2016 Air Quality Progress Report for Welwyn Hatfield Borough Council

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

May 2016

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Executive Summary

The role of the local authority Review and Assessment process is to identify any relevant areas where it is considered that the government's air quality objectives for relevant air pollutants will be exceeded. We have previously undertaken the earlier rounds of Review and Assessment of local air quality management and not needed to designate any part of its area as an Air Quality Management Area as none of the objectives have been exceeded where relevant public exposure is present.

This report concerns the 2016 Air Quality Progress Report and has re-examined pollution sources in the area in accordance with Defra LAQM guidance (released February 2009). The data period covered is 1st January 2015 – 31st December 2015.

Air quality in Welwyn Hatfield

Measured air quality within the borough is currently below the set objectives at all except one of the monitored sites.

The Council has decided not to undertake a detailed assessment or declare an air quality action area at this stage. We feel that we need to increase levels of monitoring in the area where the objective was breached. This can be justified by the fact that the current location where we have obtained high readings is not close to any relevant receptors.

The authority is currently working in line with our district plan. The plan consists of a core strategy identifying potential development for housing outside of urban areas. This strategy proposes a number of new housing developments with a target date of 2020.

In recent years we have significantly increased our level of monitoring. The new locations have been situated with relevance to the local plan but also in locations where we suspect there could be poor air quality. We have currently got 24 diffusion tube locations which is a significant increase from the 6 locations we had in 2012.

We have recently secured funding for a new street located continuous air quality monitor. This unit is a BAM 1020 and has the capability to monitor PM10 or PM2.5. A considerable amount of work has been undertaken in order to secure the funding and to set up suitable power connections for the unit. The unit is due to be installed on the week commencing 25th April 2016. This is a fantastic achievement and it cements our target to continue to focus on air quality within the Borough.

Actions to improve air quality

We are currently still building upon our knowledge of air quality in the area. At this present time we do not have an air quality action area. This means that we do not have an action plan and are unable to suggest specific changes or implement specific changes to road traffic or developments. We would have to have supporting evidence as to why these changes are necessary. However, despite this we are conscious of current air quality and we are determined to make this a priority. We do factor in air quality as a major consideration for all new developments.

Local priorities and challenges

This year our priorities remain the same as they have previously. Air quality is a very important element of public health and we are focused on this. Previous reports have shown the remarked improvements that have been made to our air quality monitoring network. We will continue to make improvements to try and protect our local community.

How to get involved

Air quality can be controlled by everyone. We ask that the community take time to consider whether driving is appropriate. We always encourage people to think of better ways to travel. These could be cycling, walking, care sharing. We always try and discourage the lighting of bonfires and promote greener waste disposal. The overall aim is to try and get everyone to consider our environment and to think greener.

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1 Local air quality management

1.1 Description of Local Authority Area

The Borough of Welwyn Hatfield is located in southern Hertfordshire and covers the two towns of Welwyn Garden City and Hatfield, along with numerous smaller settlements and rural areas. Both towns, set within the London green belt, still retain their own identities. Welwyn Garden City has a famous heritage being a Garden City and designated New Town. Both towns also act as dormitories for residents who work in London.

The total area covered by the Council is just over 129km^2, with a population of approximately 108,300 (2008 estimate). The main employment in the area is service related, although there is some industry. Each of the towns has a railway station on the East Coast Main Line and they are close to the A1 road for access to London and the rest of the country via road.

There are a few minor industrial processes that are regulated by the Council and three larger industrial processes regulated by the Environment Agency (including a waste transfer site) in the Council's 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 exceedences 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 exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

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

Table 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

The Council undertook previous rounds of Review and Assessment of air quality. The main issue with respect to local air quality was found to be road traffic emissions (NO_2 and PM_{10}) emanating from vehicles, but it was considered that the air quality objectives would be met where there was relevant exposure and that it was not necessary to designate an Air Quality Management Area (AQMA) in the Borough.

The conclusions from the 2014 progress report were: The monitoring undertaken with sufficient data capture within the Borough confirmed that the annual mean nitrogen dioxide objective has not been exceeded.

The update and screen assessment undertaken in 2015 concluded the following:

The air quality in the Borough of Welwyn and Hatfield currently meets the government air quality objectives set for local air quality management (LAQM) purposes. The Council is demonstrating its political leadership by taking action; such as leading by example; monitoring air quality; using the planning system; integrating air quality into the public health system; and informing the public. This 2015 Updating and Screening Assessment fulfils one further aspect of this ongoing commitment.

This 2015 Updating and Screening Assessment for Welwyn Hatfield reviews and assesses air quality against the government's objectives in the Air Quality Regulations 2000 and amendment regulations.

The role of the Review and Assessment process is to identify any relevant areas in the Borough where it is considered that the air quality objectives for the above air pollutants will be exceeded. The Council has previously undertaken the earlier rounds of Review and Assessment of local air quality management and not identified any areas where the objectives are exceeded.

This report concerns the sixth round Updating and Screening Assessment of air quality. For this, pollution sources have been re-examined and recent air quality monitoring in the Borough checked in accordance with Defra's Local Air Quality Management (LAQM) guidance.

The report identifies that the Council has not identified an additional risk of the air quality objectives for the LAQM pollutants: nitrogen dioxide, particles (PM_{10}) carbon monoxide, benzene, 1,3-butadiene, lead and sulphur dioxide, being exceeded anywhere in the Council's area. Thus the Council need not proceed beyond the updating and screening assessment for these pollutants

In view of these findings the Council will undertake the following actions:

1. Undertake consultation with the statutory and other consultees as required.

2. Maintain the existing monitoring programme.

3. Prepare for the submission of its next Air Quality report.

The progress report in 2014 concluded the following:

The monitoring results show that we do not have any exceedances in the air quality objectives at this current time. In the past we have had issues with equipment malfunctions and people stealing diffusion tubes because they were not adequately secured. The past two years have seen a change and we have been able to establish a regular amount of data capture. The diffusion tubes are now secured properly so data capture has increased significantly.

We have been able to gather a satisfactory amount of data capture with the new locations but there have been some issues. As expected with newly located tubes it has raised some interest and there have been instances where tubes have been stolen or turned upside down.

Looking at the data for our automatic monitors the levels have decreased in recent years and this could have a direct relation to the changes in climate. The data capture from the automatic analyser for 2013 shows that the levels have decreased again. However, due to the fact that the monitors are located on the roof of our building the levels are not representative of relevant exposure.

In the last few months the gas cylinder that is used to calibrate our NO_2 analyser expired. In April 2014 we purchased a new cylinder to replace it but the cylinder turned out to be contaminated so it was returned to the supplier. It seemed timely to reassess the relevance and cost effectiveness of maintaining the analysers in their current location. After discussions with DEFRA we have decided to take the analysers out of service for the time being until we can make arrangements to re-locate them to a more appropriate location.

The bias adjusted diffusion tube results have remained relatively constant when comparing the results from 2012. The previous increase that was noted at the New Barnfield site has not increased any further this year. I feel that it is beneficial to continue monitoring at the six original sites so we can keep a track on any changes or trends that may appear in future years.

At the time of writing this report we do not have a full 12 months of data capture for the 10 newly located sites. Despite this I have no immediate concerns from the data that has been captured thus far but this could of course change in the months to come. It is important that we re-evaluate the air quality levels at this site once we have a full years worth of data.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

The Council was advised to decommission the automatic monitoring site that was located at the council offices. The location of the monitoring site was inappropriate as it was situated at second floor level. It became clear that the value of the results brought little benefit when compared to the expense of maintaining the units. This monitoring location was decommissioned in 2014.

It is important to note that we are in the process of commissioning a new automatic monitoring site in Hatfield. The site is due to become operational shortly.

Non-Automatic Monitoring Sites

The Council undertakes the monitoring of nitrogen dioxide (NO_2) using non-continuous methods of measurement.

The NO_2 diffusion tubes are exposed at 24 locations. A co-location study has not been undertaken. The details of the monitoring sites are provided in Table 2.2.

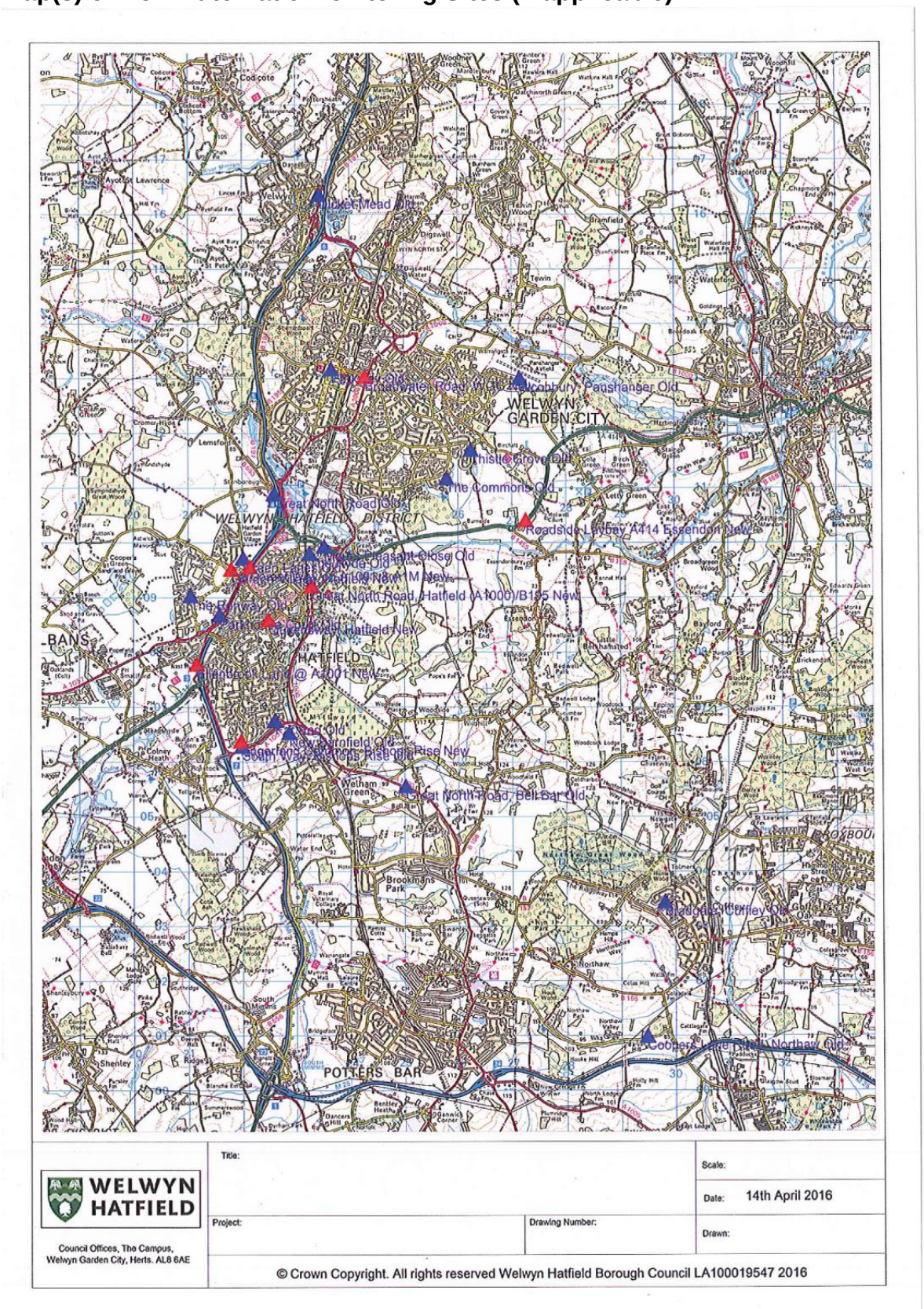
Monitoring using diffusion tubes has advantages over continuous monitoring in that it is far cheaper and therefore more sites can be established and assessed. The main disadvantage is that the method is less precise and accurate than continuous monitoring. The recommended methods to reduce these errors include the use of good QA/QC practices and bias adjustment factors that are derived from co-location studies between continuous analysers and diffusion tubes.

The bias adjustment factor for each year reported has been obtained from the default bias adjustment factors (based on the April 2015 spreadsheet derived from the government's Review and Assessment website). The default factors are based on statistical analyses of reported data provided by other local authorities. The factors used for all years indicate that the diffusion tube results over estimate continuously monitored concentrations

Diffusion tube site type designation criteria:

Type	**Definition**
Kerbside	Within 1m of the kerb
Roadside	1-5m from the kerb edge
Near road	More than 5m from the kerb of a busy road but air quality is likely to be affected by the busy road
Urban background	>50m from any major source of NO_2, such as multi-storey car parks >30m from any busy road(>30,000 vehicles per day) >20m from any busy road (10,000 – 30,000 vehicles per day) >10m from any main road (quiet roads e.g. within resident estates are acceptable >5m from any area where vehicles are likely to be idling

Map(s) of Non-Automatic Monitoring Sites (if applicable)



2.1.2 Table 2.2 Details of Non- Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
WH1	Dicket Mead, Welwyn	Near road	523442	216316	2.5	NO_2	N	N	Y (1m)	2m	Y
WH2	Parkway, WGC	Near road	523656	213133	2.5	NO_2	N	N	N	2m	N
WH3	Great North Rd, Bell Bar	Near road	524991	205525	2.5	NO_2	N	N	N	2m	N
WH4	New Barnfield, Hatfield	Kerbside	522863	206489	2.5	NO_2	N	N	N	1m	N
WH5	Coopers Lane Road, Northaw	Kerbside	529402	200929	2.5	NO_2	N	N	N	1m	N
WH6	Bradgate, Cuffley	Kerbside	529933	203654	2.5	NO_2	N	N	Y(13m)	1m	N
WH7	Parkhouse Court, Hatfield	Near road	521575	208645	2.5	NO_2	N	N	Y(20m)	2m	Y
WH8	Far End, Hatfield	Kerbside	522609	206718	2.5	NO_2	N	N	Y(20m)	1m	Y

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
WH9	Mount Pleasant Close, Hatfield	Near road	523519	209890	2.5	NO_2	N	N	Y(10m)	2m	Y
WH10	The Ryde, Hatfield	Near road	523377	209858	2.5	NO_2	N	N	Y(10m)	2m	Y
WH11	Thistle Grove, WGC	Kerbside	526249	211617	2.5	NO_2	N	N	Y(7m)	1m	N
WH12	The Commons, WGC	Kerbside	525852	211187	2.5	NO_2	N	N	Y(15m)	1m	N
WH13	Alconbury, WGC	Kerbside	527150	212966	2.5	NO_2	N	N	Y(7m)	1m	Y
WH14	Green Lanes, Hatfield	Kerbside	522013	209707	2.5	NO_2	N	N	Y(13m)	1m	Y
WH15	Great North Road, Hatfield	Near road	522604	210859	2.5	NO_2	N	N	Y(30m)	2m	Y
WH16	The Runway, Hatfield	Near road	521052	208998	2.5	NO_2	N	N	Y(1m)	2m	N

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Site Height (m)	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
WH17	Great North Road, Hatfield (A1000)	Near road	523293	209164	2.5	NO_2	N	N	Y(5m)	2m	Y
WH18	B195 Broadwater Road	Near road	524285	212988	2.5	NO_2	N	N	N	2m	Y
WH19	Comet Way A1001	Near road	522144	209516	2.5	NO_2	N	N	N	2m	N
WH20	Queensway Hatfield	Kerbside	522497	208544	2.5	NO_2	N	N	Y(10m)	1m	N
WH21	A414 Essendon	Near road	527258	210364	2.5	NO_2	N	N	Y(10m)	2m	N
WH22	Garden Village	Kerbside	521801	209471	2.5	NO_2	N	N	N	1m	N
WH23	South Way, Bishops Rise	Near road	521998	206243	2.5	NO_2	N	N	Y(10m)	2m	N
WH24	Ellenbrook Lane	Near road	521164	207740	2.5	NO_2	N	N	N	4m	N

2.2 Comparison of Monitoring Results with Air Quality Objectives

Since we have decommissioned the automatic monitoring site at the council offices we have been reliant on diffusion tubes to monitor air quality levels across the borough.

We have also increased the number of monitoring locations from 16 to 24. We have obtained solid and reliable data capture throughout 2015.

There is one location that has breached the air quality objective and this is the tube that is located on Comet Way which is adjacent to the A1M. The other 23 locations are all under the objective level.

The fact that we have a location that has breached the objective must be a key consideration. The conclusion section of this report will detail the actions we intend to take to investigate this further.

Table 2.3 Results of NO_2 Diffusion Tubes 2015

Site ID	*Location*	*Site Type*	*Within AQMA?*	*Triplicate or Co-located Tube*	*Full Calendar Year Data Capture 2015 (Number of Months)*	*2015 Annual Mean Concentration (µg/m^3) – Bias Adjustment factor = ($^{0.81}$)*
WH1	*Dicket Mead, Welwyn*	*Near road*	*N*	*N*	*11*	*23*
WH2	*Parkway, Welwyn Garden City*	*Near road*	*N*	*N*	*11*	*24*
WH3	*Great North Road, Bell Bar*	*Near road*	*N*	*N*	*12*	*26*
WH4	*New Barnfield*	*Kerbside*	*N*	*N*	*12*	*27*
WH5	*Coopers Lane Road, Northaw*	*Kerbside*	*N*	*N*	*12*	*20*
WH6	*Bradgate, Cuffley*	*Kerbside*	*N*	*N*	*11*	*17*
WH7	*Parkhouse Court, Hatfield*	*Near road*	*N*	*N*	*12*	*30*
WH8	*Far End, Hatfield*	*Kerbside*	*N*	*N*	*12*	*20*
WH9	*Mount Pleasant Close, Hatfield*	*Near road*	*N*	*N*	*12*	*21*
WH10	*The Ryde, Hatfield*	*Near road*	*N*	*N*	*12*	*20*
WH11	*Thistle Grove, WGC*	*Kerbside*	*N*	*N*	*12*	*15*

Site ID	***Location***	***Site Type***	***Within AQMA?***	***Triplicate or Co-located Tube***	***Full Calendar Year Data Capture 2015 (Number of Months)***	***2015 Annual Mean Concentration (µg/m^3) – Bias Adjustment factor = ($^{0.81}$)***
WH12	*The Commons, WGC*	*Kerbside*	*N*	*N*	*12*	*15*
WH13	*Alconbury, WGC*	*Kerbside*	*N*	*N*	*12*	*14*
WH14	*Green Lanes, Hatfield*	*Kerbside*	*N*	*N*	*11*	*28*
WH15	*Great North Road, Hatfield*	*Near road*	*N*	*N*	*12*	*22*
WH16	*The Runway, Hatfield*	*Near road*	*N*	*N*	*9*	*21*
WH17	*Great North Road, Hatfield (A1000)*	*Near road*	*N*	*N*	*11*	*34*
WH18	*B195/Broadwater Road*	*Near road*	*N*	*N*	*12*	*35*
WH19	***Comet Way A1001***	***Near road***	***N***	***N***	***12***	***55***
WH20	*Queensway Hatfield*	*Kerbside*	*N*	*N*	*10*	*31*
WH21	*A414 Essendon*	*Near road*	*N*	*N*	*12*	*30*
WH22	*Garden Village*	*Kerbside*	*N*	*N*	*11*	*37*
WH23	*South Way, Bishops Rise*	*Near road*	*N*	*N*	*10*	*28*
WH24	*Ellenbrook Lane*	*Near road*	*N*	*N*	*12*	*39*

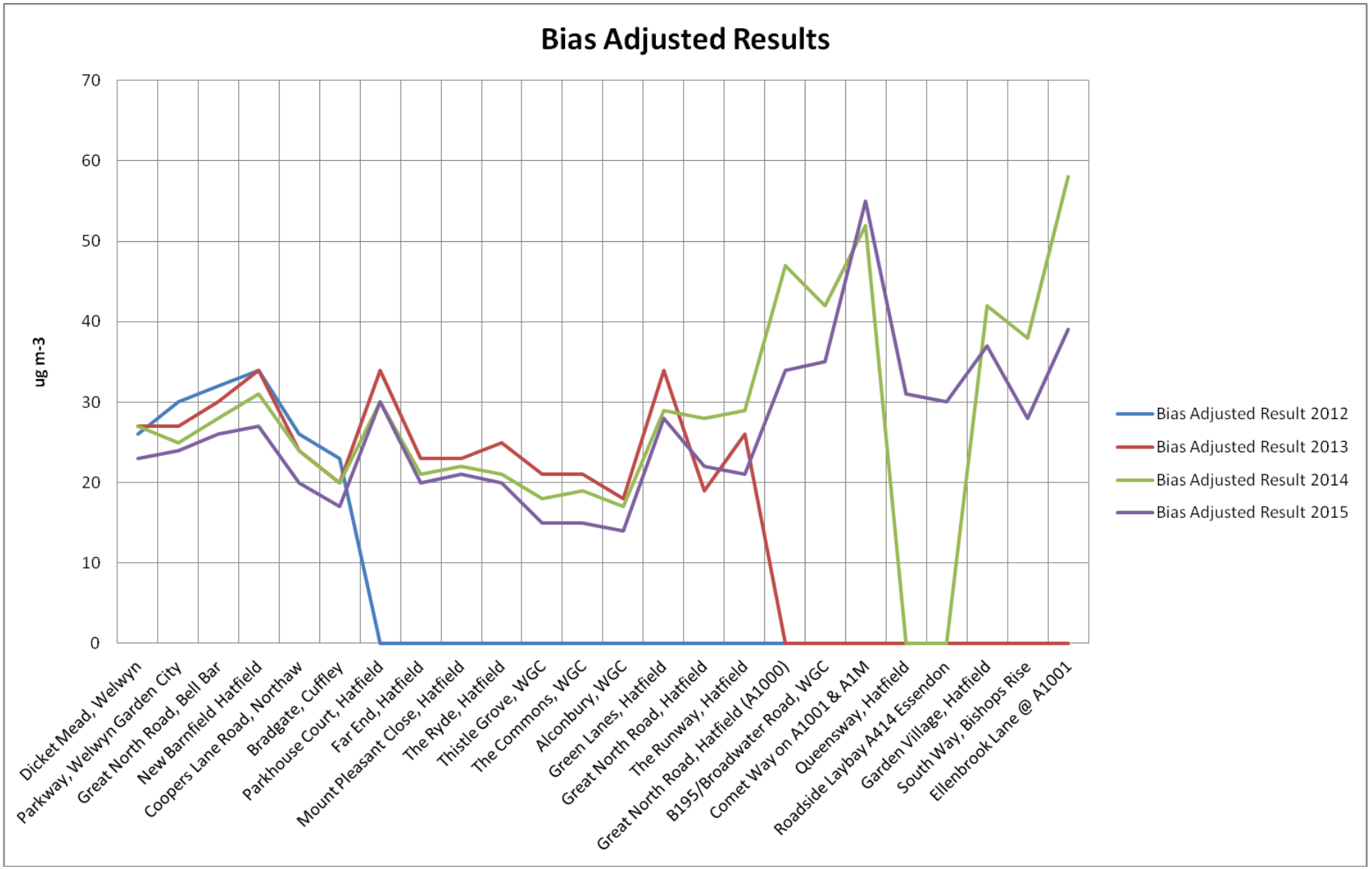
In bold, exceedence of the NO_2 annual mean AQS objective of 40µg/m^3

Table 2.4 Results of NO_2 Diffusion Tubes (2012 to 2015)

Site ID	Site Type	Within AQMA?	2012 (Bias Adjustment Factor = 0.79)	2013 (Bias Adjustment Factor = 0.80)	2014 (Bias Adjustment Factor = 0.81)	2015 (Bias Adjustment Factor = 0.81)
WH1	Dicket Mead, Welwyn	N	26	27	27	23
WH2	Parkway, Welwyn Garden City	N	30	27	25	24
WH3	Great North Road, Bell Bar	N	32	30	28	26
WH4	New Barnfield	N	34	34	31	27
WH5	Coopers Lane Road, Northaw	N	26	24	24	20
WH6	Bradgate, Cuffley	N	23	20	20	17
WH7	*Parkhouse Court, Hatfield*	N	N/A	34	30	30
WH8	*Far End, Hatfield*	N	N/A	23	21	20
WH9	*Mount Pleasant Close, Hatfield*	N	N/A	23	22	21
WH10	*The Ryde, Hatfield*	N	N/A	25	21	20
WH11	*Thistle Grove, WGC*	N	N/A	21	18	15
WH12	*The Commons, WGC*	N	N/A	21	19	15
WH13	*Alconbury, WGC*	N	N/A	18	17	14
WH14	*Green Lanes, Hatfield*	N	N/A	34	29	28

Site ID	Site Type	Within AQMA?	2012 (Bias Adjustment Factor = 0.79)	2013 (Bias Adjustment Factor = 0.80)	2014 (Bias Adjustment Factor = 0.81)	2015 (Bias Adjustment Factor = 0.81)
WH15	*Great North Road, Hatfield*	N	N/A	19	28	22
WH16	*The Runway, Hatfield*	N	N/A	26	29	21
WH17	*Great North Road, Hatfield A1000*	N	N/A	N/A	**47***	34
WH18	*B195/Broadwater Road*	N	N/A	N/A	**42***	35
WH19	*Comet Way A1001*	N	N/A	N/A	**52***	55
WH20	*Queensway, Hatfield*	N	N/A	N/A	**N/A**	31
WH21	*A414, Essendon*	N	N/A	N/A	**N/A**	30
WH22	*Garden Village, Hatfield*	N	N/A	N/A	**42***	37
WH23	*South Way, Bishops Rise*	N	N/A	N/A	**38***	28
WH24	*Ellenbrook Lane*	N	N/A	N/A	**58***	39

***The boxes highlighted in purple highlight that we only had 3 months data capture – this explains the overly high bias adjusted results**


Bias Adjusted Results
ug m-3
70
60
50
40
30
20
10
0
Dicket Mead, Welwyn
Parkway, Welwyn Garden City
Great North Road, Bell Bar
New Barnfield Hatfield
Coopers Lane Road, Northaw
Bradgate, Cuffley
Parkhouse Court, Hatfield
Far End, Hatfield
Mount Pleasant Close, Hatfield
The Ryde, Hatfield
Thistle Grove, WGC
The Commons, WGC
Alconbury, WGC
Green Lanes, Hatfield
Great North Road, Hatfield
The Runway, Hatfield
Great North Road, Hatfield (A1000)
B195/Broadwater Road, WGC
Comet Way on A1001 & A1M
Queensway, Hatfield
Roadside Laybay A414 Essendon
Garden Village, Hatfield
South Way, Bishops Rise
Ellenbrook Lane @ A1001
Bias Adjusted Result 2012
Bias Adjusted Result 2013
Bias Adjusted Result 2014
Bias Adjusted Result 2015

Summary of Compliance with AQS Objectives

We have examined the results from the monitoring we have undertaken in 2015. The above data allows us to make a comparison with the data obtained from 2012 until 2015. There are areas in the results that show a biased adjusted factor of 0. This is due to the fact that we have recently expanded our monitoring programme and monitoring was not being undertaken in that location at that time.

The results for locations WH17 to WH24 show a spike in 2014. This is due to the fact that the tubes were only located for 3 months of the year therefore the average bias adjusted level is not representative of a yearly result.

The trace over graph shows that the results have stayed fairly consistent from 2012 until 2015. The graph demonstrates that the results in 2015 were actually improved from previous years. This is a very positive result and is most likely to be attributed road traffic emissions being reduced by vehicles that have improved emission standards.

There is one monitoring location that has breached the air quality objective. This site is Comet Way which is adjacent to the A1M. This monitoring location was chosen because there is a proposed future housing development on the other side of the A1M and we wanted to ascertain the levels of pollution in this area. The monitoring location is currently set near a road and is 50m away from the nearest sensitive receptor. We have other monitoring sites in the locality which have given high readings but are below the objective level.

The fact that we have a site that has breached the objective level has raised concerns. Following on from discussions we have decided to increase our monitoring programme in this location. We feel that because the monitoring location is not close to a sensitive receptor that we need to undertake further monitoring. We have taken the decision to place 3 extra diffusion tubes in this locality and monitor the results for a further 6 months. The diffusion tubes will be located close to a receptor and close to the original Comet Way monitoring site. We will monitor the results closely to see whether the high levels of pollution extend to a wider area.

The results will be analysed after a 6 month period to ascertain whether further action is required. If we determine that the results are consistently high close to receptors location consultation advice will be sought from DEFRA.

There will be a diffusion tube co-located with the new BAM 1020 analyser which will be monitoring levels of PM2.5. This will allow us to establish a monitoring relationship between the results from the diffusion tube compared to our automatic analyser. This will enable us to establish other areas within the borough that may indicate high levels of PM2.5.

3 New Local Developments

3.1 Road Traffic Sources

The diffusion tube locations at Comet Way and Hatfield Garden Village are located in a congested area. There is a lot of rush hour traffic and a business park. The business park comprises of a lot of 24/7 delivery distribution centres which means there are a lot of heavy goods vehicles. The key roads that attribute to this traffic are the A1M, Comet Way, Hatfield Avenue and Gypsy Moth Avenue.

We will be carrying out more intensive monitoring in this area to keep a track on traffic levels and the link with elevated air quality readings.

3.2 Other Transport Sources

None

3.3 Industrial Sources

See appendix b.

3.4 Commercial and Domestic Sources

None

3.5 New Developments with Fugitive or Uncontrolled Sources

None

4 Local / Regional Air Quality Strategy

Welwyn Hatfield Borough Council has not produced a local air quality strategy. This is due to the fact that in the past we have not experienced any breaches of the air quality objectives. We feel that at this time it would be premature to produce a strategy on the limited knowledge we have regarding the most recent results.

We intend to carry out more intensive monitoring in the area around Comet Way to gather more information on how the pollution levels are at the receptor locations. In addition we will continue to monitor at the same location in Comet Way so we can analyse any trends or change in air quality over the next 6 to 12 months.

As part of the Hertfordshire and Bedfordshire air quality group we are trying to work on and build a county wide air quality strategy. We are working closely with Hertfordshire County Council to promote and work on improving the air quality across the county. This strategy will ensure that each local authority area is working towards the same goals and objectives.

5 Planning Applications

We do not currently have any planning applications that cause concern with regards to air quality. We are currently monitoring air quality in locations relative to the local plan. There will be a significant number of new housing developments built within the next 10 years. We have located these monitoring sites to provide us with long term background monitoring results. This will assist us with the development consultation process when the planning applications are submitted.

6 Air Quality Planning Policies

The Council's District Plan was adopted in April 2005. The plan includes the following section:

Air Quality
5.46 The maintenance of high air quality is a major factor affecting quality of life. Major developments, road related development, traffic levels and some types of industry can increase emissions which reduce air quality. The Environment Act 1995 places a duty on local authorities to review and assess air quality in their districts. Those areas that are expected to exceed national guidelines in the year 2005 will be deemed Air Quality Management Areas (AQMAs) and the local authority must devise a strategy to reduce pollution concentrations. The review is underway in Welwyn Hatfield District, but it is unlikely that any AQMAs will be identified. However, provision is made in the following policy to cover the possibility.

Policy R18 - Air Quality
The Council will have regard to the potential effects of a development on local air quality when determining planning applications. Consideration will be given to both the operational characteristics of the development and to the traffic generated by it. Any development within areas designated as Air Quality Management Areas must have regard to guidelines for ensuring air quality is maintained at acceptable levels as set out in the Air Quality Strategy.

7 Local Transport Plans and Strategies

A new Local Transport Plan (LTP3) for Hertfordshire has now been published, and covers the period 2011-2031

http://www.hertsdirect.org/services/transtreets/tranpan/ltp/

This new Local Transport Plan sets out the transport strategy for Hertfordshire (over the next 20 years), the goals and challenges to be met, and outlines a programme of transport schemes and initiatives (interventions). The various interventions are to be delivered over the short, medium and longer term but the present uncertainties over funding mean their timing cannot be assured. Targets have also been set so that progress towards meeting the strategy objectives can be measured.

8 Climate Change Strategies

The latest copy of the Welwyn Hatfield Climate Change Strategy was published in January 2010. The strategy includes 10 key themes, Energy Efficiency, Water, Biodiversity, Planning, Waste and Recycling, Procurement, Transportation, Community Engagement, Health, and Adaptation. The Themes on Transportation and Health have direct links to Air Quality. In terms of Transportation the strategy states “The Council has a role in the development and implementation of transport policy, both in its role as local planning authority (see Key Theme 4 Planning) and in partnership working with Hertfordshire County Council. Activities involve supporting local bus services, providing free bus passes, promoting cycling and walking, operating parking enforcement, and new parking control schemes. In addition the Council operates numerous car parks across the borough.” The Council takes the links between Air Quality and Health very seriously in respect of the likely effects of Climate Change which are predicted to result in elevated Ozone levels during hotter drier summers. In this respect the following is included within the strategy. “As founder members of the Herts Beds Air monitoring network we will continue to provide real time data on air quality within the Borough of Welwyn Hatfield”

9 Implementation of Action Plans

We have not produced an action plan at this time. However, we do plan to increase monitoring in the significant area. If the increased monitoring demonstrates that we need to declare an air quality action area then an action plan will be produced.

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

The monitoring results show that we have breached the air quality objective for N02 at one of the diffusion tube locations. This is significant and we are taking actions to carry out increased monitoring in the locality to ascertain the extent of the issue. We feel that it would be premature to declare an air quality action area based upon one monitoring location. Plans are now in place to step up the intensity of monitoring within this area.

We have been successful with regard to the amount of reliable data capture we have achieved this year. In the past new monitoring locations have been affected by members of the public stealing the diffusion tubes. Measures are now in place to keep the diffusion tubes secure and the data capture demonstrates this. We have devoted a lot of resource to improving our monitoring network and we are pleased to report on the success of this work. We currently have very good coverage throughout the borough and the monitoring locations are well established. This will enable us to accurately monitor trends in air quality levels for the future.

In the main the bias adjusted results have stayed fairly consistent over the past few years. In fact the results for 2015 are slightly better than previous years. This is most likely attributed to the reduction of old motor vehicles on our road network and the introduction of more fuel efficient cleaner vehicles.

We will continue to monitor in same locations with the addition of the new BAM 1020 continuous analyser along with the extra 3 diffusion tube locations. While we are satisfied with the improvements that have been made to our monitoring network there is always still room for improvement. Air quality is a key priority for us which is why we will seek further funding to develop the network in the future as one of our ongoing targets.

10.2 Conclusions relating to New Local Developments

None

10.3 Other Conclusions

Air Quality Related Complaints

The table below shows a list of air quality related complaints that Welwyn Hatfield Council's Environmental Health team investigated from 1st January – 31st December 2015.

Air Quality Complaints

Type	No of Complaints
Domestic Smoke Complaints	74
Commercial Smoke Complaints	17
Domestic Fumes & Gases	3
Dust Complaints	7
Odour Domestic and Commercial	68
Total	169

10.4 Proposed Actions

The new monitoring data contained in this report has not identified the requirement to undertake a detailed assessment of Air Quality within the area at this time. However, we will be placing 3 new monitoring locations close to the area that has breached the objective level. We will monitor these sites closely and determine further actions required when we obtain the results.

11 References

Welwyn Hatfield Air Quality progress report 2014.

Welwyn Hatfield Update and Screening Assessment 2015.

Herts and Beds Air Quality Network – http://www.hertsbedsair.net/

Air Quality Data Management http://www.aqdm.co.uk – Validation and Ratification process

Defra, 2009a. Local Air Quality Management, Technical guidance LAQM.TG09. Defra, London.

Hertfordshire County Council Local Transport Plan (LTP3)
http://www.hertsdirect.org/services/transtreets/tranpan/ltp/

Welwyn Hatfield Borough Council Climate Change Strategy 2010

Welwyn Hatfield Borough Council District Plan 2005

Appendices

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The bias adjustment factor for 2015 was obtained from the National Diffusion Tube Bias Adjustment Factor Spreadsheet.

Year	Bias adjustment factor
2004	0.88
2005	0.88
2006	0.79
2007	0.82
2008	0.80
2009	0.83
2010	0.85
2011	0.83
2012	0.79
2013	0.80
2014	0.81
2015	0.81

QA/QC of diffusion tube monitoring

Our diffusion tubes are analysed by ESG (Environmental Scientifics Group)

The samples have been analysed in accordance with ESG's standard operating procedure HS/WI/1015 issue 15. This method meets the guidelines set out in DEFRA's 'Diffusion Tubes For Ambient NO2 Monitoring: Practical Guidance.'

The tubes were prepared by spiking acetone:triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using a segmented flow autoanalyser with ultraviolet detection. All samples were received in good condition, unless otherwise stated in the comments field of results table. Please note:

As set out in the practical guidance, the results were initially calculated assuming an ambient temperature of 11^{o}C, the reported values **have** been adjusted to 20^{o}C to allow for direct comparison with EU limits.

The reported results have not been bias adjusted.

This analysis of diffusion tube samples to determine the amount of nitrogen dioxide present on the tube is within the scope of our UKAS schedule. Any further calculations and assessments requiring exposure details and conditions fall outside the scope of our accreditation. In the WASP intercomparison scheme for comparing

spiked Nitrogen Dioxide diffusion tubes, ESG currently holds the highest rank of a **Satisfactory** laboratory.

Appendix B: Other Information

Table 2.8 List of Current LAPPC Permits

PG 6/34b (06) - Respraying of Road Vehicles	
Squire Furneaux Saab	36 Brownfields, Welwyn Garden City, Hertfordshire, AL7 1AN
Brooks and Stratton	14 Burrowfield, Welwyn Garden City, Hertfordshire, AL7 4SN
Welspray Accident Repair Centre	12 Southfield, Welwyn Garden City, Hertfordshire, AL7 4ST
PG 6/46 (11) - Dry cleaning	
Lady Valet Dry Cleaners	25 Station Road, Cuffley, Potters Bar, Hertfordshire, EN6 4HX
Johnsons Dry Cleaners	43 Fretherne Road, Welwyn Garden City, Hertfordshire, AL8 6NY
Swift Dry Cleaners	8 The Arcade, Hatfield, Hertfordshire, AL10 0JY
Charlies Valet	1 Bradmore Green, Brookmans Park, Hatfield, Hertfordshire, AL9 7QW
Charlies Cleaning	8 Parkhouse Court, Hatfield, Hertfordshire, AL10 9RQ
Brookmans Park Dry Cleaning Company	87 Bradmore Green, Brookmans Park, Hatfield, Hertfordshire, AL9 7QT
Welwyn Dry Cleaners	37 Wigmores North, Welwyn Garden City, Hertfordshire, AL8 6PG
PG 3/14 (04) - Lime Processes	
Sika (UK) Ltd	Watchmead, Welwyn Garden City, Hertfordshire, AL7 1BQ
Gilbertson and Page Ltd	45-55 Brownfields, Welwyn Garden City, Herts. AL7 1LF
PG 3/16 (04) - Mobile Crushing and Screening	
Redhead Demolition Co Ltd	2c Blenheim Court, Brownfields, Welwyn Garden City, Hertfordshire, AL7 1AN
B P Mitchell, Haulage Contractors Ltd	Burnside, Hertford Road, Hatfield, Hertfordshire, AL9 5RB
PG 1/14 (06) - Unloading of Petrol into Storage at Petrol Stations	

Bell Bar Service Station	Great North Road, Hatfield, Hertfordshire, AL9 6DB
Tesco Stores Ltd	Tesco Stores Ltd - Petrol Station, Tesco Stores Ltd, Great North Road, Hatfield, Hertfordshire, AL9 5JY
Nodeway Service Station	Welwyn By Pass Road, Welwyn, Hertfordshire, AL6 9HP
Asda Stores Ltd	98 Town Centre, Hatfield, Hertfordshire, AL10 0JW
Eastbridge Service Station	Bridge Road East, Welwyn Garden City, Hertfordshire, AL7 1LE
Morrisons Petrol Station	40 Black Fan Road, Welwyn Garden City, Hertfordshire, AL7 1RY
Total Petrol Station	Stanborough Road, Welwyn Garden City, Hertfordshire, AL8 6XA
Esso Service Station	51-53 London Road, Woolmer Green, Knebworth, Hertfordshire, SG3 6JB
Tesco Stores Ltd	Cirrus Building A, Falcon Way, Welwyn Garden City, Hertfordshire, AL7 1AB