



2013 Air Quality Progress Report for Daventry District Council

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

December 2014

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Report Reference number	DAV/13/PR
Date	May 2013

Executive Summary

Daventry District Council has monitored NO₂ levels throughout the district for the year 2013.

Across the district there was generally a slight decrease in concentrations from 2012. There were increases in concentrations at four locations, including M1 kerbside (N12) and New Street, Daventry (N9). The higher level recorded at New Street, Daventry (24.54 µg/m³) was well below the 40 µg/m³ limit. Levels at Haythog Farm House, an isolated farmhouse which is the nearest residential property to the M1 were 24.90 µg/m³. Daventry District Council will continue to monitor this location closely as the levels are consistently amongst the highest recorded in the district.

A review of monitoring locations was carried out in 2013, resulting in seven NO₂ tubes being relocated from places where consistently low levels of NO₂ have historically been recorded. The monitoring locations were moved to relatively busy sites where traffic has increased (which will add to traffic and consequent pollution from vehicles) and sites where development is probable or planned in the coming years.

Four new NO₂ tubes were additionally located in the district to monitor air quality around significant proposed developments and planned changes to road networks.

A full review of national monitoring data suggests no need to monitor other pollutants and no further action is required other than continued monitoring.

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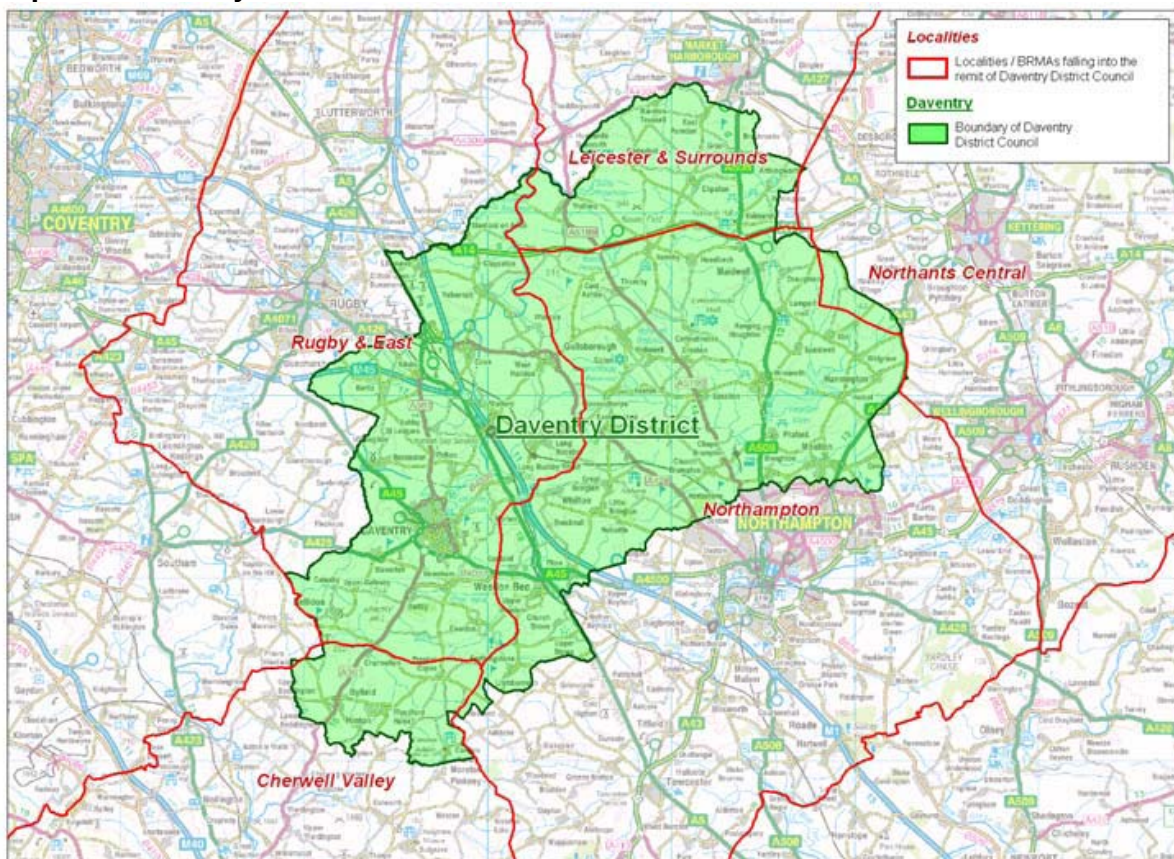
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1 Introduction

1.1 Description of Local Authority Area

Daventry District is a predominantly rural district with the larger and most northerly section occupying that part of the Northamptonshire Uplands lying to the east of the Watford Gap section of the M1 Motorway. This northern part of the district stretches from Northampton in the south to Market Harborough and the Leicestershire border in the north; from the Warwickshire town of Rugby in the west almost to Kettering and the A6 Towns in the east. A smaller part of the District is situated to the south west of the M1 Motorway, with its southernmost boundary coming to within 6 miles of the Oxfordshire border at Banbury.

Map 1.0 - Daventry District



The population of the District further to the 2011 census was estimated to number some 78,000 people. The administrative centre of the district is Daventry town itself, which is located within this southern area, some 8 miles from Junction 16 of the M1. The town has grown steadily since the early sixties, having been the subject of an

expansion scheme designed to cater for Birmingham people needing alternative housing accommodation.

The population of Daventry Town at mid 1996 was approximately 20,000. Daventry District Council is planning for Daventry Town to grow significantly in the next few years and to reach a population of around 40,000⁽¹⁾. The town is continuing to grow as an employment, shopping and recreational centre for the surrounding rural area, with a forecast that the population of the district will increase to 90,200 by 2031⁽¹⁾. The 'usually resident' population of Daventry District recorded in the 2011 census was 77,843⁽¹⁾.

Whilst the town has become well known as an ideal location for warehousing, not least as the home of Ford Motor Company's major distribution centre, it has gradually acquired a wide range of manufacturing and service industries, located on three industrial estates.

The district is home to a major distribution hub, the Daventry International Rail Freight Terminal (DIRFT), located to the North West of the district, close to the district boundary with Rugby. DIRFT is currently under expansion, with further growth predicted in the next few years.

The district lies within the Milton Keynes/South Midlands Growth Area.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedances are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

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

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

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1, overleaf. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m ³	Running annual mean	31.12.2003
	5.00 µg/m ³	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m ³	Annual mean	31.12.2004
	0.25 µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Between 1998 and 2000, Daventry District Council undertook its first round of review and assessments of air quality. The first round assessments concluded that pollutant concentrations were likely to meet the air quality objectives and it was not necessary for Daventry District Council to declare any AQMA's. The updating and screening assessment from 2003 concluded that some properties close to the M1 may exceed the objectives, however the monitoring data at locations close to the M1 was not representative of relevant exposure. It was agreed after discussion between Daventry District Council and DEFRA that there was no need to proceed to a detailed assessment for NO₂. The 2005 progress report also reported that monitored NO₂ concentrations in the vicinity of the M1 were exceeding the objectives; however these locations were again not representative of relevant exposure as the monitoring tubes were located virtually next to the hard shoulder and not near any potential public exposure.

The 2006 Updating and Screening Assessment undertaken by Bureau Veritas concluded that the air quality objectives for benzene, 1,3-butadiene, carbon monoxide, lead, PM10 and sulphur dioxide will be met and there would be no requirement to undertake a detailed assessment of these pollutants. The predicted annual mean NO₂ concentrations for a number of monitoring sites had indicated that the annual mean would be exceeded. However the road traffic contribution to the predicted pollutant concentrations reported was doubled to compensate for restricted dispersion of vehicle emissions in street canyons which was described in LAQM.TG(03) at the time. The circumstances for relevant exposure at the monitored locations is that the canyon effect contains the pollutants at the carriageway and actually minimises the effect upon those properties located at the top of a sizeable embankment as the M1 travels through a cutting. The DMRB model is not able to take such topography conditions into consideration in its calculations. Bureau Veritas concluded that a detailed assessment is required based upon the predicted annual mean NO₂ concentrations exceeding the objective in the vicinity of the M1 at Haythog Farm, Yelvertoft Road and Greenhill Farm. However Bureau Veritas concluded that a cautious approach be taken of the NO₂ results as the data is based

upon predictions with a street canyon effect and the monitored concentrations exceeding the AQS objective close to the M1, were not in the immediate vicinity of relevant receptors.

The 2009 Updating and Screening Assessment undertaken by Daventry District Council determined that the conclusions drawn in 2006 assessment remained current. There was no need for detailed assessments to be undertaken in any locations throughout the district and it was concluded that the Benzene monitoring cease.

The 2010 progress report identified that across the district there was a slight increase in concentrations from 2008, but were below or less than the peak levels identified in 2007. There were increases at High Street, Welford and New Street, Daventry above the 2007 peak level. Levels at Haythog Farmhouse in close proximity to the M1 were close to the threshold level but had remained at a fairly constant level for several years. There were no exceedances of the NO₂ threshold level.

The 2011 progress report identified no clear trends, with some slight increases in some locations and some slight decreases in other locations. Levels at Haythog Farmhouse were the lowest level recorded at this location.

An Updated Screening Assessment was carried out in 2012 by Daventry District Council and determined that the conclusions drawn in 2009 were still valid. There is no need for detailed assessment to be undertaken in any location in the district and Benzene monitoring does not need to re-commence.

The 2012 progress report identified no significant changes in air quality, although there was an almost equal split of minor upwards and downward trends throughout the district. Levels at Haythog Farmhouse will require close monitoring in future years as this is the most exposed residential location in the district consistently, although these remain below the thresholds currently.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Daventry District Council does not operate any continuous monitoring sites.

2.1.2 Non-Automatic Monitoring Sites

There is a local monitoring scheme for NO₂ using passive diffusion tubes. Details of the site locations for NO₂ monitoring are shown in table 2.2 below.

Within Daventry district, nitrogen dioxide has historically been measured using diffusion tubes at 22 sites across the area. Since the 2012 progress report, an additional 4 tubes have been added to the monitoring regime and the locations of existing tubes have been reassessed, causing some to be relocated. This is as a result of planned local development and also long term low level monitoring results. The details within table 2.2 reflect the current monitoring locations. **Please note that the relocation of some tubes and removal of others has resulted in the tubes being renumbered.**

Gradko Ltd supplies and analyses the diffusion tubes using the 20% TEA (Triethanolamine) in water method. Gradko participates in the UK National Diffusion Tube Network and the Workplace Analysis Scheme for Efficiency (WASP). They currently hold UKAS accreditation for analysis of diffusion tubes and consistently achieve the highest performance level in annual field inter-laboratory performance comparisons.

Table 2.2 Details of Non-Automatic Monitoring Sites

Note that yellow highlighting refers to old locations, green highlighting refers to new or modified tube locations.

Table 2.2 Details of Non-Automatic Monitoring Sites Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
A361 Roundabout, Byfield	Roadside	X 451734 Y 253421	NO ₂	N	Y (15M)	1m	Y
Church St Byfield	Urban background	X 451752 Y 253386	NO ₂	N	Y (10M)	1M	N/A
Boughton Road, Moulton	Kerbside	X 476848 Y 265802	NO ₂	N	Y(25M)	1M	Y
A361. Kilsby	Roadside	X 456213 Y 270717	NO ₂	N	N	1M	N/A no receptor
A428 Roundabout, West Haddon	Roadside	X 462960 Y 271794	NO ₂	N	Y(5M)	1M	Y
Watford Rd West Haddon	Suburban/rural	X 462930 Y 271745	NO ₂	N	Y (1M)	.5M	N/A
Park View, Moulton	Kerbside	X 479378 Y 266384	NO ₂	N	N	1M	N
Morrison Rd West Haddon	Rural	X 463424 Y 272119	NO ₂	N	Y (10M)	.5M	N/A
Post Office Moulton	Roadside	X 478300 Y 266200	NO ₂	N	Y(5M)	1M	Y
Church St Moulton	Suburban/rural	X 478382 Y 266386	NO ₂	N	Y(1M)	.5M	N/A
New St Daventry	Roadside	X 457420 Y 262439	NO ₂	N	N	1M	Y
London Rd Daventry	Roadside	X 457592 Y 261745	NO ₂	N	N	1M	Y
Inlands Daventry	Suburban	X 457437 Y 262110	NO ₂	N	Y(10M)	1M	N/A
Watling Street, Kilsby	Kerbside	X 456407 Y 271205	NO ₂	N	N	1M	Y
M1 Lilbourne	Roadside	X 456572 Y 276826	NO ₂	N	N	1M	N/A no receptor
Horsepool Lilbourne	Suburban/rural	X 456217 Y 277049	NO ₂	N	Y(10M)	1M	Y
Haythog Farm Crick	Roadside to M1	X 457573 Y 273884	NO ₂	N	N	N/A	N/A no receptor
Haythog Farm Crick	Suburban/Rural	X 457673 Y 273884	NO ₂	N	N	N/A	N/A no receptor
Hillmorton Lane, Lilbourne	Rural	X 455422 Y 275971	NO ₂	N	N	1M	N/A no receptor yet
Haythog Farmhouse	Suburban/Rural	X 457673 Y 273884	NO ₂	N	Y (1M)	N/A	Y
Buckby Wharf	Roadside to M1	X 461389 Y 265483	NO ₂	N	N	1M	N/A no receptor
Long Buckby Train Station	Kerbside	X 462354 Y 266701	NO ₂	N	N	1M	N/A no receptor yet
Buckby Wharf	Suburban/Rural	X 461358 Y 265469	NO ₂	N	Y(10M)	1M	N/A

School Lane Naseby	Rural	X 468834 Y 278099	NO ₂	N	Y (5M)	.5M	N/A
Long Buckby, William Road	Kerbside	X 462688 Y 267426	NO ₂	N	Y (10M)	1M	Y
High St Welford	Rural	X 464240 Y 280355	NO ₂	N	Y (10M)	1M	N/A
A5, Weedon	Kerbside		NO ₂	N	Y (25M)	1M	Y
A45, Windsor Close, Weedon	Roadside	X 462862 Y 259867	NO ₂	N	Y (10M)	5M	N/A
A45, Spring Lane, Flore	Roadside	X 464353 Y 260282	NO ₂	N	Y (5M)	.5M	N/A
Welton Road, Daventry	Kerbside	X 457690 Y 264473	NO ₂	N	Y (5M)	1M	Y
A361, Middlemore, Daventry	Kerbside	X 456817 Y 265197	NO ₂	N	Y (25M)	1M	Y
Ashby Road, Daventry	Kerbside	X 457067 Y 263051	NO ₂	N	Y (5M)	1M	Y
Braunston Road, Daventry	Kerbside	X 456477 Y 262953	NO ₂	N	Y (5M)	1M	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (NO₂)

Automatic Monitoring Data

Daventry District Council does not operate any automatic monitoring sites.

Diffusion Tube Monitoring Data

Average results from 2009-2012 are presented in table 2.6 on page 18 along with 2013 monitoring results.

From table 2.5, it can be seen that the following site was above the 40µg/m³ maximum annual mean.

Kerbside to M1 at Lilbourne (N12)

It can be seen from Table 2.5 that the levels kerbside to the M1 at Lilbourne (N12) are 75.77µg/m³, which is an increase from 2012. This location however, is not representative of nearby properties; the NO₂ levels at Horsepool Lane, Lilbourne (N13), which is representative of nearby properties, is at 16.93µg/m³. As reported in the USA undertaken in 2012, it is likely that the circumstances for exposure at this monitoring location is that the canyon effect contains the pollutants at the carriageway and minimises the effect upon those properties which are located at the

top of a sizeable embankment and at least 30 metres away from the M1 as it travels through a cutting. Therefore a detailed assessment is not required.

From table 2.5, it can be seen that the following site was of marginal significance when comparing the $40\mu\text{g}/\text{m}^3$ maximum annual mean.

It can be seen from table 2.5 that levels at Haythog Farm Crick, (N14) are of marginal significance at $37.31\mu\text{g}/\text{m}^3$. This location is on the edge of the M1 however, and is therefore not representative of nearby properties; the NO_2 levels at Haythog Farmhouse, (N16), which is the nearest property, are at $24.90\mu\text{g}/\text{m}^3$. The diffusion tube located at position (N14), is the closest to the M1 and is not representative of the exposure at the property. Therefore a detailed assessment is not required. This location has now been removed from the monitoring programme, as a representative location is monitored at Haythog Farmhouse itself, reference N16.

All other sites

Across the district there was a general trend of decreasing levels of NO_2 at most sites and a slight increase at five sites. The figures are not wildly different to those reported in previous years, a summary of which is provided in Table 2.6. The NO_2 tube located at the M1, Lilbourne, remains fairly stable, with peaks and troughs recorded throughout the year. These peaks and troughs can be due to traffic incidents and weather patterns. The M1 remains the main source of air pollution in the district.

Overall the annual mean at all sites except for the M1 background monitoring station is well below the $40\mu\text{g}/\text{m}^3$ objective. The site where levels exceed the annual mean objective is kerbside to the M1 motorway and does not have relevant public exposure.

Table 2.5 Results of NO₂ Diffusion Tubes 2013

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) ^a	2013 Annual Mean Concentration (µg/m ³) - Bias Adjustment factor = 0.80 ^b
N1	A361 Roundabout, Byfield	Roadside	N	N	12	17.46
Old N2	Church Street, Byfield	Urban Background	N	N	1	Deleted
New N2	Boughton Road, Moulton	Kerbside	N	N	11	17.92
N3	A361, Kilsby	Roadside	N	N	11	22.94
N4	A428 roundabout, West Haddon	Roadside	N	N	12	16.52
Old N5	Watford Road, West Haddon	Suburban / Rural	N	N	1	Deleted
New N5	Park View, Moulton	Kerbside	N	N	10	22.64
N6	Morrison Road, West Haddon	Rural	N	N	12	13.06
N7	Post Office, Moulton	Roadside	N	N	11	21.51

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.80 ^b
N8	Church Street, Moulton	Suburban / Rural	N	N	10	14.56
N9	New Street, Daventry	Roadside	N	N	12	24.54
N10	London Road, Daventry	Roadside	N	N	12	17.24
Old N11	Inlands, Daventry	Suburban	N	N	1	Deleted
New N11	Watling Street, Kilsby	Kerbside	N	N	10	29.33
N12	M1, Lilbourne	Roadside	N	N	11	75.77
N13	Horsepool, Lilbourne	Roadside	N	N	12	16.93
N14	Haythog Farm	Roadside to M1	N	N	12	32.22
Old N15	Haythog Farm	Suburban / Rural	N	N	1	Deleted
New N15	Hillmorton Lane, Lilbourne	Kerbside	N	N	10	30.48
N16	Haythog Farmhouse	Suburban / Rural	N	N	12	24.90
Old N17	Buckby Wharf	Roadside to M1	N	N	1	Deleted

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.80 ^b
New N17	Long Buckby Train Station	Kerbside	N	N	10	17.28
N18	Buckby Wharf	Suburban / Rural	N	N	11	23.42
Old N19	School Lane, Naseby	Rural	N	N	1	Deleted
New N19	William Road, Long Buckby	Kerbside	N	N	11	14.79
Old N20	39 High Street, Welford	Rural	N	N	1	Deleted
N20	A5, Weedon	Kerbside	N	N	9	22.70
N21	A45, Weedon	Roadside	N	N	12	16.34
N22	Flore	Roadside	N	N	11	22.43
New N23	Welton Road, Daventry	Kerbside	N	N	10	16.89
New N24	A361 Middlemore, Daventry	Kerbside	N	N	9	23.29
New N25	Ashby Road, Daventry	Kerbside	N	N	10	22.94

Site ID	Location	Site Type	Within AQMA?	Triplicate or Co-located Tube	Full Calendar Year Data Capture 2012 (Number of Months or %) ^a	2013 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Bias Adjustment factor = 0.80 ^b
New N26	Braunston Road, Daventry	Kerbside	N	N	9	20.65

In bold, exceedance of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Note, yellow highlighted sites removed in 2013, green highlighted sites added in 2013.

Table 2.6 Results of NO₂ Diffusion Tubes (2008 to 2012)

Site ID	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias ^a				
			2009 (Bias Adjustment Factor = XX)	2010 (Bias Adjustment Factor = XX)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.89)	2013 (Bias Adjustment Factor = 0.80)
N1	A361 Roundabout Byfield K	N	20.9	20.6	21.72	19.78	17.46
Old N2	Church Street, Byfield UB	N	16.2	18.9	15.55	13.62	11.97
New N2	Boughton Road, Moulton	N	N/A	N/A	N/A	N/A	14.92
N3	A361, Kilsby	N	N/A	N/A	27.09	25.09	22.94
N4	A428, Roundabout, West Haddon K	N	24.0	24.4	20.99	21.93	16.52
Old N5	Watford Road, West Haddon S/R	N	21.5	25.5	22.65	22.85	18.82
New N5	Park View, Moulton	N	N/A	N/A	N/A	N/A	22.64

Site ID	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias ^a				
			2009 (Bias Adjustment Factor = XX)	2010 (Bias Adjustment Factor = XX)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.89)	2013 (Bias Adjustment Factor = 0.80)
N6	Morrison Road, West Haddon B	N	18.1	17.8	15.58	16.52	13.06
N7	Post Office, Moulton K	N	26.0	29.3	30.26	25.42	21.56
N8	Church Street, Moulton B	N	18.8	19.1	21.68	16.66	14.56
N9	New Street, Daventry K	N	29.4	28.9	28.06	22.81	24.54
N10	London Road, Daventry K	N	20.9	22.7	18.14	19.27	17.24
Old N11	Inlands, Daventry S	N	18.2	21.5	15.77	18.54	16.66
New N11	Watling Street, Kilsby	N	N/A	N/A	N/A	N/A	29.33
N12	M1 Lilbourne (Kerbside to M1)	N	80.3	74.0	63.67	67.45	75.77
N13	Horsepool, Lilbourne (Background to M1)	N	21.5	25.4	26.61	21.11	16.93
N14	Haythog Farm, Crick (kerbside to M1)	N	36.7	37.7	40.91	35.12	32.22
Old N15	Haythog Farm Crick (Background to M1)	N	32.3	30.3	30.95	32.01	37.31
New N15	Hillmorton Lane, Lilbourne	N	N/A	N/A	N/A	N/A	30.48
N16	Haythog Farmhouse	N	34.0	29.5	30.90	29.57	24.90
Old N17	Buckby Wharf (Kerbside to M1)	N	31.7	40.7	24.71	33.97	28.27

Site ID	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias ^a				
			2009 (Bias Adjustment Factor = XX)	2010 (Bias Adjustment Factor = XX)	2011 (Bias Adjustment Factor = XX)	2012 (Bias Adjustment Factor = 0.89)	2013 (Bias Adjustment Factor = 0.80)
New N17	Train Station, Long Buckby	N	N/A	N/A	N/A	N/A	17.28
N18	Buckby Wharf (Background to M1)	N	28.3	29.6	23.86	25.60	23.42
Old N19	School Lane, Naseby B	N	17.3	18.5	17.93	15.20	12.59
New N19	William Road, Long Buckby	N	N/A	N/A	N/A	N/A	14.70
Old N20	39 High Street Welford B	N	22.0	27.8	21.95	22.04	24.84
New N20	A5, Weedon	N	N/A	N/A	N/A	N/A	22.70
N21	A45, Windsor Close, Weedon	N	19.2	25.0	20.15	18.55	16.34
N22	A45, Spring Lane, Flore	N	20.4	24.4	21.21	18.61	22.43
N23	Welton Road, Daventry	N	N/A	N/A	N/A	N/A	16.89
N24	A361, Middlemore Daventry	N	N/A	N/A	N/A	N/A	23.29
N25	Ashby Road, Daventry	N	N/A	N/A	N/A	N/A	22.90
N26	Braunston Road, Daventry	N	N/A	N/A	N/A	N/A	20.65

In bold, exceedance of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Note, yellow highlighted sites removed in 2013, green highlighted sites added in 2013.

2.2.2 Particulate Matter (PM₁₀)

There is currently no monitoring of PM₁₀ within Daventry District. There were no reported exceedances of the annual mean concentration value for PM₁₀ nationally during 2013⁽²⁾. Therefore it is likely that there would be no measured exceedances of PM₁₀ objectives in Daventry district and no need for this monitoring to be carried out.

2.2.3 Sulphur Dioxide (SO₂)

There is currently no continuous or indicative monitoring of sulphur dioxide within Daventry district. Sulphur dioxide concentrations measured during 2013 at all sites within the UK automatic monitoring network including busy roadside sites met the AQS objective for 2013 in relation 1-hour and 24 hour mean concentrations⁽²⁾. There were no reported exceedances of the 15-minute, hourly or daily AQS objectives at sites within the East Midlands. Daventry district does not have any history of coal mining where solid fuel usage would have been likely to be used as a means of heating rather than natural gas.

2.2.4 Benzene

Daventry District Council did monitor Benzene from 2002 to 2008 at five sites across the district. Levels were consistently significantly below the 2010 objective of 5µg/m³. Monitoring of Benzene is therefore no longer undertaken by Daventry District Council.

2.2.5 Other Pollutants Monitored

Daventry District Council does not monitor any other pollutants.

Summary of Compliance with AQS Objectives

Daventry District Council has examined the results from monitoring in the district. Concentrations are all below the objectives. That site which exceeds the annual mean objective is kerbside to the M1 and does not have relevant public exposure; therefore there is no need to proceed to a Detailed Assessment. The nearest residential property to this location is Haythog Farmhouse, which records levels well below those reached on the M1 kerbside.

3 New Local Developments

There were additional residential properties built at the Middlemore housing estate in Daventry, but these number around 100 and have no impact on air quality objectives.

The Monksmoor estate development commenced in 2013, around 30 houses completed to year end. This is the start of a larger development of 1000 houses in total: a diffusion tube has been located in this area to monitor pollutants from increased traffic flows in the locality.

Long Buckby East and West development was commenced, very few properties completed by year end. A diffusion tube has been located in to this area to monitor pollutants from increased traffic flows in the locality.

Brixworth has seen development of around 150 houses. It is not thought that this has significant effect of local air quality.

There has been no significant development in Daventry District in 2013, although a large housing development has commenced as detailed above.

3.1 Road Traffic Sources

There are no new or newly identified road traffic sources within Daventry District in 2013. Consultation has been received for two new bypasses in the district, but these have not been approved nor has development commenced.

3.2 Other Transport Sources

There are no new or newly identified non-road traffic sources within Daventry District in 2013.

3.3 Industrial Sources

There are no new or newly identified industrial sources within Daventry District in 2013.

3.4 Commercial and Domestic Sources

There are no newly identified commercial or domestic sources of significance within Daventry District in 2013.

3.5 New Developments with Fugitive or Uncontrolled Sources

There are no new or newly identified fugitive or uncontrolled sources within Daventry District in 2013.

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

Daventry District Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Local / Regional Air Quality Strategy

Daventry District Council does not have a local air quality strategy, nor is it intended to write one in the near future. It is not felt that this is required at the current time, due to low levels of pollutants within the district.

5 Planning Applications

A development on the edge of Daventry town centre has been approved at the planning stage, comprising of redevelopment of currently vacant land and demolition of some existing buildings. The development will comprise a large supermarket, white goods sales and car parking, as well as re-alignment of the Braunston Road. This had been considered when the locations of the diffusion tubes were reviewed at the start of the year and resulted in two new monitoring sites at Braunston Road and Ashby Road, Daventry to monitor air quality prior to and once the changes are complete. Works have not yet commenced on this development.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Further monitoring will be continued for Nitrogen Dioxide at key locations with the district.

Air quality within the district of Daventry shows a general downward trend with the exception of the M1 monitors and one location in Daventry Town Centre. There are no exceedances recorded where residential property is affected, and therefore there are no further actions required.

Next action will be to complete the Updated Screening Assessment in 2015.

6.2 Conclusions relating to New Local Developments

The redevelopment of areas just outside Daventry town centre and the realignment of a key road through the town will be further considered in the Updated Screening Assessment due for completion in 2015.

Initial discussions are being held in relation to two bypasses within the district, neither of which is located in areas where significant air quality issues are recorded. These will be discussed further in the 2015 Updated Screening Assessment.

6.3 Other Conclusions

The 2013 report has identified a general downward trend in NO₂ recorded throughout the district when compared to results from 2012. There are no significant increases or decreases in levels across the district, although there are slight variations.

This report provides an update on air quality monitoring and local developments in line with the required guidance.

The report compares new monitoring data from 2013 against the relevant Air Quality Objectives. The conclusions are that no further investigation is required for

Nitrogen Dioxide

Carbon Monoxide

Benzene

1,3-Butadiene

Lead

Sulphur Dioxide

Fine Particles – PM₁₀

The report also compares data from the last five years (2009 – 2013), which shows an initial steady improvement in air quality followed by slight upwards and downwards variations dependant on location.

6.4 Proposed Actions

Next course of Action: Complete and submit the 2015 Updated Screening Assessment and if necessary progress to a Detailed Assessment if limits are exceeded.

7 References

Please provide a list of all documents referred to in the report.

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1. Daventry District Area Profile 2013. Published by Daventry District Council, November 2013. Sourced on line
2. Air Pollution in the UK 2012 – Compliance Assessment Summary. Published by DEFRA, September 2013. Accessed online from: <http://uk-air.defra.gov.uk/library/annualreport/index>

Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

Factor from Local Co-location Studies (if available)

Daventry District Council has not carried out any co-location studies.

Diffusion Tube Bias Adjustment Factors

Diffusion tubes require a bias factor to be determined to ensure the accuracy of the measurements. This is done by co-location of tubes with a continuous analyser or that tubes are in triplicate at the measurement location so to improve precision and accuracy in the results. However bias of diffusion tubes is largely associated with the laboratory and preparation method used. The bias correction factor for monthly exposure of Gradko tubes made up with 20% TEA in water is calculated each year available at the UWE helpdesk web site

<http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube050509.xls>

The bias adjustment factors used for the NO₂ diffusion tube results are listed below

Year	Bias adjustment factor
2011	0.89
2012	0.87
2013	0.80

Factor from Local Co-location Studies (if available)

Daventry District Council do not co locate any of its diffusion tubes.

Discussion of Choice of Factor to Use

The national bias adjustment factors have been used. The 0.80 bias figure was derived from the national figures provided by Gradko.