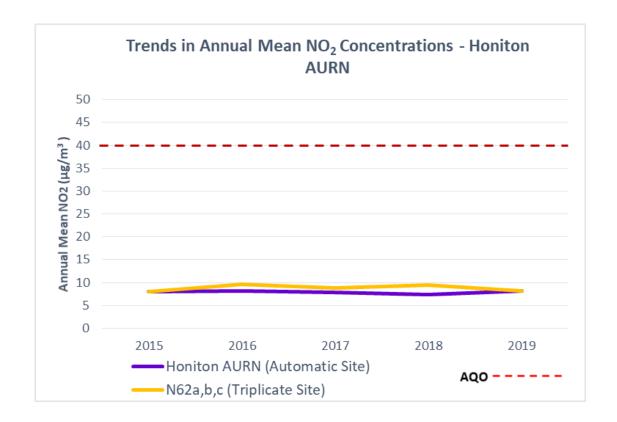


Figure A.2 - Trends in Annual Mean NO₂ Concentrations – Exmouth, Exton, Lympstone - Passive Monitoring Sites

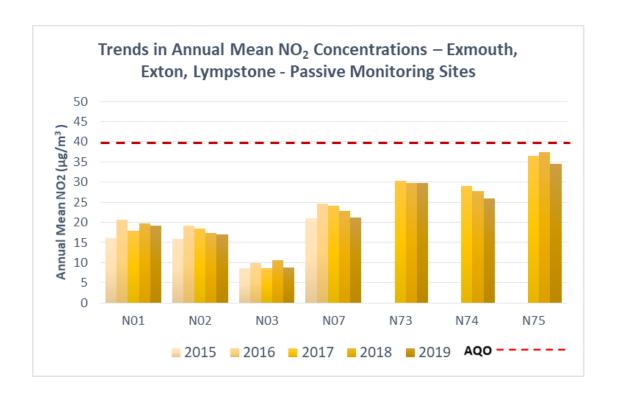


Figure A.3 - Trends in Annual Mean NO₂ Concentrations - Newton Pop, Sidford. Sidmouth- Passive Monitoring Sites

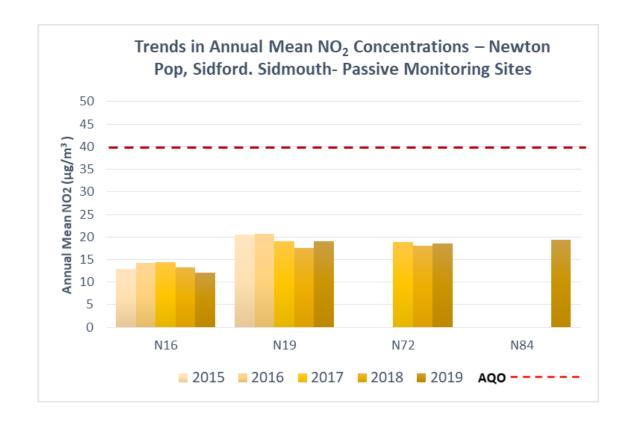


Figure A.4 - Trends in Annual Mean NO₂ Concentrations - Clyst St George - Passive Monitoring Sites

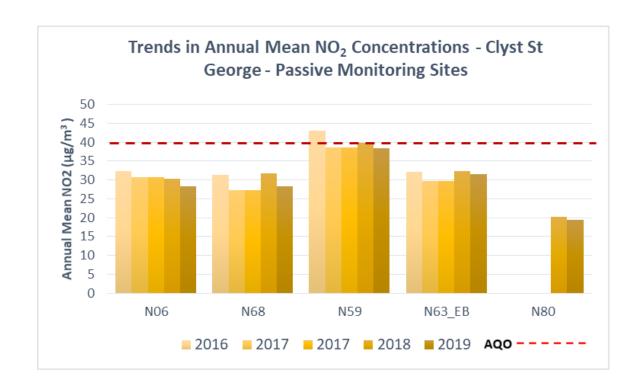


Figure A.5 - Trends in Annual Mean NO₂ Concentrations - East of Exeter, Beare, Broadclyst - Passive Monitoring Sites

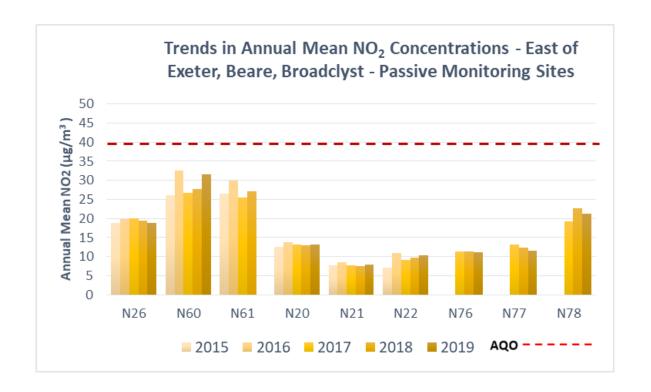


Figure A.6 - Trends in Annual Mean NO₂ Concentrations - Clyst St Mary, Farringdon - Passive Monitoring Sites

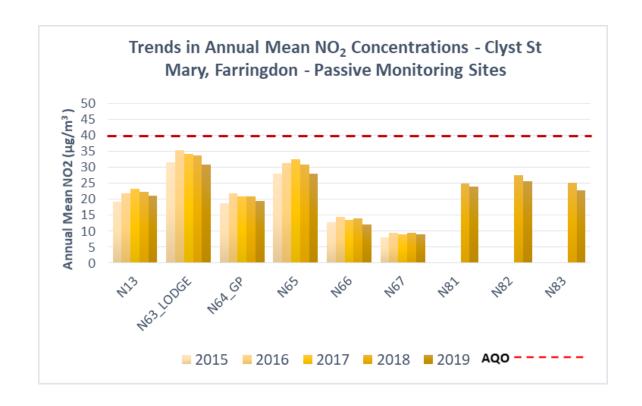


Figure A.7 - Trends in Annual Mean NO₂ Concentrations - Axminster - Passive Monitoring Sites

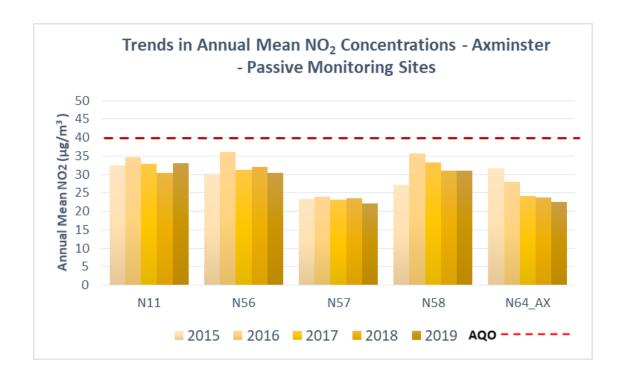


Figure A.8 - Trends in Annual Mean NO₂ Concentrations - Seaton, Ottery - Passive Monitoring Sites

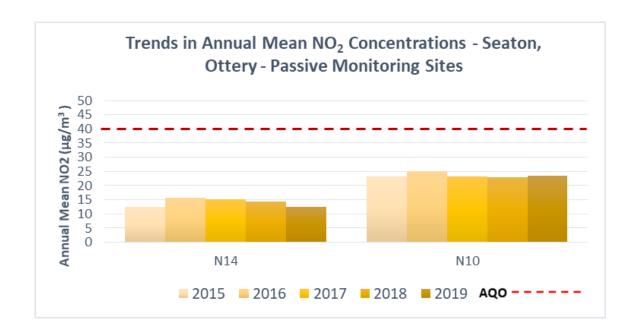


Figure A.9 - Trends in Annual Mean NO₂ Concentrations - Honiton West - Passive Monitoring Sites

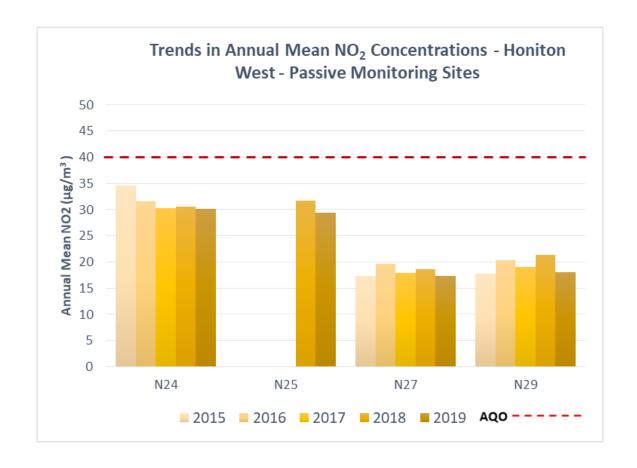


Figure A.10 - Trends in Annual Mean NO₂ Concentrations - Honiton Central & East - Passive Monitoring Sites

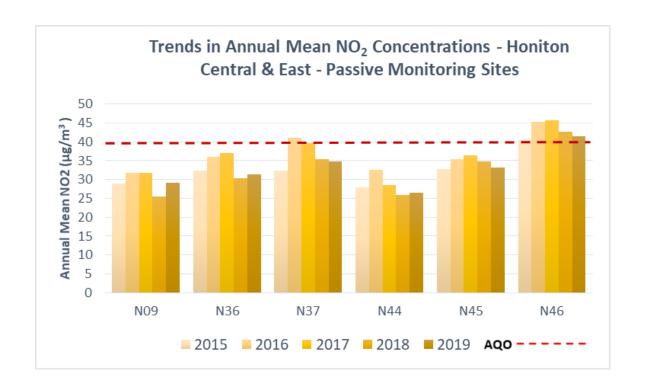


Figure A.11 - Trends in Annual Mean NO₂ Concentrations - Wilmington- Passive Monitoring Sites

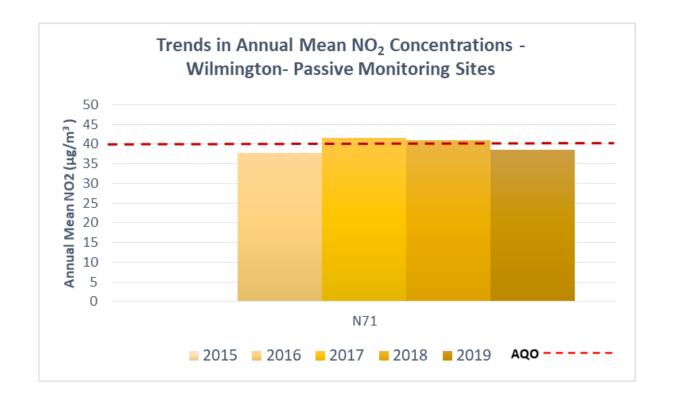


Table A.4 – 1-Hour Mean NO₂ Monitoring Results

| Site ID | X OS Grid Ref | Y OS Grid Ref | Site Type | Monitoring | Valid Data Capture for | Valid Data Capture | | NO ₂ 1-Hour Means > 200μg/m³ ⁽³⁾ | | | | | | |
|------------------------------------|------------------|------------------|---------------------|------------|---|--------------------------|------|--|------|------|------|--|--|--|
| Site iD | (Easting) | (Northing) | | Type | Monitoring Period (%) ⁽¹⁾ | 2019 (%) | 2015 | 2016 | 2017 | 2018 | 2019 | | | |
| Honiton AURN (Dove Close) | 315749 | 99874 | Urban Background | Automatic | 99.5% | 99.5% | 0 | 0 | 0 | 0 | 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.

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO₂ Monthly Diffusion Tube Results – 2019

| | | | | NO₂ Mean Concentrations (μg/m³) | | | | | | | | | | | | | |
|----------|-----------------------|-------------------|------|---------------------------------|------|------|------|------|------|------|------|------|------|------|-------------|--|---|
| | x os | Y OS Grid | | | | | | | | | | | | | | Annual Me | an |
| Site ID | Grid Ref (Easting) | Ref (Northing) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.91) and Annualised | Distance Corrected to Nearest Exposure |
| Exmouth | , Exton, Lym | npstone | | | | | | | | | | | | | | | |
| N01 | 300267 | 81193 | 29.3 | 23.9 | 17.8 | 22.8 | 18.7 | 19.8 | 18.1 | 16.9 | 17.5 | 22.5 | 24.0 | 21.7 | 21.1 | 19.2 | |
| N02 | 302163 | 81724 | 29.3 | 19.4 | 16.5 | 14.0 | 16.2 | 16.4 | 14.1 | 16.6 | 15.0 | 21.7 | 23.4 | 20.3 | 18.6 | 16.9 | |
| N03 | 301386 | 81518 | 15.7 | 13.7 | 7.4 | 11.5 | 8.1 | 7.1 | 6.6 | 6.4 | 6.5 | 9.9 | 12.9 | 10.4 | 9.7 | 8.8 | |
| N07 | 300087 | 80955 | 28.4 | 25.2 | 20.5 | 27.4 | 21.9 | 21.4 | 23.5 | 20.6 | 22.2 | 25.1 | 23.5 | 20.8 | 23.4 | 21.3 | |
| N73 | 300294 | 83265 | 37.5 | 34.2 | 34.8 | 36.7 | 32.3 | 28.3 | 28.7 | 26.1 | 28.3 | 35.7 | 37.8 | 31.9 | 32.7 | 29.8 | |
| N74 | 299931 | 84157 | 36.0 | 35.7 | 28.2 | 28.2 | 26.5 | 24.4 | 26.3 | 27.0 | 26.5 | 27.7 | 26.3 | 28.7 | 28.5 | 25.9 | |
| N75 | 298425 | 86472 | 45.5 | 42.3 | 39.0 | 35.4 | 36.9 | 37.3 | 35.4 | 39.7 | 35.8 | 37.3 | 36.1 | 33.8 | 37.9 | 34.5 | |
| Newton | Pop, Sidford | Sidmouth | | | | | | | | | | | | | | | |
| N16 | 312665 | 87432 | 19.2 | 16.3 | 14.0 | 14.1 | 11.4 | 11.1 | 10.3 | 8.8 | 10.4 | 13.8 | 16.7 | 14.3 | 13.4 | 12.2 | |
| N19 | 313403 | 90074 | 22.4 | 26.5 | 23.0 | 19.5 | 18.6 | 17.7 | 18.1 | 19.5 | 19.3 | 22.5 | 23.6 | 20.6 | 20.9 | 19.0 | |
| N72 | 308004 | 89533 | 24.0 | 24.7 | 20.5 | 18.8 | 17.9 | 16.9 | 16.2 | 20.3 | 19.8 | 20.3 | 22.8 | 21.8 | 20.3 | 18.5 | |
| N84 | 308632 | 89742 | | 27.7 | 23.2 | 20.8 | 20.1 | 18.8 | 17.5 | 16.8 | 20.2 | 24.2 | 22.5 | 21.9 | 21.2 | 19.3 | |
| Clyst St | George | | | | | | | | | | | | | | | | |
| N06 | 298062 | 88425 | 37.5 | 28.7 | 36.2 | 29.3 | 31.6 | 28.5 | 27.0 | 25.2 | 29.5 | 33.8 | 35.8 | 30.2 | 31.1 | 28.3 | |

| | | | NO₂ Mean Concentrations (μg/m³) | | | | | | | | | | | | | | |
|--------------------|-----------------------|-------------------|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|-------------|--|---|
| | x os | Y OS Grid | | | | | | | | | | | | | | Annual Mea | an |
| Site ID | Grid Ref (Easting) | Ref (Northing) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.91) and Annualised | Distance Corrected to Nearest Exposure |
| N59 | 298083 | 88337 | 47.0 | 46.2 | 36.1 | 38.5 | 47.0 | 42.6 | 45.4 | 40.7 | 38.9 | 43.3 | 42.2 | 39.6 | 42.3 | 38.5 | 17.8 |
| N68 | 298079 | 88521 | 35.0 | 33.6 | 31.9 | 38.3 | 30.1 | 30.0 | 30.0 | 28.1 | 27.8 | 30.5 | 30.5 | 27.6 | 31.1 | 28.3 | |
| N63_EB | 298088 | 88161 | 44.9 | 36.1 | 39.7 | 37.2 | 30.9 | 32.0 | 27.7 | 27.6 | 30.5 | 36.3 | 35.9 | 38.5 | 34.8 | 31.6 | |
| N80 | 297941 | 89437 | 29.8 | 27.5 | 20.4 | 18.6 | 16.6 | 16.1 | 20.0 | 20.1 | 17.0 | 22.3 | 23.1 | 25.0 | 21.4 | 19.5 | |
| East of E | xeter - Bear | e, Broadclyst | | | | | | | | | | | | | | | |
| N26 | 299102 | 93198 | 25.5 | 24.7 | 19.8 | 20.4 | | 17.2 | 17.1 | 18.0 | 18.5 | 20.0 | 24.1 | 22.4 | 20.7 | 18.8 | |
| N60 | 297029 | 93140 | 52.3 | 34.1 | 34.5 | 28.1 | 31.6 | 34.3 | 28.7 | 32.2 | 30.4 | 39.0 | 38.8 | 33.3 | 34.8 | 31.7 | |
| N61 ⁽³⁾ | 297018 | 93139 | 45.2 | | | | | | | | | | | | - | - | |
| N20 | 300345 | 94860 | 18.3 | 22.7 | 14.6 | 12.8 | 12.6 | 10.8 | 11.3 | 11.8 | 12.6 | 14.5 | 17.6 | 15.4 | 14.6 | 13.3 | |
| N21 | 299605 | 95350 | 10.3 | 12.9 | 6.9 | 7.7 | 7.6 | 6.1 | 6.2 | | 6.5 | 9.5 | 10.9 | 10.4 | 8.6 | 7.9 | |
| N22 | 301876 | 95558 | 16.4 | 15.5 | 10.4 | 9.8 | 8.6 | 8.5 | 7.3 | 9.1 | 10.4 | 13.6 | 13.7 | 12.6 | 11.3 | 10.3 | |
| N76 | 300283 | 95200 | | 15.4 | 10.9 | 11.6 | 9.5 | 9.1 | 9.2 | 9.6 | 11.0 | 16.3 | 16.8 | 15.8 | 12.3 | 11.2 | |
| N77 | 301228 | 95665 | 15.8 | 19.8 | 10.0 | 13.3 | 9.5 | 7.6 | | 9.3 | 11.4 | 14.7 | | 16.6 | 12.8 | 11.7 | |
| N78 | 299763 | 102177 | 36.7 | 33.9 | 21.2 | 25.0 | 16.7 | 17.3 | 15.7 | 16.4 | 15.0 | 21.5 | 33.6 | 28.2 | 23.4 | 21.3 | |
| Clyst St I | Mary, Farring | gdon | | | | | | | | | | | | | | | |
| N13 | 297314 | 91056 | 28.5 | 31.3 | 25.8 | 19.3 | 20.8 | 17.3 | 21.1 | 20.8 | 19.7 | 22.6 | 24.7 | 28.0 | 23.3 | 21.2 | |
| N63_LO DGE | 297633 | 90927 | 48.1 | 40.6 | 38.5 | 36.2 | 31.7 | 30.3 | 27.4 | 23.6 | 26.5 | 36.3 | 40.1 | 28.5 | 34.0 | 30.9 | |
| N64_G P | 300259 | 90712 | 32.1 | 18.3 | 22.1 | 22.1 | 22.1 | 22.1 | 18.3 | 19.3 | 19.9 | 21.0 | 24.0 | 17.1 | 21.5 | 19.6 | |

| | | | NO₂ Mean Concentrations (μg/m³) | | | | | | | | | | | | | | |
|-----------|-----------------------|-------------------|---------------------------------|----------|------|------|------|------|------|------|------|------|------|------|-------------|--|---|
| | x os | Y OS Grid | | | | | | | | | | | | | | Annual Mea | an |
| Site ID | Grid Ref (Easting) | Ref (Northing) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.91) and Annualised | Distance Corrected to Nearest Exposure |
| N65 | 300735 | 90555 | 33.5 | 33.6 | 28.6 | 37.1 | 31.9 | 21.7 | 32.2 | 32.0 | 25.7 | 30.6 | 32.6 | 30.4 | 30.8 | 28.0 | |
| N66 | 302491 | 90461 | 14.7 | 13.0 | 13.2 | 14.0 | 12.7 | 12.5 | 11.0 | 11.2 | 11.9 | 15.0 | 17.9 | 12.3 | 13.3 | 12.1 | |
| N67 | 302420 | 90750 | 14.0 | 13.8 | 9.5 | 11.9 | 8.9 | 7.1 | 7.6 | 7.1 | 7.4 | 8.8 | 12.0 | 9.8 | 9.8 | 8.9 | |
| N81 | 297327 | 90998 | 29.8 | 40.2 | 28.2 | 25.9 | 23.6 | 20.7 | 25.0 | 21.8 | 25.2 | 20.3 | 27.8 | 29.5 | 26.5 | 24.1 | |
| N82 | 298923 | 90859 | 39.0 | 39.7 | 29.0 | 30.2 | 21.3 | 25.1 | 24.6 | 26.1 | 24.5 | 26.7 | 25.8 | 28.0 | 28.3 | 25.8 | |
| N83 | 299997 | 90722 | 28.8 | 30.7 | 24.4 | 26.5 | 25.6 | 21.3 | 23.7 | 17.3 | 22.2 | 25.0 | 28.2 | 27.9 | 25.1 | 22.9 | |
| Axminste | er | | | | | | | | | | | | | | | | |
| N11 | 329584 | 98464 | 41.8 | 36.8 | 38.0 | 33.7 | 35.1 | 36.1 | 38.0 | 33.9 | 35.9 | 34.9 | 37.3 | 33.4 | 36.2 | 33.0 | |
| N56 | 329680 | 98550 | 44.2 | 34.4 | 39.2 | 34.8 | 32.0 | 33.5 | 32.4 | 26.8 | 30.9 | 32.6 | 32.4 | 27.0 | 33.3 | 30.3 | |
| N57 | 329765 | 98554 | 32.4 | 26.4 | 25.8 | 23.4 | 22.5 | 20.5 | 22.3 | 21.8 | 21.5 | 24.1 | 28.2 | 23.6 | 24.4 | 22.2 | |
| N58 | 329789 | 98613 | 37.5 | 35.2 | 38.5 | 36.6 | 34.7 | 34.9 | 32.2 | 30.2 | 29.0 | 34.8 | 34.9 | 31.1 | 34.1 | 31.1 | |
| N64_AX | 329743 | 98589 | 33.0 | 28.7 | 24.8 | 31.3 | 20.6 | 25.2 | 19.0 | 17.3 | 21.4 | 26.4 | 27.9 | 20.1 | 24.7 | 22.4 | |
| Ottery, S | eaton | | | | | | | | | | | | | | | | |
| N10 | 309882 | 95449 | 26.9 | 31.3 | 27.9 | 25.7 | 23.3 | 22.9 | 21.8 | 21.9 | 23.7 | 25.5 | 29.0 | 28.7 | 25.7 | 23.4 | |
| N14 | 324479 | 89930 | 19.0 | 16.3 | 13.5 | 13.2 | 11.4 | 12.8 | 11.7 | 11.0 | 10.7 | 14.6 | 16.7 | 12.0 | 13.6 | 12.4 | |
| Honiton - | CENTRAL | & EAST HONI | TON (H | igh Stre | et) | ı | ī | | 1 | 1 | | | | | _ | | |
| N09 | 316062 | 100596 | 40.3 | 36.4 | 37.7 | 31.8 | 33.5 | | 29.0 | 27.5 | 23.3 | 28.0 | 32.2 | 33.5 | 32.1 | 29.2 | |
| N36 | 316012 | 100653 | 41.5 | 42.0 | 40.4 | 30.2 | 29.7 | 28.9 | 32.3 | 36.7 | 30.7 | 35.0 | 33.7 | 32.8 | 34.5 | 31.4 | |
| N37 | 316102 | 100607 | 50.1 | 40.7 | 47.4 | 38.2 | 36.5 | 39.1 | 38.5 | 35.8 | 27.9 | 39.7 | 36.7 | 27.3 | 38.2 | 34.7 | |

| | | | | | | | | | NO ₂ M | ean Cor | ncentrat | tions (μ | NO₂ Mean Concentrations (μg/m³) | | | | | | | | | | | | | | |
|-----------|-----------------------|-------------------|---------|------|------|------|------|------|-------------------|---------|----------|----------|---------------------------------|------|-------------|--|---|--|--|--|--|--|--|--|--|--|--|
| | x os | Y OS Grid | | | | | | | | | | | | | | Annual Me | an | | | | | | | | | | |
| Site ID | Grid Ref (Easting) | Ref (Northing) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.91) and Annualised | Distance Corrected to Nearest Exposure | | | | | | | | | | |
| N44 | 316629 | 100837 | 35.0 | 34.2 | 29.2 | 27.7 | 26.3 | 24.6 | 24.7 | 28.6 | 25.5 | 30.7 | 33.1 | 29.2 | 29.1 | 26.4 | | | | | | | | | | | |
| N45 | 316816 | 100934 | 44.2 | 43.6 | 36.1 | 33.6 | 37.2 | 31.6 | 35.4 | 34.1 | 35.3 | 35.8 | 36.9 | 33.0 | 36.4 | 33.1 | | | | | | | | | | | |
| N46 | 316796 | 100856 | 41.6 | 46.6 | 44.6 | 41.1 | 46.5 | | 49.7 | 54.1 | 43.4 | 44.6 | 45.1 | 44.3 | 45.6 | 41.5 | 20.1 | | | | | | | | | | |
| Honiton - | - West (Near | Turks Head J | unction | 1) | | | | | | | | | | | | | | | | | | | | | | | |
| N24 | 315097 | 100182 | 35.2 | 36.8 | 31.1 | 34.0 | 35.8 | 33.9 | 30.9 | 29.8 | 27.0 | 32.8 | 37.6 | 32.0 | 33.1 | 30.1 | | | | | | | | | | | |
| N25 | 315087 | 100165 | 41.9 | 36.1 | 35.7 | 30.9 | 29.7 | 31.7 | 28.0 | 30.5 | 29.9 | 27.0 | 34.0 | 31.9 | 32.3 | 29.4 | | | | | | | | | | | |
| N27 | 314875 | 100097 | 24.2 | 23.0 | 19.4 | 17.5 | 17.4 | 15.9 | 16.9 | 18.0 | 17.2 | 16.3 | 22.6 | 20.1 | 19.0 | 17.3 | | | | | | | | | | | |
| N29 | 315114 | 100201 | 23.8 | 23.0 | 17.9 | 21.2 | 19.2 | 17.9 | 16.7 | 16.4 | 16.2 | 20.0 | 24.2 | 21.2 | 19.8 | 18.0 | | | | | | | | | | | |
| DEFRA A | URN SITE - | HONITON, DO | VE CL | OSE | | | | | | | | | | | | | | | | | | | | | | | |
| N62a | 315745 | 99875 | 10.8 | 10.8 | 8.4 | 8.0 | 7.6 | 6.7 | 6.7 | 7.8 | 6.9 | 10.2 | 13.1 | 6.4 | | | | | | | | | | | | | |
| N62b | 315745 | 99875 | 15.9 | 12.2 | 9.3 | 8.5 | 8.4 | 7.0 | 7.6 | 8.2 | 7.8 | 5.9 | 11.8 | 8.8 | 8.9 | 8.1 | | | | | | | | | | | |
| N62c | 315745 | 99875 | 13.7 | 12.1 | 9.3 | 8.8 | | 7.0 | 6.4 | 7.1 | 7.7 | 9.9 | 7.5 | 8.4 | | | | | | | | | | | | | |
| Wilmingt | on | | | | | _ | | | _ | _ | | | | | | | | | | | | | | | | | |
| N71 | 321135 | 99875 | 48.5 | 49.9 | 39.9 | 44.6 | 41.5 | 37.8 | 44.7 | 39.9 | 40.0 | 41.3 | 41.2 | 39.3 | 42.4 | 38.6 | 36.6 | | | | | | | | | | |

Key: TUBE MISSING SITE DECOMMISSIONED ERRONEOUS DATA

☑ Local bias adjustment factor used

☑ Where applicable, data has been distance corrected for relevant exposure in the final column

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) See Appendix C for details on bias adjustment and annualisation.
- (2) Distance corrected to nearest relevant public exposure.
- (3) Site N61 was decommissioned from February 2019

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

QA/QC of automatic monitoring

The Honiton automatic monitoring site is calibrated by the Local Site Operator (LSO). The QA/QC of the site is undertaken through its status as part of the AURN and therefore conforms to AURN standards (undertaken by Ricardo-Energy and Environment).

QA/QC of diffusion tube monitoring

Gradko International Ltd is a UKAS accredited laboratory and participates in laboratory performance and proficiency testing schemes. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. The laboratory follows the procedures set out in the Harmonisation Practical Guidance and participates in the AIR proficiency-testing (AIR-PT) scheme. Defra and the Devolved Administrations advise that diffusion tubes used for LAQM should be obtained from laboratories that have demonstrated satisfactory performance in the AIR-PT scheme. Laboratory performance in the AIR-PT is also assessed by the National Physical Laboratory (NPL), alongside laboratory data from the monthly NPL Field Inter-Comparison Exercise.

In the 2019 AIR-PT results, AIR-PT AR030 (January to February 2019), AIR-PT AR031 (April to May 2019), AR033 (July to August 2019) and AR034 (September to November 2019), Gradko scored an average of 97% across all periods. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ±2.

Diffusion Tube Bias Adjustment

The national bias adjustment factor for Gradko in 2019, consisting of 30 co-location studies as summarised in the national bias adjustment spreadsheet (v06/20), is 0.92 and is presented in Figure C.1.

Figure C.1 – National Bias Adjustment 2019

| Follow the steps below in the correct ord Data only apply to tubes exposed monthly a Whenever presenting adjusted data, you sh This spreadhseet will be updated every few | nd are not suitable f ould state the adjust | or correcting i | ndividu sed an | ual short-term monitoring periods d the version of the spreadsheet | ourage thei | r immediate use | t a | up | spreadshe dated at the September | end of |
|--|--|---|-------------------|---|------------------------------------|---|-------------------------------|-------------|--|------------------------------|
| The LAQM Helpdesk is operated on behalf of C contract partners AECOM and the National Ph | | d Administratio | ns by E | Bureau Veritas, in conjunction with | | eet maintained l | | Physica | Laborator | y. Original |
| Step 1: | Step 2: | Step 3: | | | S | step 4: | | | | |
| Select a Select a Select a Verification the Laboratory that Analyses Your Tubes from the Drop-Down List Doop-Down List Doop-Down List Drop-Down List Drop-Do | | | | | | | | | | |
| 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 | lf : | you have your own co-location study then Management Helpdesk at | | | eritas.com or 08 | | | |
| Analysed By | Method Tantanan della, dans Malijiran la, papa lisi | Year | Site Typ e | Local Authority | Length of Study (months) | Diffusion Tube Mean Conc. (Dm) (µg/m³) | Monitor Mean Conc. (Cm) | Bias (B) | Tube Precisio n | Adjustme nt Factor (A) |
| Gradko | 20% TEA in water | 2019 | B | Blackburn with darwen Borough Council | 10 | 29 | 21 | 36.9% | G | 0.73 |
| Gradko | 20% TEA in water | 2019 | B | Cheshire West and Chester | 12 | 39 | 38 | 2.0% | G | 0.98 |
| Gradko | 20% TEA in water | 2019 | R | Cheshire West and Chester | 11 | 34 | 34 | -2.1% | G | 1.02 |
| Gradko | 20% TEA in water | 2019 | B | Gedling Borough Council | 12 | 32 | 30 | 7.3% | G | 0.93 |
| Gradko | 20% TEA in water | 2019 | B | NOTTINGHAM CITY COUNCIL | 10 | 37 | 40 | -7.0% | G | 1.07 |
| Gradko | 20% TEA in water | 2019 | B | Bedford Borough Council | - 11 | 29 | 29 | -1.0% | G | 1.01 |
| Gradko | 20% TEA in water | 2019 | R | Bedford Borough Council | 12 | 37 | 32 | 13.0% | G | 0.89 |
| Gradko | 20% TEA in water | 2019 | KS | Marylebone Road Intercomparison | 12 | 85 | 65 | 30.1% | G | 0.77 |
| Gradko | 20% TEA in water | 2019 | B | Borough Council of King's Lynn and West No | 9 | 27 | 21 | 28.4% | G | 0.78 |
| Gradko | 20% TEA in water | 2019 | B | Lancaster City Council | 13 | 40 | 34 | 16.4% | G | 0.86 |
| Gradko | 20% TEA in water | 2019 | B | Lancaster City Council | 12 | 31 | 31 | 1.6% | G | 0.98 |
| Gradko | 20% TEA in Water | 2019 | B | Monmouthshire County Council | 12 | 39 | 39 | 1.3% | G | 0.99 |
| Gradko | 20% TEA in water | 2019 | B | Dudley MBC | 12 | 33 | 32 | 4.5% | G | 0.96 |
| Gradko | 20% TEA in water | 2019 | B | Dudley MBC | 12 | 44 | 42 | 3.9% | G | 0.96 |
| Gradko | 20% TEA in water | 2019 | UB | Dudley MBC | 12 | 23 | 19 | 19.8% | G | 0.83 |
| Gradko | 20% TEA in water | 2019 | UB | Eastleigh Borough Council | 12 | 24 | 26 | -7.1% | G | 1.08 |
| Gradko | 20% TEA in water | 2019 | B | Gateshead Council | 12 | 34 | 27 | 23.7% | P | 0.81 |
| Gradko | 20% TEA in water | 2019 | B | Gateshead Council | 11 | 40 | 44 | -10.5% | G | 1.12 |
| Gradko | 20% TEA in water | 2019 | R | Gateshead Council | 10 | 32 | 34 | -7.2% | G | 1.08 |
| Gradko | 20% TEA in water | 2019 | B | Gateshead Council | 12 | 30 | 25 | 18.1% | G | 0.85 |
| Gradko | 20% TEA in water | 2019 | R | Thurrock Borough Council | 12 | 29 | 24 | 21.6% | G | 0.82 |
| Gradko | 20% TEA in water | 2019 | B | Brighton & Hove City Council | - 11 | 45 | 46 | -1.3% | G | 1.01 |
| Gradko | 20% TEA in water | 2019 | R | Belfast City Council | 12 | 40 | 33 | 21.0% | G | 0.83 |
| Gradko | 20% TEA in water | 2019 | R | Belfast City Council | 12 | 44 | 45 | -2.2% | G | 1.02 |
| Gradko | 20% TEA in water | 2019 | R | Belfast City Council | 12 | 28 | 26 | 5.4% | G | 0.95 |
| Gradko | 20% TEA in water | 2019 | UB | Southampton City Council | 12 | 30 | 28 | 8.6% | G | 0.92 |
| Gradko | 20% TEA in water | 2019 | UB | Liverpool City Council | 12 | 20 | 19 | 1.7% | G | 0.98 |
| Gradko Gradko | 20% TEA in water | 2019 | R | Ards and North Down Borough Council | 12 | 33 | 25 | 31.1% | G | 0.76 |
| | 20% TEA in water | 2019 | B | Eastleigh Borough Council | 12 | 25 | 26 | -3.3% | G | 1.03 |
| Gradko | 20% TEA in water | 2019 | B | Lisburn & Castlereagh City Council | 12 | 28 | 22 | 28.3% | G | 0.78 |

A bias adjustment factor of 0.91 is also calculated from the co-location study at the AURN automatic monitoring site located in Honiton, as shown in Figure C.2. The QC of the local adjustment factor concludes a 'good overall' survey and tube precision.

The local bias adjustment factor (0.91) has been applied to adjust the Council's data accordingly in 2019. Justification for the choice of the local adjustment is supported by both its consistency with the 2019 national factor and that the use of the local adjustment is primarily recommended where it is available, within TG(16)¹⁹, due to it being more accurately representative of the local conditions than the national adjustment. As reported in previous years' LAQM reports, a local adjustment was applied to the Council's 2011-2015 monitoring data with the national factor applied 2016-2018 due to local factors during these periods providing an unseasonably low local adjustment figure in comparison to the Council's previous local adjustments and the national factor of the same periods. A summary of adjustment factors used over the last 5 years is presented in Table C.1.

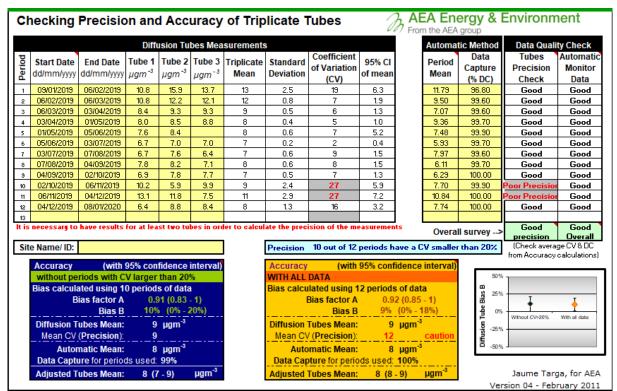


Figure C.2 – Honiton, Dove Close Local Bias Adjustment 2019

Table C.1 - Bias Adjustment factors 2015-2019

| Monitoring Year | Bias Adjustment Factor Used | Adjustment Factor |
|-----------------|-----------------------------|-------------------|
| 2019 | Local Bias | 0.91 |
| 2018 | National Bias | 0.92 |
| 2017 | National Bias | 0.87 |
| 2016 | National Bias | 0.92 |
| 2015 | Local Bias | 0.87 |

Short to Long term data adjustment; Annualisation

Monitoring site N61 was decommissioned from February 2019 and therefore reported below the sufficient 3 month data capture to allow for annualisation to take place (1 month data provided only). In 2019 no other monitoring locations fell below 75% data capture, so East Devon District Council did not require annualisation at any of the 2019 diffusion tube locations.

NO₂ Fall-off with Distance Correction

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure should be estimated, using the NO₂ fall-off with distance calculator available on the LAQM Support website.⁴

The fall-off with distance correction calculation has been undertaken for three locations in 2019, where the monitoring site is not currently representative of relevant exposure and the monitored concentrations are greater than 36µg/m³.

Figure C.3 presents the NO₂ distance correction calculations for 2019. The 2019 background concentrations are derived from the 2017-based Defra background maps²².

It is noted that both N46 and N59 monitoring locations are not presently located in close proximity to a sensitive receptor, therefore both calculations must be treated with caution as there may be a possibility that the nearest receptor is also impacted by other sources. Location N71 is in a location of exceptionally low background NO₂, however the fall off with distance calculation continues to be effective for this monitoring location.

Figure C.3 - Fall off with Distance Correction

| | Distar | ice (m) | NO₂ Annual | Mean Concent | ration (µg/m³) | |
|--------------|----------------------------|---------------------|------------|----------------------|--------------------------|---|
| Site Name/ID | Monitoring Site to Kerb | Receptor to Kerb | Background | Monitored at Site | Predicted at Receptor | Comment |
| N46 | 1.0 | 20.8 | 6.5 | 41.5 | 20.1 | Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution. |
| N59 | 1.2 | 27.2 | 6.8 | 38.5 | 17.8 | Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution. |
| N71 | 2.7 | 3.4 | 4.3 | 38.6 | 36.6 | Predicted concentration at Receptor within 10% the AQS objective. Warning: Background NO2 concentrations <5µg/m3 or >50µg/m3 are rare in the UK - this calculation will still work, but please check your data. |

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 $^{^{22}\, \}text{DEFRA Background Maps;} \, \underline{\text{https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html}}$

Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 - 2019 NO₂ Monitoring Locations - Exmouth, Exton and Lympstone

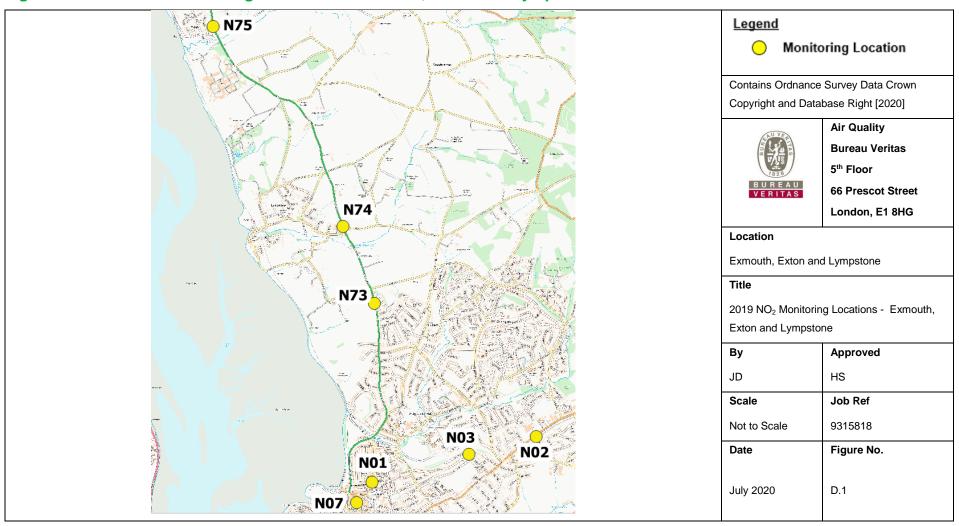


Figure D.2 - 2019 NO₂ Monitoring Locations - Newton Pop, Sidford. Sidmouth



Figure D.3 - 2019 NO₂ Monitoring Locations - Clyst St George

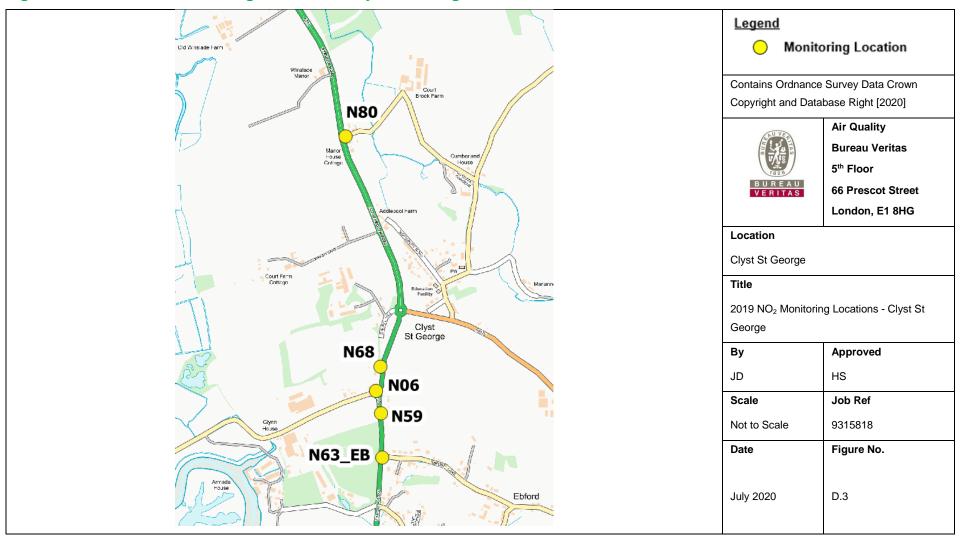


Figure D.4 - 2019 NO₂ Monitoring Locations – East of Exeter, Beare, Broadclyst

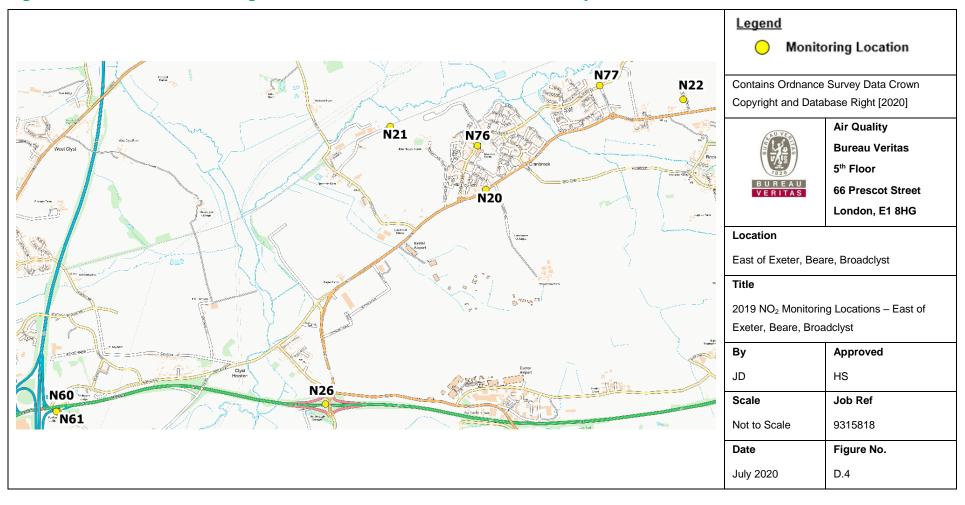


Figure D.5 - 2019 NO₂ Monitoring Locations - Clyst St Mary, Farringdon

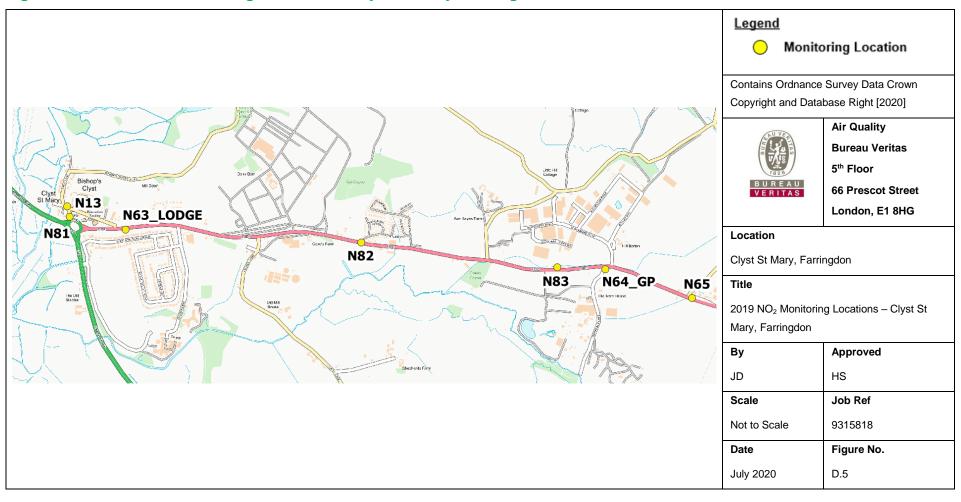


Figure D.6 - 2019 NO₂ Monitoring Locations - Axminster

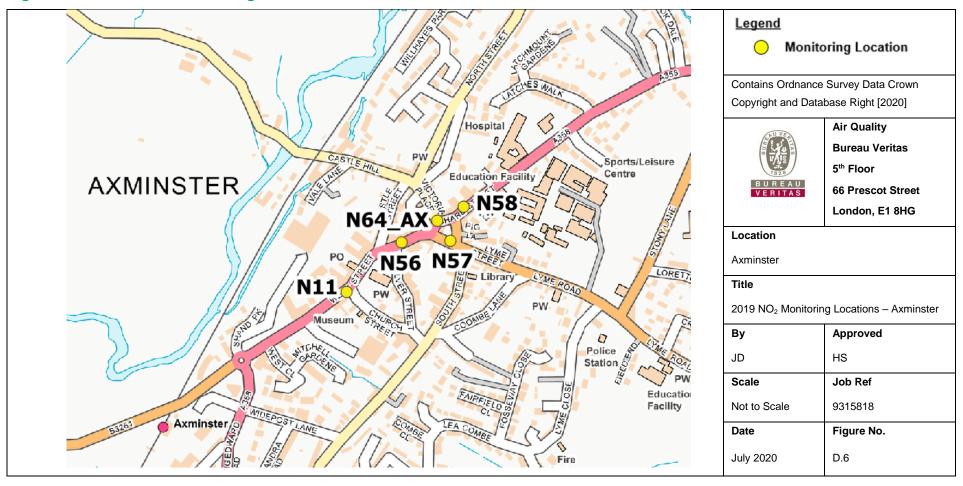


Figure D.7 - 2019 NO₂ Monitoring Locations – Seaton

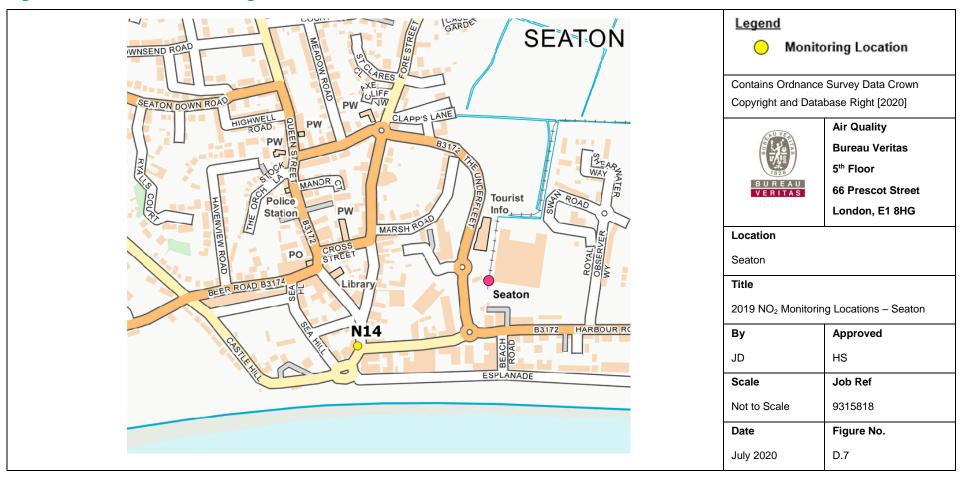


Figure D.8 - 2019 NO₂ Monitoring Locations - Ottery

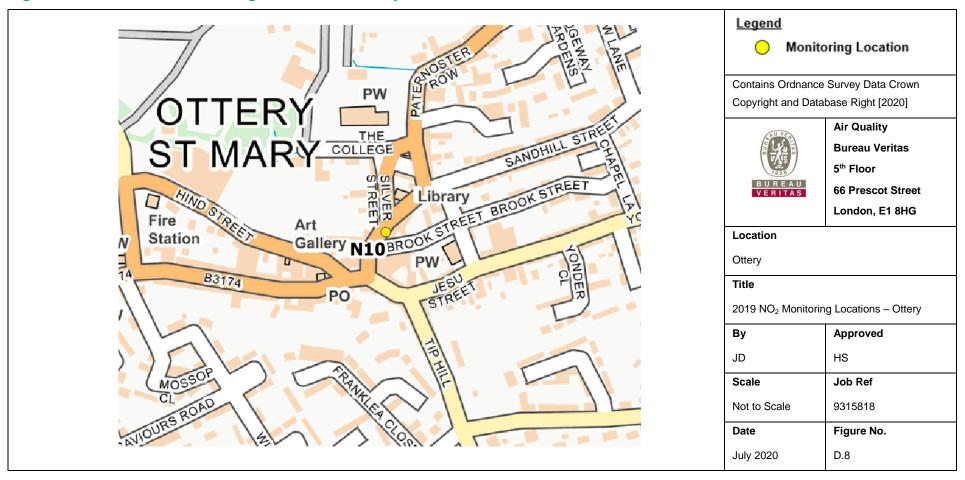


Figure D.9 - 2019 NO₂ Monitoring Locations - Honiton

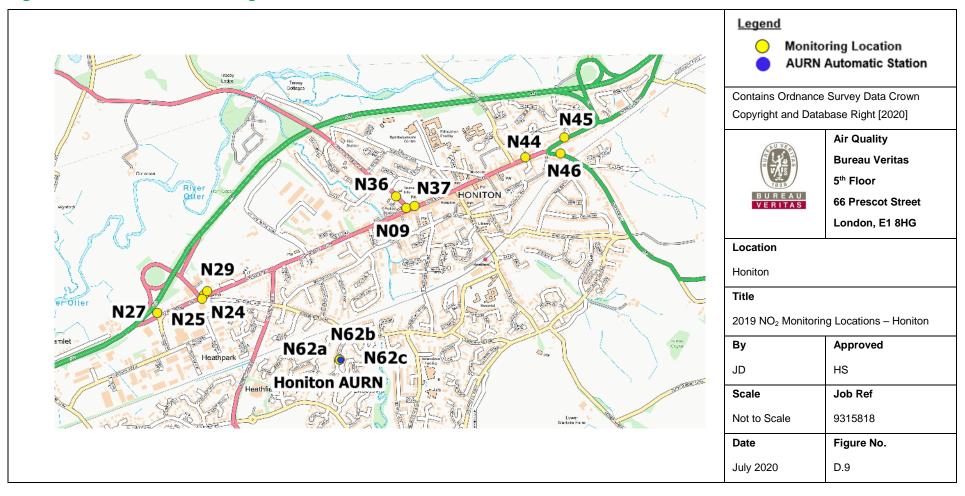
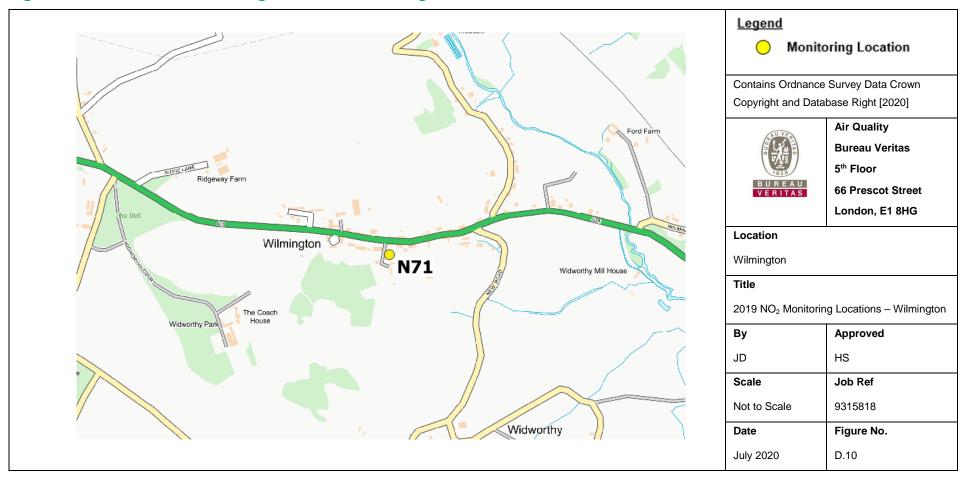


Figure D.10 - 2019 NO₂ Monitoring Locations - Wilmington



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

| Pollutant | Air Quality Objective ²³ | 3 |
|------------------------------------|---|----------------|
| Pollutant | Concentration | Measured as |
| Nitrogen Dioxide | 200 µg/m³ not to be exceeded more than 18 times a year | 1-hour mean |
| (NO ₂) | 40 μg/m ³ | Annual mean |
| Particulate Matter | 50 μg/m³, not to be exceeded more than 35 times a year | 24-hour mean |
| (PM ₁₀) | 40 μg/m ³ | Annual mean |
| | 350 µg/m³, not to be exceeded more than 24 times a year | 1-hour mean |
| Sulphur Dioxide (SO ₂) | 125 µg/m³, not to be exceeded more than 3 times a year | 24-hour mean |
| | 266 µg/m³, not to be exceeded more than 35 times a year | 15-minute mean |

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 $^{^{23}}$ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Zephyr® PM_{2.5} Monitoring

Table F.1 - 2019 PM_{2.5} Concentrations

| Site ID | Site Location | X | Y | Data Capture | 2019 Annual PM _{2.5} Concentration (µg/m³) |
|------------|---|--------|--------|--------------|--|
| 43 | Dove Close, Honiton | 315745 | 099880 | 98.6% | 6.8 |
| 50 | Near roundabout of A376 and A3052, Clyst St Mary | 297342 | 091007 | 86.3% | 6.3 |
| 55 | A378, Ebford | 298085 | 088569 | 77.5% | 7.0 |
| 56* | A3053, Clyst St Mary | 297624 | 090947 | 51.2% | 8.2 |
| 395** | A3053, Clyst St Mary | 297624 | 090947 | 23.3% | 10.3 |

^{* -} Monitoring ceased 02/10/2019 ** - Monitoring began 16/10/2019

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 |
| SO ₂ | Sulphur Dioxide |
| AURN | Automatic Urban and Rural Network |
| LSO | Local Site Operator |

References

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- Local Air Quality Management Policy Guidance LAQM.PG(16). May 2016.
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- NO₂ Fall off With Distance Tool, available at http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html
- National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 06/20 published in June 2020.
- AIR-PT-Rounds 30 to 34 (Jan 2019 Nov 2019)
- Public Health Outcomes Framework, Public Health England https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000009/ati/101/are/E07000040/iid/30101/age/230/sex/4/cid/4/page-options/car-do-0
- East Devon District Council ASR 2019
- East Devon District Council ASR 2017-18
- Honiton Detailed Assessment Report 2017 https://eastdevon.gov.uk/media/2266676/honiton-detailed-assessment-as-part-of-asr-defra-approved.pdf
- Devon Wide Personal Exposure Reduction Project Report https://committees.exeter.gov.uk/documents/s52642/AirQualityMonitoringRep ort.pdf
- The Devon Low-Carbon Energy & Transport Technology Innovator (DELETTI)
 programme https://eastdevon.gov.uk/news/2019/10/electric-car-charge-points-to-be-installed-in-east-devon-car-parks/
- The Greater Exeter strategic plan project (GESP) https://www.gesp.org.uk/consultation-phases/stage-two-policy-and-options/