2011 Air Quality Progress Report for *Rugby Borough Council*

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

April, 2011

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Report Reference number	Version 04.11
Date	April 2011

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Rev No	Comments	Checked by	Approved by	Date
1	Draft for comment	SJP	GMC	April 2011
2	Draft Version 2	SJP	GMC	May 2011
3	Final Version	SJP	GMC	May 2011

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Job No 60035909 Reference AJT 05.11 .....Date Created April 2011

Executive Summary

In fulfilment of Local Air Quality Management duties, AECOM Ltd. was commissioned by Rugby Borough Council to compile an Air Quality Progress Report.

The report documents changes in monitored pollutant concentrations within the Borough since the publication of the 2010 Progress Report. New local developments and planning applications which have the potential to affect air quality are also summarised. Local Transport Plan and Air Quality Action Plan measures are presented, together with an indication of progress.

Exceedences of the annual mean NO_2 objective continue to be monitored at several locations within the Borough that have historically recorded exceedences. These locations are within the current boundary of the AQMA. However, the annual mean NO_2 concentration at Newbold Road AQMS 5 in 2010 is the first year since monitoring began that the annual mean objective has been exceeded at this location.

The trend of NO_2 in Rugby in recent years is potentially one of increasing concentrations. Since 2008 NO_2 diffusion tube monitoring has indicated concentrations above or close to the annual mean objective along Newbold Road, Corporation Street, Oliver Street and the Warwick Street Gyratory. At the Webb Ellis Pub site, the annual mean NO_2 concentration in 2010 was greater than 60 $\mu g/m^3$, indicating the potential for the hourly objective for NO_2 to be exceeded at this location.

The concentrations of all other key pollutants are below the prescribed objectives, there is therefore no need to proceed to a Detailed Assessment for any other pollutant.

Rugby Borough Council will expand upon the current level of monitoring within the Borough by creating a triplicate diffusion tube site at the Webb Ellis Pub to investigate in greater detail and with greater certainty the elevated levels of NO_2 that were measured at this location in 2010. This will be supplemented by an additional short-term monitoring programme in the town centre to investigate potential future pedestrianisation considerations. Upon ratification of the 2011 data, Rugby Borough Council will be in a position to conclude whether the potentially increasing trend in NO_2 at monitoring locations, along Newbold Road and Corporation Street in particular, are part of an actual increase or a short-term effect caused by the construction of the Rugby Western Relief Road. At this point, Rugby Borough Council will also review the existing AQMA order and decide whether amendments are needed to include the hourly objective. This information will be reported within the 2012 Updating and Screening Assessment.

A review of Rugby Borough Council's Air Quality Action Plan will be undertaken during the 2011/2012 financial year as soon as clarification has been made of the proposed pedestrianisation scheme and the impact of the Rugby Western Relief Road, together with full receipt and analysis of additional air quality monitoring results from fifteen new diffusion tube sites.

In June 2011 Rugby Borough Council will establish an Air Quality Monitoring Task Group. This will consist of elected members, the Environmental Services department and other interested parties. The Task Group will review the air quality monitoring network and direct and inform the future operation of the network in Rugby. The findings of the Task Group will be reported in the forthcoming update to the Air Quality Action Plan.

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1 Introduction

1.1 Description of Local Authority Area

Rugby Borough Council is situated in north east Warwickshire to the west of the M1 and east of Coventry and is bound to the north by the M6. The Borough covers an area of 138 square miles surrounding the town of Rugby. The main pollutants of concern in Rugby Borough, as in most urban areas of the UK, are associated with road traffic, in particular NO_2 and particulate matter at locations close to busy, congested roads where people may live, work or shop. Previous Review and Assessment reports and local knowledge have identified areas where UK objectives may be exceeded.

Rugby Borough Council has six Part A1 installations that are regulated and inspected by the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2010, including the cement works, which are located close to the town centre and are a source of NO_X, SO_2 and PM_{10}.

The Borough has a number of other industrial installations of significance in terms of air quality. There is one Part A2 process for the manufacturing of drinks cans which involves solvent based coating processes. In addition, there are 34 minor (Part B) installations. Each process / installation is regulated under the Environmental Permitting (England and Wales) Regulations 2010. The processes / installations are regularly inspected by the Rugby Borough Council Regulatory Services unit (formerly Environmental Health) to ensure they are controlling their emissions to atmosphere.

The majority of the urban area of Rugby town is classed as a smoke control area making it an offence under the Clean Air Act 1993 to emit smoke from a chimney caused by the burning of unauthorised fuel or the use of an unauthorised appliance.

1.2 Purpose of Progress Report

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 (LAQM) 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.

This document reports on the progress made by Rugby Borough Council in implementing LAQM, the impacts of new developments within the Borough on local air quality and the progress made towards achieving the air quality objectives. It also serves to report on progress made in implementing measures detailed in the Air Quality Action Plan and the successes and shortcomings of the Action Plan.

1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu g/m^3$ (for carbon monoxide the units used are milligrammes per cubic metre, mg/m^3). Table 1.1. includes the number of permitted exceedences in any given year (where applicable).

Table 1.1: Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Maximum daily running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Rugby Borough Council completed the required three rounds of Review and Assessment of air quality in its administrative area between 1998 and 2008, consisting of the stages described below:

Round One comprised two stages conducted between 1998 and 2001:

- **Stage 1 (Review and Assessment)** involved the identification of the main sources of air pollution within and around Rugby Borough, reviewing the levels of air pollutants for which prescribed standards and objectives have been set, and estimating the likely future levels.
- **Stage 2/3** required the local authority to provide further screening of pollutant concentrations within the area to assess whether the air quality objectives would be achieved by the target date and a more complex assessment of monitoring and modelling which in Rugby Borough identified no exceedances of national air quality objectives.

Round Two was completed between 2003 and 2006 and involved a modified approach to the Review and Assessment process.

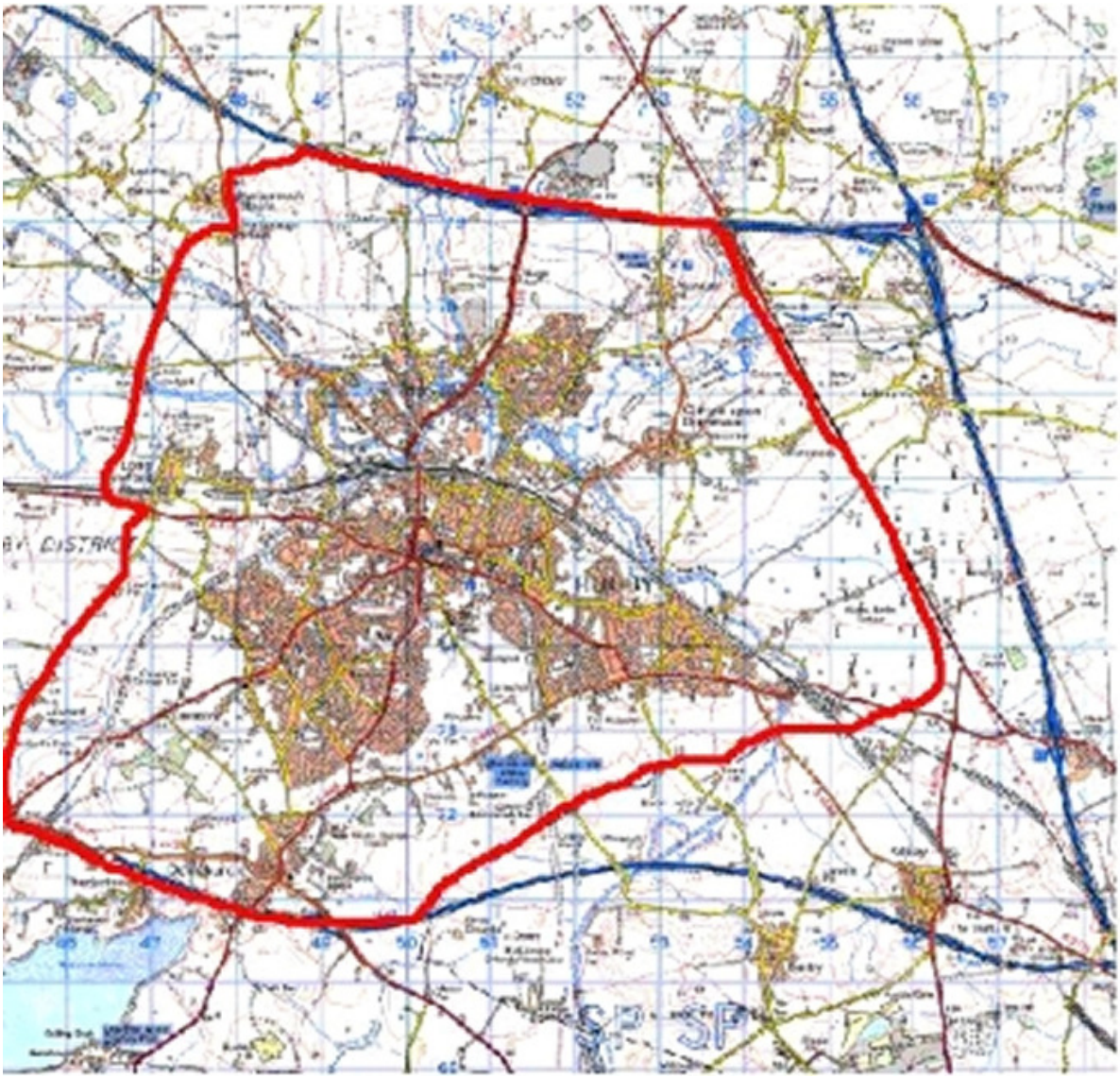
The first stage of the second round was an **Updating and Screening Assessment** [i] (USA) that was completed in 2003. The USA identified a number of areas that may lead to exceedances of the air quality objectives, thus requiring Rugby Borough Council to proceed to a **Detailed Assessment** [ii].

The Detailed Assessment was published in 2004 and involved an accurate and detailed study of current and future air quality. The assessment identified that annual average levels of NO_2 were at risk of being exceeded on a number of major roads in the centre of Rugby town and in Dunchurch. These findings led to the declaration of Rugby's AQMA in 2004. A map depicting the extent of the AQMA is shown in Figure 1.1 below.

During the Detailed Assessment, a risk of exceedance of the PM_{10} national air quality objectives was identified because of emissions (stack, low level point source and fugitive) from the CEMEX cement plant in Rugby. A **Detailed Assessment of Particulate Matter**[iii] was completed in 2005 which predicted that the national air quality objectives for PM_{10} would be met.

The **Further Assessment**[iv] required the local authority to undertake further detailed monitoring of the air quality within the AQMAs in order to confirm that the decision to declare the areas as AQMAs was justified. The Further Assessment involved calculations to predict the scale of improvement that was needed for each pollutant exceeding the air quality objectives to satisfy those objectives. Consideration of the extent to which different sources contribute to the problem was also made. The Further Assessment was undertaken in respect of the AQMA and was completed in December 2005. It was subsequently amended following comments received by Defra, the amended version being published in February 2006. It identified that only one property in the Borough was likely to be exposed to levels above the national air quality objective and that decreasing NO_2 emissions and the planned Rugby by-pass (the Rugby Western Relief Road) would result in compliance within 2 years.

Figure 1.1: Geographical Boundary of the Rugby Borough AQMA



Note: Following the Detailed Assessment of 2004, Rugby Borough Council declared an AQMA for nitrogen dioxide encompassing the whole Borough. The area covers the whole urban area of Rugby bounded by the southern boundary with Daventry District Council, the A5 and the M6, minor roads to the west of Long Lawford, the A45 and the M45

Round 3 of the Review and Assessment process commenced in 2006 with the production of a **USA** [v]. The USA concluded that the air quality objectives were unlikely to be exceeded at any location within the Borough for six of the seven pollutants assessed. It was concluded that exceedances of the NO_2 objective persisted at several locations within the present AQMA in respect of diffusion tube monitoring results. The declaration of the AQMA was upheld and there was no need to proceed to a Detailed Assessment.

The **Fourth Round** of Review and Assessment commenced in 2009 with the production of the **Updating and Screening Assessment (2009)** [vi]. The conclusion of the USA was to proceed to a Detailed Assessment in light of a new superstore development and the proposed extension of the pedestrianised zone in the town centre, and to investigate the implications of the developments in the Council's ability to implement its Air Quality Action Plan. Updated monitoring results indicated continued exceedances of the annual mean NO_2 objective at a number of locations of relevant exposure. It was concluded that exceedances of the air quality objectives for any of the other key pollutants were very unlikely.

The Detailed Assessment of Nitrogen Dioxide [vii] was published in its final form in January 2011. The main findings were that long-term monitoring results in Rugby indicated continued exceedances of the annual mean NO_2 objective at two locations in the Borough, namely Oliver Street and the Warwick

Street Gyratory. The report also concluded from the results of a short-term monitoring programme, implemented as part of the Rugby Pedestrianisation Scheme study, that potential exceedances could occur along a number of streets in Rugby Town Centre as a consequence of poor dispersion, i.e. street canyon effects. Dispersion modelling undertaken during the Detailed Assessment predicted that the highest NO_2 concentrations would be along the B5414 Church Street/North Street/Clifton Road.

It was recommended that the existing AQMA order remained in place and that the long-term monitoring survey of NO_2 should be continued. Additional recommendations were made to supplement the existing monitoring network with a number of new monitoring locations across the Borough, focusing on pollution hotspots and narrow streets, to provide better information on the spatial variation of pollution concentrations and to assess changes in pollution levels following the completion of the Rugby Western Relief Road (RWRR).

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Since the 2010 Progress Report there have been no major changes to the continuous monitoring network in Rugby. AQMS 5, located at the junction of Newbold Road and Essex Street is the only continuous monitoring station at present in the Borough. This station monitors concentrations of oxides of nitrogen (NO_X) and particulate matter (PM_{10}). AQMS 5 is equipped with a Thermo Electron Chemiluminescence Analyser for monitoring NO_X and NO_2. Measurements of PM_{10} are made using a TEOM-FDMS.

Airborne particulate matter concentrations are monitored at a further five locations using Turnkey Osiris dust monitors. Since the production of the 2010 Progress Report two minor changes have been made to the positioning of the Turnkey Monitors. At Lawford Farm the construction of a new farm building in autumn 2010 meant that the monitor had to be repositioned on the new building. The new location is approximately 30 metres to the south of its previous location, in the direction of the adjacent landfill site. Following safety concerns over the location of the Turnkey monitor at Townsend Lane, the unit was moved to a new location in September 2010. It was relocated approximately 25 metres to the north, on a lamppost at the junction of Townsend Lane and Thurnmill Road.

Further details of the monitoring methods are presented below. Maps indicating the positions of the monitoring locations are shown in Figures 2.1 to 2.6. Tabulated details of the automatic monitoring sites can be found in Table 2.1.

PM_{10} concentrations at AQMS 5 Newbold Road are determined by TEOM-FDMS and therefore the data require no correction to ensure gravimetric equivalence. Measurements of airborne particulate matter by the Turnkey Osiris monitors are presented uncorrected as previous co-location studies in Rugby indicated a good agreement between TEOM measurements and Turnkey Osiris measurements.

Further details on the continuous monitoring equipment used in Rugby and QA/QC procedures can be found in Appendix 1.

Table 2.1: Details of Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref		Pollutants Monitored	Monitoring Technique	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
AQMS 5 Newbold Road	Roadside	450130	275849	NO_X, NO, NO_2, PM_{10}	Chemiluminescence (NO_X); TEOM-FDMS (PM_{10})	Y	Y (1m)	6 m	Y
T2 Lawford Farm	Rural	444853	274080	TSP, PM_{10}, $PM_{2.5}$, PM_1	Turnkey Osiris	Y	N	N/A	N
T8 Townsend Lane	Industrial	448125	275865	TSP, PM_{10}, $PM_{2.5}$, PM_1	Turnkey Osiris	Y	Y	2 m	N
T10 Avenue Road	Industrial	449289	275607	TSP, PM_{10}, $PM_{2.5}$, PM_1	Turnkey Osiris	Y	Y	<1 m	Y
T14 Russelheim Way	Roadside	450016	274966	TSP, PM_{10}, $PM_{2.5}$, PM_1	Turnkey Osiris	Y	Y	2 m	Y
T16 Murray Road	Roadside	451132	275887	TSP, PM_{10}, $PM_{2.5}$, PM_1	Turnkey Osiris	Y	Y	2 m	Y

Figure 2.1: Monitoring Locations in Rugby Town Centre

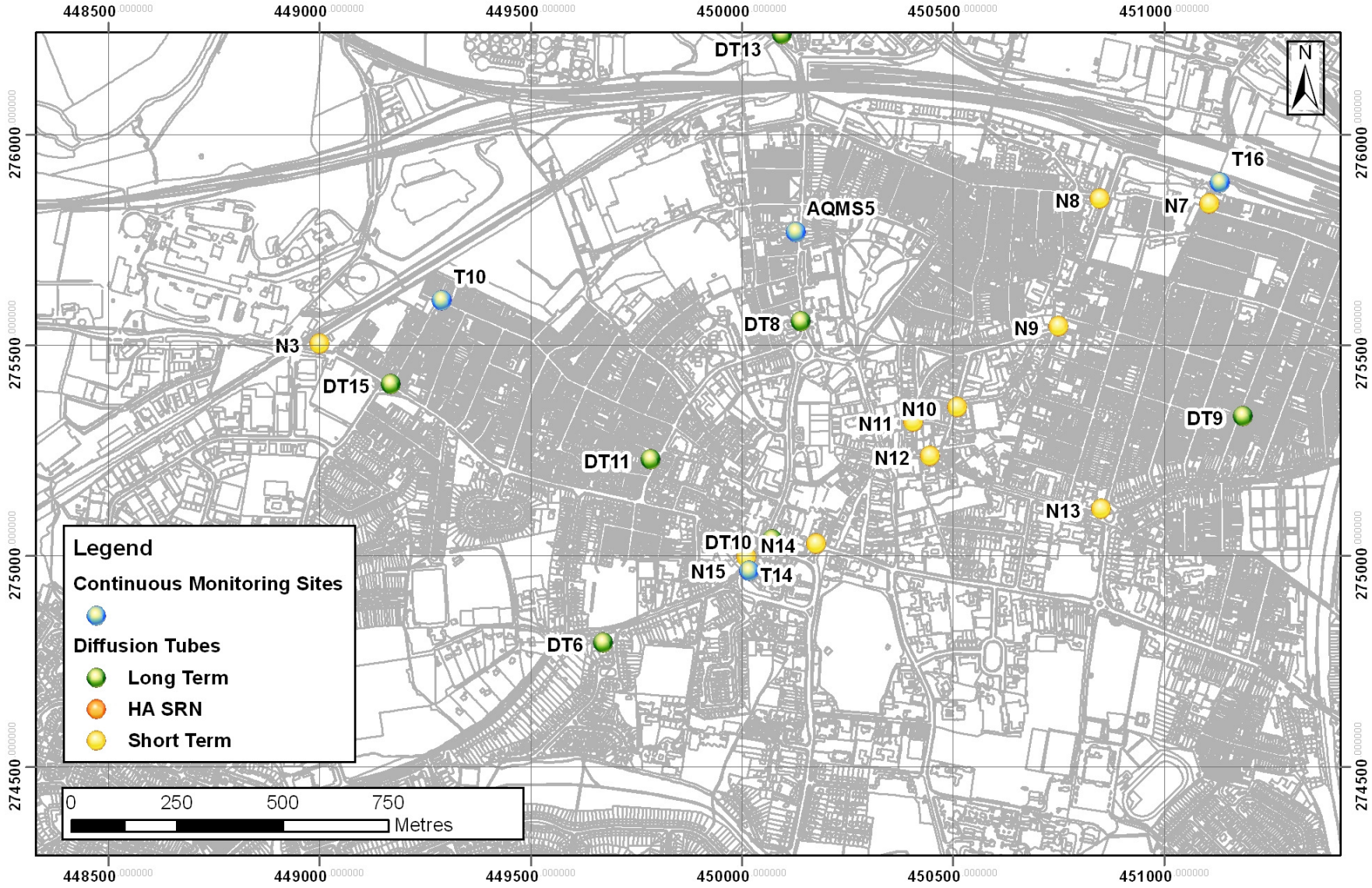


Figure 2.2: Other Monitoring Locations in the Borough of Rugby

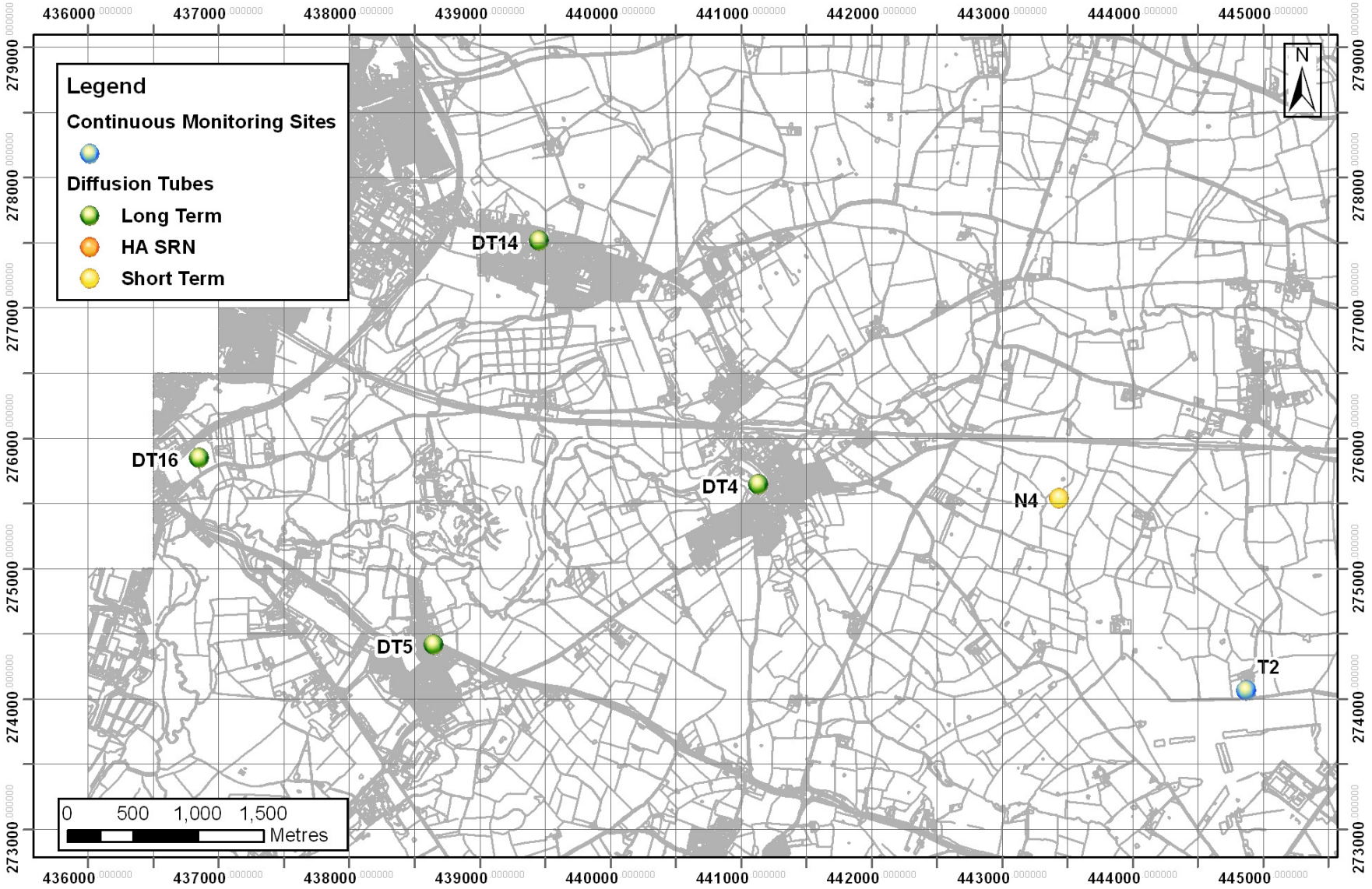


Figure 2.3: Other Monitoring Locations in the Borough of Rugby

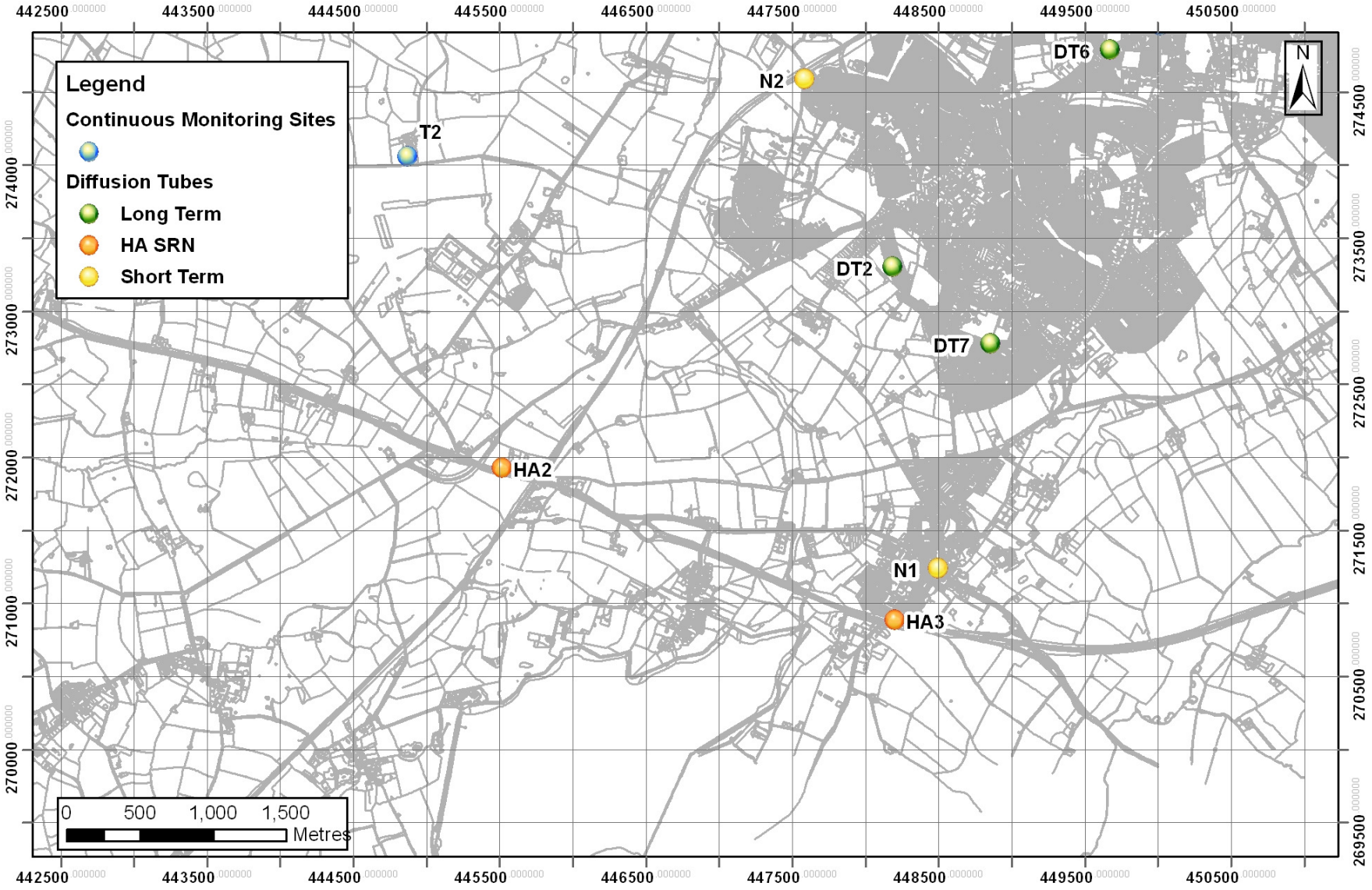


Figure 2.4: Other Monitoring Locations in the Borough of Rugby

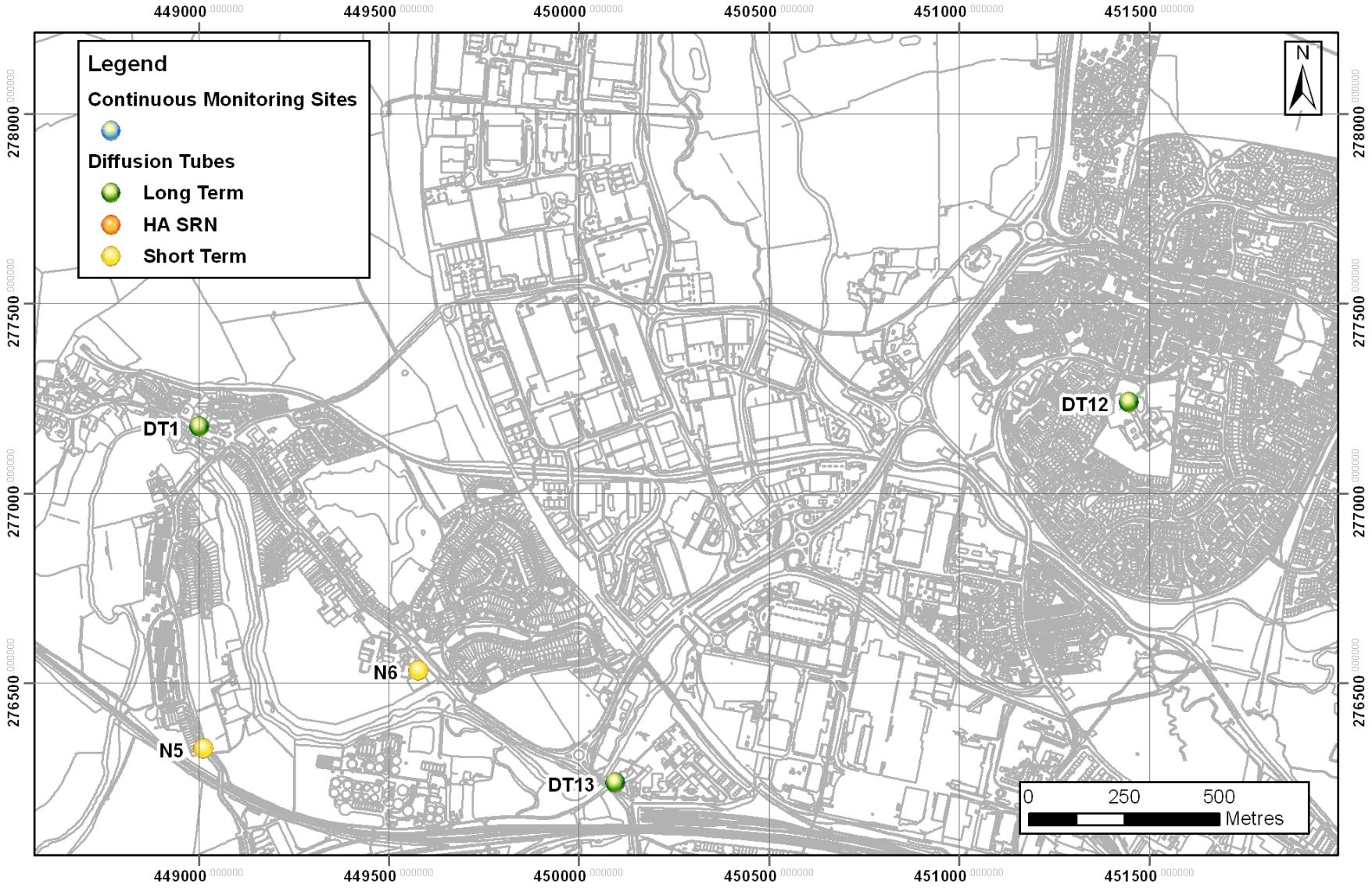


Figure 2.5: Other Monitoring Locations in the Borough of Rugby

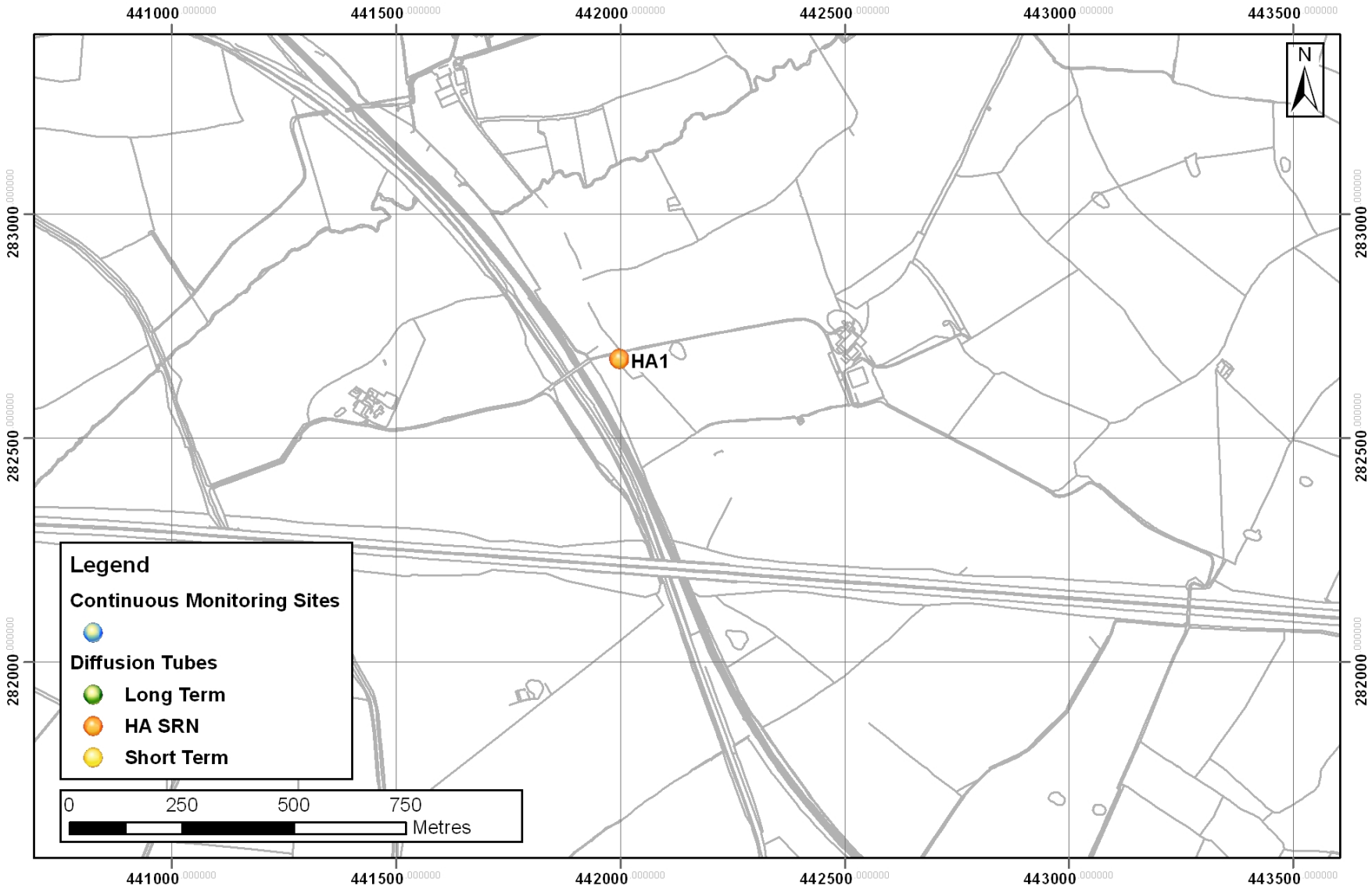
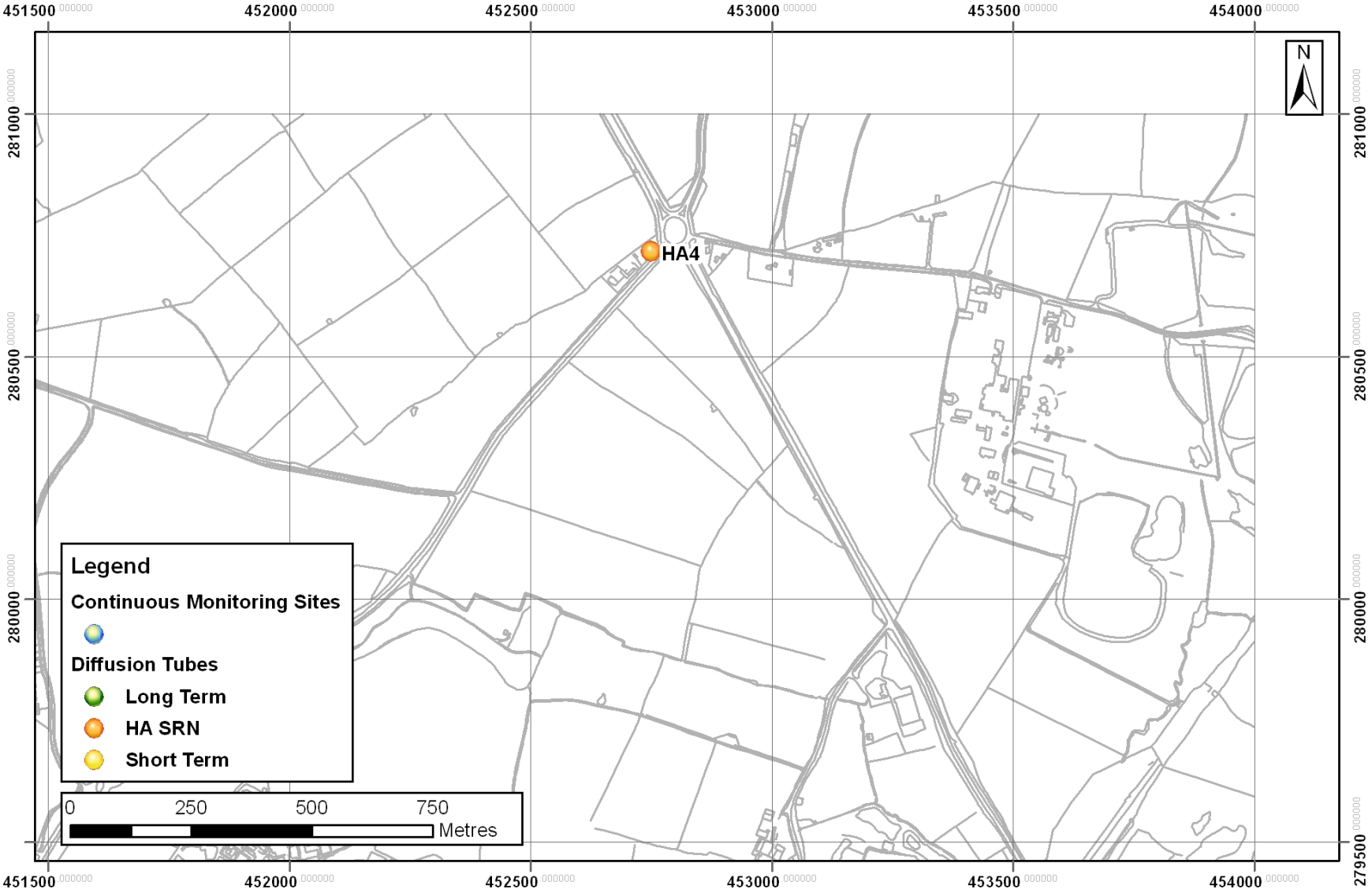


Figure 2.6: Other Monitoring Locations in the Borough of Rugby



2.1.2 Non-Automatic Monitoring Sites

Rugby Borough Council has operated a network of NO_2 diffusion tubes since 2000. There are currently seventeen diffusion tube locations across the Borough, including one co-location study alongside the continuous monitoring station at Newbold Road. Further details are provided in Table 2.2 and Figures 2.1 to 2.6. There have been no changes to the long-term diffusion tube monitoring network in Rugby since the previous review and assessment report.

Rugby Borough Council carried out an air quality assessment of a proposed extension to the town centre pedestrianised zone, followed by a Detailed Assessment of Nitrogen Dioxide, to assess the possible implications of the proposed pedestrianisation scheme and a number of other major local developments on local air quality. Short-term diffusion tube monitoring conducted to determine baseline conditions in the town centre area, revealed potential exceedences of the annual mean air quality objective for NO_2. In light of this monitoring Rugby Borough Council installed an additional 10 diffusion tubes at locations around Rugby town centre to investigate pollutant concentrations in greater detail. A further 5 diffusion tubes have been positioned in the surrounding areas of Dunchurch, Lawford Road and alongside the RWRR to improve the spatial coverage of the NO_2 monitoring.

Monitoring at the new locations commenced in November 2010 for an initial period of six months, after which time the results will be reviewed before consulting on what further action is taken. The results of the short-term monitoring survey will be annualised according to the methodology in LAQM.TG(09) and reported in the 2012 USA. Details of these monitoring sites are presented in Table 2.3 and Figures 2.1 to 2.6.

Rugby Borough Council is participating in the Highways Agency air quality monitoring survey of the strategic road network (SRN) in Rugby. These include four diffusion tube monitoring sites located at sensitive residential receptor locations in proximity to the M6, A5, A45 and M45. Details of the SRN and short-term monitoring sites are shown in Table 2.3.

Table 2.2: Details of Non- Automatic NO_2 Monitoring Sites – Long Term Monitoring Sites

Site Ref	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?
DT 1	10 Newbold Rd, Opposite Shops	K	449000	277178	NO_2	Y	Y	<1 m	N
DT 2	Marton A423	R	440815	269039	NO_2	Y	Y (5m)	<1 m	N
DT 3	69 School St, Long Lawford	UB/I	447314	276168	NO_2	Y	Y	15 m	N
DT 4	St Margaret's School, Wolston	UB	441131	275648	NO_2	N	N	90 m	N
DT 5	Ryton Village Hall, High Street	R/I	438642	274418	NO_2	N	Y	5 m	Y
DT 6	2 Westfield Rd, Bilton	UB	449671	274795	NO_2	Y	Y	10 m	N
DT 7	68 Cymbeline Way, Bilton	UB	448853	272782	NO_2	Y	Y	20 m	N
DT 8	EHO Dept, Newbold Rd	R	450139	275557	NO_2	Y	Y	<1 m	Y
DT 9	Cambridge St. / Argyle St.	UC	451187	275333	NO_2	Y	Y	5 m	N
DT 10	Webb Ellis Pub, Corporation St.	R	450071	275039	NO_2	Y	Y	5 m	Y
DT 11	15 Oliver St., New Bilton	R	449783	275230	NO_2	Y	Y	5 m	N
DT 12	Boughton Leigh School, Brownsover	UB	451447	277242	NO_2	Y	N	56 m (school parking area <1 m)	N
DT 13	Avon Mill Pub, Newbold Rd	I	450094	276239	NO_2	Y	Y	17 m	N
DT 14	Binley Woods Village Hall	UB	439450	277523	NO_2	N	Y	20 m	N
DT 15	Lawford / Jubilee St, Arnie's Batch	K	449167	275409	NO_2	Y	Y	<1 m	Y
DT 16	Marriot / Courtyard Hotel, A45, Ryton	R/I	436848	275852	NO_2	N	Y	19 m	Y
DT 17	AQMS 5 Newbold Road	R	450130	275849	NO_2	Y	Y	6 m	N

Table 2.3: Details of Non- Automatic NO_2 Monitoring Sites – Additional Monitoring Sites

Site Ref	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?
N1	Dun Cow, Dunchurch Square	R	448496	271244	NO_2	Y	Y	5 m	Y
N2	Bilton Lane near RWRR	N	447579	274594	NO_2	Y	Y	15 m	Y
N3	Lawford Road Flats former Simms Scrapyard	N	448999	275505	NO_2	Y	Y	22 m	Y
N4	Avenue Road/Campbell Street	R	449435	275543	NO_2	Y	Y	5 m	Y
N5	Parkfield Road No. 256	R	449011	276329	NO_2	Y	Y	5 m. 50 m to RWRR	Y
N6	Avon Valley School	UB	449576	276535	NO_2	Y	Y	35 m to Newblod Road. 50 m to RWRR	Y
N7	Murray Road-bus stop near train station	R	451107	275838	NO_2	Y	Y	3 m	Y
N8	Wood Street/Park Road	R	450848	275849	NO_2	Y	Y	5 m	Y
N9	Railway Terrace Station Bar	R	450750	275547	NO_2	Y	Y	5 m	Y
N10	Albert Street Alma Lodge Hotel	R	450510	275355	NO_2	Y	Y	5 m	Y
N11	Regent Street lamp post near Oxfam	R	450405	275329	NO_2	Y	Y	5 m	Y
N12	Church Street Town Fryer	R	450445	275238	NO_2	Y	Y	5 m	Y
N13	Clifton Road Roundabout	R	450850	275112	NO_2	Y	Y	5 m	Y
N14	Lawrence Sheriff Street lamp post opposite flats	N	450175	275030	NO_2	Y	Y	13 m	Y
N15	6A Bilton Road. Big Yellow House	N	450010	274999	NO_2	Y		15 m	Y
HA1	M6 Nettle Hill Farm Cottages	N	441998	282678	NO_2	Y	Y	55 m	Y
HA2	A45 Ricky	N	445512	271931	NO_2	Y	Y	20 m	Y
HA3	M45 Toft Monks	N	448199	270892	NO_2	Y	Y	20 m	Y
HA4	A5 Farndale	N	452748	280718	NO_2	Y	Y	14 m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

An overview of the data from each of the Rugby automatic monitoring locations is presented in Sections 2.2.1 to 2.2.5 below. An overview of non-automatic monitoring undertaken within the Borough is also given. Summary tables comparing the measured concentrations with the air quality objectives and providing data capture statistics are included.

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Nitrogen dioxide concentrations in Rugby are monitored by one continuous monitor. The annual mean concentration measured by the continuous analyser confirms that the annual mean NO_2 objective was achieved at this location in all years between 2004 and 2009 (Table 2.4). Between 2004 and 2006 annual mean NO_2 concentrations remained relatively constant at the Newbold Road site. Whilst data for 2007 suggests a reduction in NO_2 concentrations, this data is not directly comparable to previous years as the analyser was re-located during this period. Whilst monitored NO_2 concentrations between 2008 and 2009 again remained relatively constant, the annual mean NO_2 concentration increased in 2010 to exceed the annual mean NO_2 objective. This is the first year since monitoring began at Newbold Road that the annual mean NO_2 objective has been exceeded. The annual mean NO_2 concentration in 2010 was 40.9 µg/m^3. Figure 2.5 shows the trend in quarterly mean NO_2 concentrations at Newbold Road.

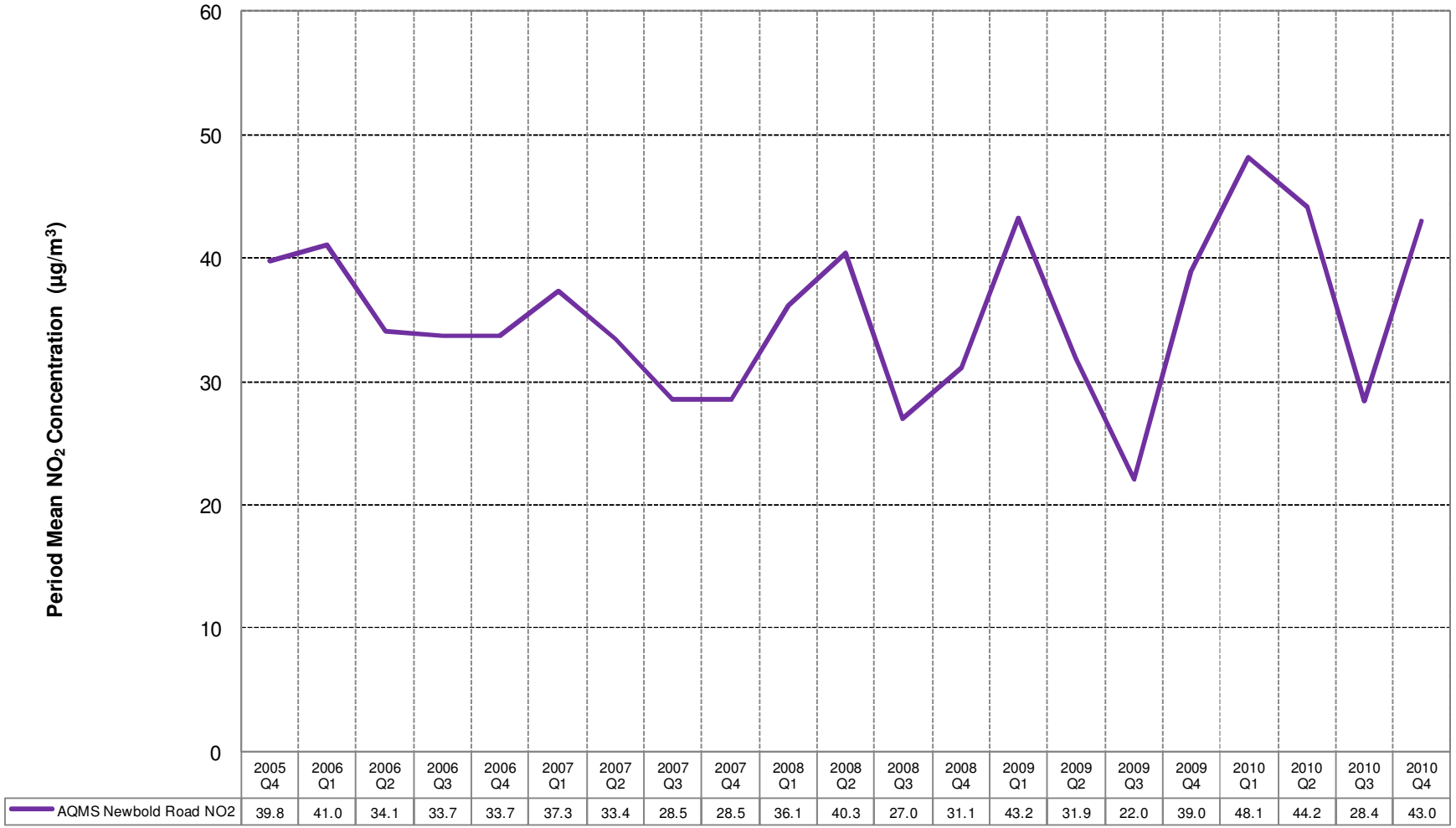
The continuous monitoring data shows there have been no exceedances of the hourly NO_2 standard of 200 µg/m^3 since monitoring began at Newbold Road in 2004, and therefore the hourly NO_2 objective has been achieved in all years to date.

Table 2.4: Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with Air Quality Objectives

Site Reference	Location	Within AQMA?		2004	2005	2006	2007	2008	2009	2010
AQMS 5	Newbold Road	Y	Data Capture (%)	99	99	95	88	99	99	99
			Annual Mean Concentration (µg/m^3)	35.3 [A]	36.3 [A]	35.7 [A]	32.4 [B]	33.6	34.0	40.9
			Number of Exceedences of Hourly Mean (200 µg/m^3) [C]	0	0	0	0 (115 [c])	0	0	0

[A] Monitoring station located outside the council offices at Newbold Road.
[B] Monitoring station moved to new location in October 2007 (see 2009 Updating and Screening Assessment for full details). 2007 Annual mean result incorporates data collected at both monitoring locations.
[C] Where data capture is less than 90% of a full year a 99.8th %ile concentration of hourly means has been calculated and is shown in brackets.

Figure 2.7: Five-Year Quarterly Mean NO_2 Concentrations at Newbold Road, Rugby



Diffusion Tube Monitoring Data

Diffusion tube monitoring continued at seventeen locations (including one triplicate site, Newbold Road) throughout the Borough in 2010. Thirteen of the locations lie within the currently designated AQMA and fifteen are located at sites with relevant exposure. Consistent with the results of 2008 and 2009, the 2010 diffusion tube monitoring results highlighted a number of sites exceeding the annual mean NO_2 objective, following bias adjustment.

For comparison, annual mean NO_2 concentrations for 2010 based on the national bias-adjustment factor are presented alongside the local bias-adjusted results. Details on the derivation of the bias-adjustment factors and the choice of factor to apply can be found in Appendix 1. Five locations exceeded the annual mean NO_2 objective after correction using the local bias adjustment factor (excluding the triplicate site at Newbold Road), and two locations were identified as likely to exceed the annual mean NO_2 objective after the application of the national bias adjustment factor (see Table 2.5).

It was decided to use the local bias adjustment factor due to the completeness of the available data and the fact that the LAQM.TG(09) suggests that the use of a locally derived factor is more appropriate than the use of a national factor. All references to bias adjusted results from this point forwards therefore assume the application of the local factor unless specifically stated.

After bias adjustment the highest annual mean NO_2 concentration in 2010 was monitored at Webb Ellis Pub, Corporation Street (DT 10; 61.4 µg/m^3) representing an exceedance of the annual mean NO_2 objective of 40 µg/m^3. The annual mean NO_2 objective was also exceeded at:

- EHO Department, Newbold Road (DT 8 ; 56.0 µg/m^3);
- Avon Mill Pub, Newbold Road (DT 13; 55.3 µg/m^3);
- 15 Oliver Street, New Bilton (DT 11; 50.3 µg/m^3);
- Lawford / Jubilee St, Arnie's Batch (DT 15; 45.4 µg/m^3); and
- Ryton Village Hall (DT 5; 40.7 µg/m^3).

Thirteen sites achieved data capture rates of greater than 90% and all sites achieved greater than 80% data capture. DT 2 (Marton A423), DT 3 (69 School St, Long Lawford) and DT 11 (15 Oliver Street, New Bilton) had 10 months of valid data out of 12 in 2010 (Table 2.5).

Since 2006 all diffusion tube sites have shown a general upward trend and in many cases the concentrations reported in 2010 are the highest since 2004 (Figures 2.8 and 2.9). However, significant variation in the bias adjustment factor applied in recent years (i.e. 0.78 and 0.81 in 2007 and 2009 respectively, and 0.99 and 1.14 in 2008 and 2010 respectively) means the trends shown should be treated with a degree of caution. The increase in monitored concentrations in 2010 may be in part due to the higher bias adjustment factor calculated and applied to the raw diffusion tube data. However, the continuous monitoring results from Newbold Road suggest that an increase in annual mean NO_2 concentrations did occur in 2010.

The continued monitored exceedances of the annual mean NO_2 objective along the Newbold Road / Corporation Street corridor and Oliver Street during 2010 may be due to the delayed opening of the Rugby Western Relief Road (opened October 2010).

The NO_2 concentration measured at the Webb Ellis Pub site indicates that the hourly objective may have been exceeded at this location during 2010. NO_2 monitoring data (both continuous and diffusion tube measurements) from Rugby and nearby AURN sites suggest that there was a regional increase in ambient NO_2 during 2010. The AURN data suggests that pollutant concentrations were influenced by meteorological conditions and regional factors prevalent during 2010 rather than an increase in local emissions. Rugby Borough Council completed a Detailed Assessment for NO_2 in January 2011 covering the Webb Ellis Pub location and a large part of the urban area of Rugby. A key conclusion of this report was that further monitoring should be undertaken to better inform NO_2 concentrations across Rugby. At this stage it is considered impractical to proceed to a Detailed Assessment or to amend the existing AQMA Order to include the hourly objective for NO_2 on the basis of results from one single diffusion tube monitoring site.

Rugby Borough Council will review the situation as part of the 2012 Updating and Screening Assessment and upon receipt of data from the additional diffusion tube monitoring programme in the

town centre. Due to space limitations and highways safety it is not feasible to install a continuous monitor at the Webb Ellis Pub site. Therefore, the Council will also add two tubes at the existing Webb Ellis Pub site to establish a triplicate site to investigate the precision of the monitoring data and determine the NO_2 concentration with greater accuracy.

Diffusion tube site DT5 was located at Ryton-on-Dunsmore village hall during 2010. This location does not represent "relevant exposure" in relation to the annual mean NO_2 objective. The nearest relevant exposure to the site are residential properties to the west of the monitoring site – these properties are approximately 20 metres from the kerbside of the nearest road (A45). The tube at DT5 was 7 metres from the kerbside. Applying the NO_2 fall off with distance calculator method (Figure 2.10 (as per LAQM.TG(09)) and using the mapped background NO_2 concentration for grid square 438500, 274500 for 2010 (13.4 $\mu g/m^3$), the predicted annual mean NO_2 concentration at the nearest receptor location is 31.2 $\mu g/m^3$, which is beneath the annual mean NO_2 objective. A Detailed Assessment for NO_2 in this area is therefore not required.

In February 2011 the diffusion tube at site DT5 had to be relocated as a result of the installation of a new boiler at the Village Hall and the exhaust flue exiting directly alongside the diffusion tube mounting. With no suitable alternative location on the building the tube was mounted on a lamp post approximately 30 metres to the west, at the junction of High Street and A45 London Road.

In all future Review and Assessment reports, Rugby Borough Council will state the distance to relevant exposure where appropriate and where necessary apply the NO_2 falloff with distance calculation to predict pollutant concentrations at locations of relevant exposure.

Table 2.5: Results of Nitrogen Dioxide Diffusion Tubes (2010)

Site Reference	Location	Within AQMA?	Data Capture (%)	Annual Mean Concentration 2010 (µg/m^3)	
				Local Bias Factor [A]	National Bias Factor [B]
DT 1	10 Newbold Rd, Opposite Shops	Y	100	30.7	22.9
DT 2	Marton A423	Y	83	31.2	23.2
DT 3	69 School St, Long Lawford	Y	83	28.6	21.3
DT 4	St Margaret's School, Wolston	N	100	21.9	16.3
DT 5	Ryton Village Hall, High Street	N	100	**40.7**	30.3
DT 6	2 Westfield Rd, Bilton	Y	100	28.5	21.2
DT 7	68 Cymbeline Way, Bilton	Y	92	24.8	18.5
DT 8	EHO Dept, Newbold Rd	Y	100	**56.0**	**41.8**
DT 9	Cambridge St. / Argyle St.	Y	100	31.0	23.1
DT 10	Webb Ellis Pub, Corporation St.	Y	100	**61.4**	**45.8**
DT 11	15 Oliver St., New Bilton	Y	83	**50.3**	37.5
DT 12	Boughton Leigh School, Brownsover	Y	100	34.3	25.5
DT 13	Avon Mill Pub, Newbold Rd	Y	100	**55.3**	**41.3**
DT 14	Binley Woods Village Hall	N	100	29.4	21.9
DT 15	Lawford / Jubilee St, Arnie's Batch	Y	100	**45.4**	33.9
DT 16	Marriot / Courtyard Hotel, A45, Ryton	N	92	31.5	23.5
DT 17	AQMS 5 Newbold Road Triplicate Mean	Y	92	**40.8**	30.4

[A] Local bias adjustment factor from co-location study at Newbold Road – 1.14.
[B] National bias adjustment factor taken from Review and Assessment Helpdesk Spreadsheet of Bias Adjustment Factors Version 04/11 – 0.85.
Figures in **BOLD** represent exceedances of the annual mean NO_2 objective.

Table 2.6: Results of Nitrogen Dioxide Diffusion Tubes (Recent Years)

Site Reference	Location	Annual Mean Concentration Bias Adjusted [A] (µg/m^3)						
		2004	2005	2006	2007	2008 [B]	2009 [C]	2010
DT 1	10 Newbold Rd, Opposite Shops	21.0	16.8	16.9	22.2	26.0	21.5	30.7
DT 2	Marton A423	-	-	-	-	-	15.5	31.2
DT 3	69 School St, Long Lawford	18.8	15.1	13.6	15.2	21.7	17.4	28.6
DT 4	St Margaret's School, Wolston	15.4	14.0	12.0	14.9	19.2	13.3	21.9
DT 5	Ryton Village Hall, High Street	29.0	23.6	22.1	27.2	37.4	25.5	**40.7**
DT 6	2 Westfield Rd, Bilton	17.9	17.3	15.0	20.7	24.4	19.8	28.5
DT 7	68 Cymbeline Way, Bilton	16.3	12.3	13.3	17.5	21.8	13.6	24.8
DT 8	EHO Dept, Newbold Rd	**46.4**	34.3	30.7	37.2	**47.0**	38.6	**56.0**
DT 9	Cambridge St. / Argyle St.	24.9	18.6	18.4	22.5	26.7	21.2	31.0
DT 10	Webb Ellis Pub, Corporation St.	**48.8**	37.2	38.0	**42.2**	**58.6**	**43.0**	**61.4**
DT 11	15 Oliver St., New Bilton	**42.5**	29.6	33.4	**40.0**	**59.3**	**44.7**	**50.3**
DT 12	Boughton Leigh School, Brownsover	25.5	17.0	21.2	26.9	29.5	26.3	34.3
DT 13	Avon Mill Pub, Newbold Rd	30.6	22.6	23.9	28.9	**40.6**	34.9	**55.3**
DT 14	Binley Woods Village Hall	20.6	16.7	16.1	18.9	22.5	20.4	29.4
DT 15	Lawford / Jubilee St, Arnie's Batch	22.9	23.3	25.4	29.5	**40.5**	36.9	**45.4**
DT 16	Marriot / Courtyard Hotel, A45, Ryton	22.3	19.8	18.9	22.7	27.7	21.1	31.5

[A] Local bias adjustment factors used: 2005 =0.74; 2006 = 0.66; 2007 = 0.78; 2008 = 0.99; 2010 = 1.14.

[B] Co-located tubes used to derive local bias adjustment factor in 2008 may have been incorrectly positioned leading to higher than expected bias adjusted NO_2 concentrations.
[C] 2009 = National Bias Adjustment Factor Used = 0.81

Figure 2.8: Diffusion Tube Annual Mean NO_2 Concentrations in Rugby Since 2004 (DT1-DT8)

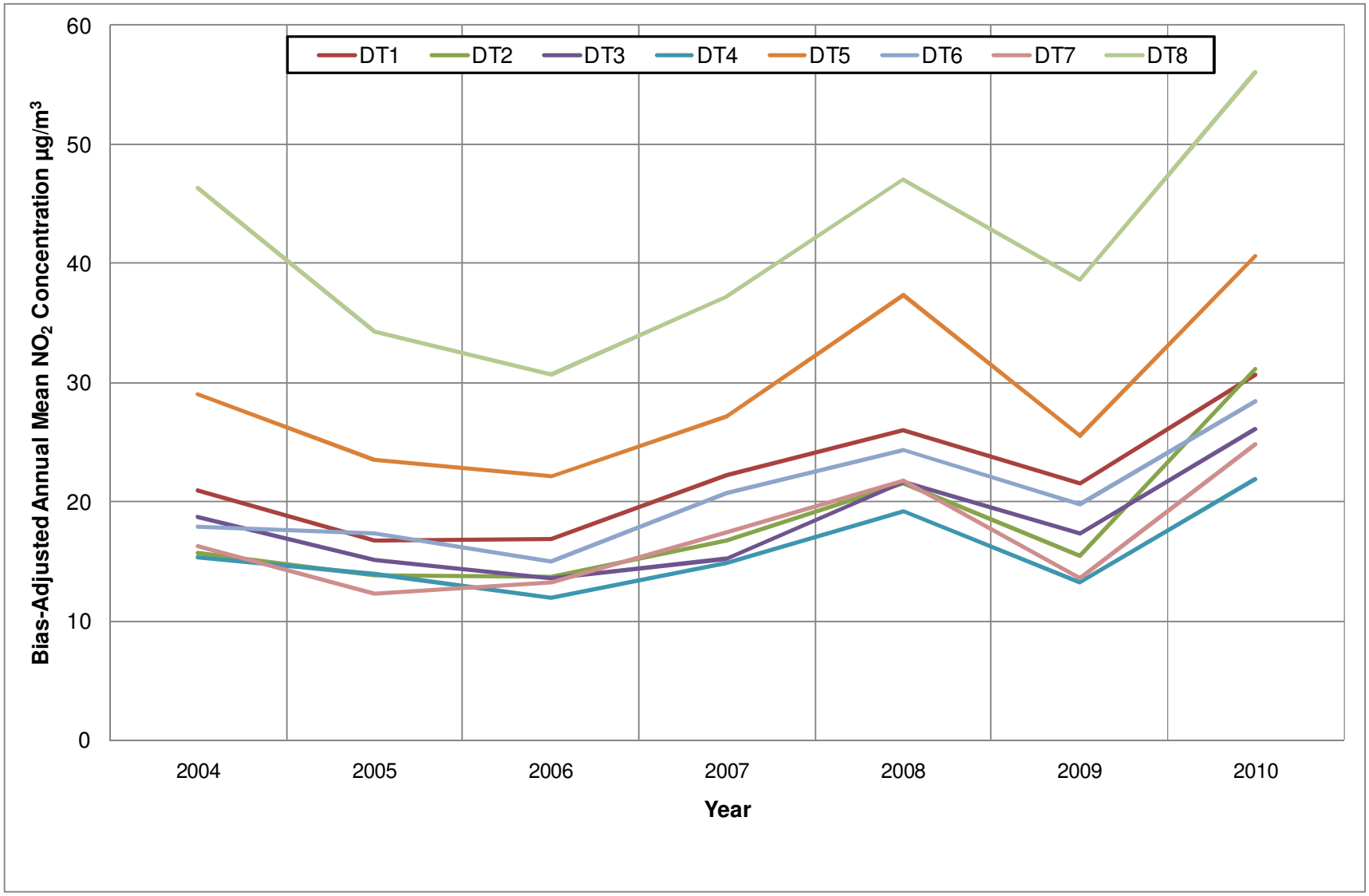


Figure 2.9: Diffusion Tube Annual Mean NO_2 Concentrations in Rugby Since 2004 (DT9-DT16)

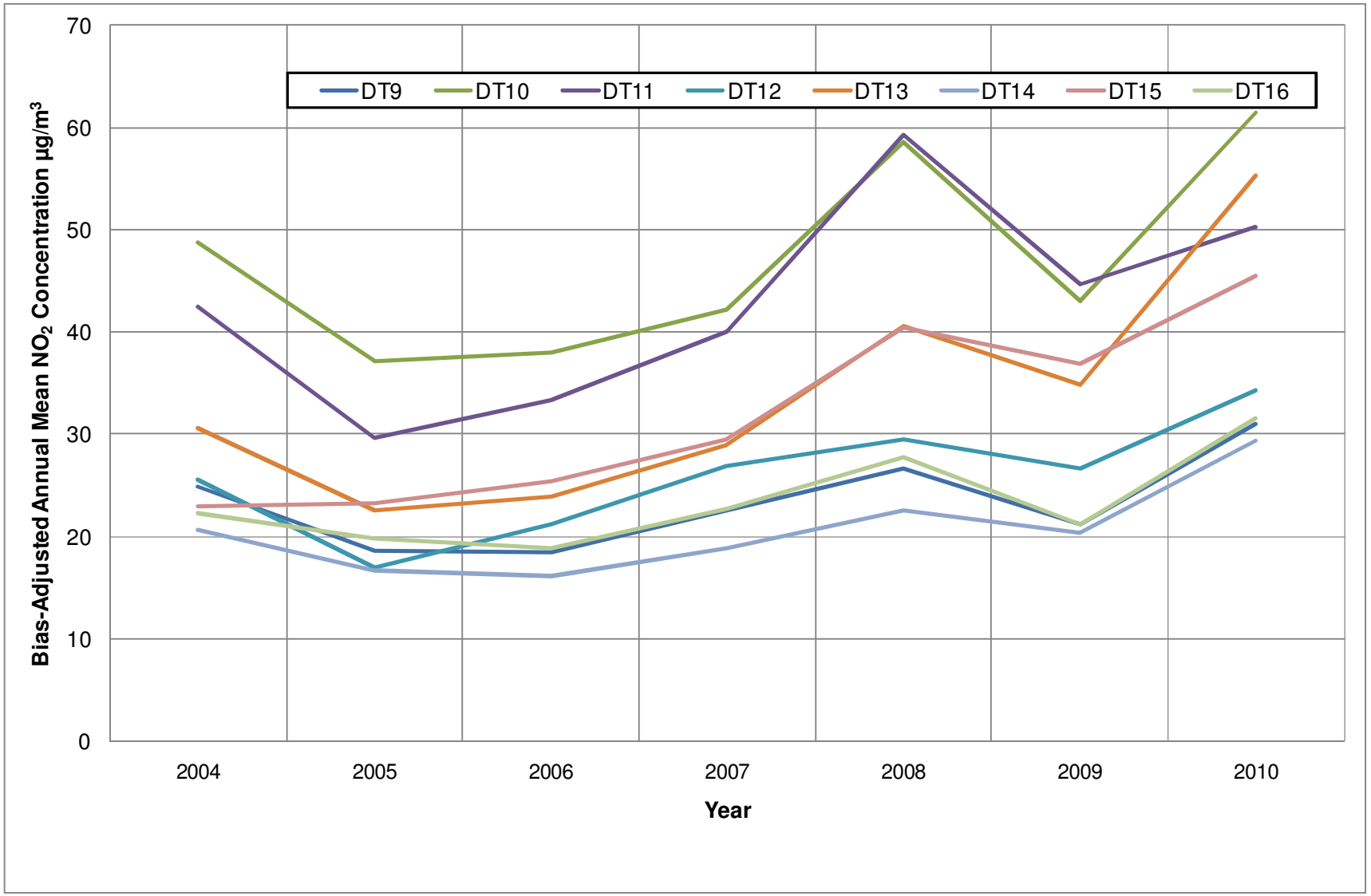


Figure 2.10: NO_2 Falloff With Distance Calculation at Diffusion Tube Site DT5 (Ryton-on-Dunsmore Village Hall), 2010

This calculator allows you to predict the annual mean NO_2 concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph.

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Enter data into the yellow cells

Step 1	**How far from the KERB was your measurement made (in metres)?**	(Note 1)	**7**	metres
Step 2	**How far from the KERB is your receptor (in metres)?**	(Note 1)	**20**	metres
Step 3	**What is the local annual mean background NO_2 concentration (in µg/m^3)?**	(Note 2)	**13.40613**	µg/m^3
Step 4	**What is your measured annual mean NO_2 concentration (in µg/m^3)?**	(Note 2)	**40.7**	µg/m^3
Result	**The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor**	(Note 3)	**31.2**	µg/m^3

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Issue 4: 25/01/11 Created by Dr Ben Marner; Approved by Prof Duncan Laxen. Contact: benmarner@aqconsultants.co.uk

2.2.2 PM_{10}

Continuous monitoring of PM_{10} is carried out at one location in Rugby using a TEOM-FDMS (AQMS 5 – Newbold Road), with additional monitoring performed at five other locations by Turnkey Osiris instruments. Data from AQMS 5 require no correction for gravimetric equivalence. Earlier co-location studies of Turnkey instruments with TEOM systems demonstrated a good agreement between Turnkey and gravimetric equivalent TEOM data[viii] in Rugby. Consequently, the Turnkey monitoring data are presented without the application of a gravimetric correction factor.

Monitoring data from these sites indicate that the annual mean objective for PM_{10} was met at all monitoring locations between 2005 and 2010 (Table 2.7) and is unlikely to be breached at these locations. Data capture at all sites in all years exceeded 80% with the exception of Lawford Farm in 2010 (75%). This was the result of damage to the monitor in October 2010 and its subsequent relocation to a new position. In 2010 four of the six continuous monitors for PM_{10} achieved greater than 90% data capture.

Analysis of the PM_{10} data (see Table 2.7) suggests that monitored PM_{10} concentrations at Newbold Road remained relatively constant between 2004 and 2007, before reducing and remaining relatively constant between 2008 and 2010. The difference in monitored concentrations between these two periods might be as a result of the analyser being relocated and an alternative measurement method being employed (i.e. TEOM-FDMS as opposed to TEOM with gravimetric correction).

Annual mean PM_{10} concentrations at Lawford Farm have remained relatively constant in recent years. Indeed the 2010 annual mean PM_{10} concentration at the site was the same as in 2009. However, it should be noted that poor data capture may mean the results for 2010 are unreliable.

Monitored concentrations have reduced between 2004 and 2010 at the Avenue Road monitoring site, although there is no clear trends in monitored concentrations at the Russelsheim Way and Townsend Road sites.

The high annual mean PM_{10} reported for Murray Road in 2007 was attributable to construction activity in the area, which has since been completed. Since the completion of these activities PM_{10} concentrations at Murray Road have reduced to come into line with the other monitoring sites around Rugby town centre.

All of the monitoring locations in Rugby have recorded 24-hour mean concentrations greater than 50 $\mu g/m^3$. However, T16 Murray Road is the only site where the permitted 35 instances of the objective was exceeded since monitoring began in 2004. This exceedance occurred in 2007 when the site was affected by long-term construction work leading to elevated dust concentrations throughout the year and which continued into the early part of 2008. No exceedance of the 24-hour mean objective has been monitored at the Newbold Road site.

In 2010, all sites met the 24-hour mean exceedances objective or achieved 90th percentile concentrations lower than 50 $\mu g/m^3$. There are no apparent trends in the number of recorded exceedances per year and the number of exceedances has shown considerable variation from year to year (Table 2.9). However, with the exception of Murray Road during 2007, there have been no exceedances of the objective and it is unlikely that under normal circumstances the objective will be exceeded at any monitoring site.

Table 2.7: PM_{10} Automatic Monitoring: Data Capture Rates, 2004 – 2010.

Site Reference	Location	Within AQMA?	Data Capture (%)						
			2004	2005	2006	2007	2008	2009	2010
AQMS 5	Newbold Road	Y		99	99	89	98	98	98
T2	Lawford Farm	N		80	82	95	89	97	75
T8	Townsend Lane	Y		96	87	99	80	82	90
T10	Avenue Road	Y		98	86	89	96	82	95
T14	Russelheim Way	Y		96	89	97	95	94	99
T16	Murray Road	Y		97	89	99	81	97	84

Table 2.8: PM_{10} Automatic Monitoring: Comparison with Annual Mean Objective, 2004 – 2010.

Site Reference	Location	Annual Mean Concentration (µg/m^3)						
		2004	2005	2006	2007	2008	2009	2010
AQMS 5	Newbold Road	25.7	25.6	27.7	26.0	20.9	21.5	20.9
T2	Lawford Farm	20.9	21.0	19.8	21.4	20.7	22.2	22.2
T8	Townsend Lane	24.4	17.1	19.0	18.3	16.1	17.3	19.2
T10	Avenue Road	28.6	22.1	22.2	21.0	19.2	19.6	15.4
T14	Russelheim Way	23.9	20.9	17.9	24.0	20.7	15.9	16.4
T16	Murray Road	23.8	23.9	24.7	30.6	24.3	20.0	18.2

Table 2.9: PM_{10} Automatic Monitoring: Comparison with 24-Hour Mean Objective, 2004 to 2010.

Site Reference	Location	Number of Exceedences of 24-hour Mean (50 µg/m^3) [A]						
		2004	2005	2006	2007	2008	2009	2010
AQMS 5	Newbold Road	5	4	17	14 (40.8)	13	10	4
T2	Lawford Farm	8	10 (34.8)	5 (32.0)	11	5 (31.4)	11	11 (36.3)
T8	Townsend Lane	16	7	6 (29.3)	9	2 (25.3)	4 (26.1)	6
T10	Avenue Road	28	14	10 (33.0)	9 (33.0)	5	7 (30.9)	1
T14	Russelheim Way	12 (38.4)	10	6 (27.4)	8	5	6	1
T16	Murray Road	7 (37.3)	15	11 (38.2)	**43**	11 (40.6)	7	1 (29.5)

[A] Where data capture is less than 90% of a full year a 90th %ile concentration of daily means has been calculated and is shown in brackets.

2.2.3 Sulphur Dioxide

No continuous monitoring of SO_2 is carried out in Rugby. Continuous monitoring of SO_2 ceased in 2007 following the decommissioning of the Webb Ellis Rugby Club monitoring site. During the period that the site was operational there were no exceedances of any of the objectives relating to SO_2 nor was it considered likely that future exceedances would occur.

Diffusion tube monitoring continues to be carried out at three locations for the purpose of historical comparison and trend analysis of SO_2 concentrations in the Borough (Table 2.10). Owing to the short timescales over which the SO_2 objectives apply the diffusion tube results cannot be compared against the objectives. However, the results of the SO_2 diffusion tube monitoring may help inform decisions on the need for any future continuous monitoring programme.

Table 2.10: Trend Analysis of Sulphur Dioxide Diffusion Tube Monitoring in Rugby Borough, 2004 – 2010.

Site Reference	Location	Annual Mean Concentration (µg/m^3)						
		2004	2005	2006	2007	2008	2009	2010
DT C	69 School Street	4.3	5.3	6.7	6.0	7.1	8.2	7.9
DT F	Wolvey Village Hall	5.4	6.0	6.6	5.7	9.5	9.7	9.0
DT M	Avenue Road	ND	ND	ND	ND	10.3	6.0	8.2

ND = No Data

2.2.4 Benzene

No monitoring of benzene is undertaken within the Borough. On the basis of historical monitoring it is considered that there are no significant sources that might give rise to exceedances of the air quality objective for benzene at any receptor location within the Borough.

2.2.5 Other pollutants monitored

Rugby Borough Council does not perform monitoring activities for any other air pollutants.

2.2.6 Summary of Compliance with AQS Objectives

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

Exceedances of the annual mean NO_2 objective continue to be monitored at several locations within the Borough that have historically recorded exceedances. These locations are within the current boundary of the AQMA. However, the annual mean NO_2 concentration at Newbold Road AQMS 5 in 2010 is the first year since monitoring began that the annual mean objective has been exceeded at this location.

The trend of NO_2 in Rugby in recent years has been one of increasing concentrations. Since 2008 NO_2 diffusion tube monitoring has indicated concentrations above or close to the annual mean objective along Newbold Road, Corporation Street, Oliver Street and the Warwick Street Gyratory. At the Webb Ellis Pub site the annual mean NO_2 concentration in 2010 was greater than 60 $\mu g/m^3$, indicating the potential to exceed the hourly objective for NO_2. The annual mean NO_2 concentration at diffusion tube site DT5 (Ryton-on-Dunsmore) exceeded the annual mean NO_2 objective in 2010. This site is outside the boundary of the existing AQMA. However, after application of the NO_2 Falloff with Distance calculation the annual mean NO_2 concentration at the nearest relevant receptor was below the objective.

Rugby Borough Council undertook a Detailed Assessment for NO_2 in 2010 in response to the findings of the 2009 USA and 2010 Progress Report. This was completed in January 2011 and concluded that annual mean NO_2 concentrations in the town centre study area were likely to continue to exceed the annual mean NO_2 objective on the basis of model predictions and monitoring results. Furthermore, a recommendation was made to expand the level of diffusion tube monitoring within the Borough to provide better information on NO_2 concentrations in Rugby.

It is therefore not considered practical to proceed to a Detailed Assessment for NO_2 at this stage, nor is it considered appropriate to amend the existing AQMA Order for NO_2 to include the hourly objective on the basis of one single diffusion tube result. Rugby Borough Council will therefore establish a triplicate diffusion tube monitoring site at Webb Ellis Pub at its present location to investigate NO_2 concentrations with greater certainty.

The concentrations of all other key pollutants are below the prescribed objectives, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

The main changes to the existing road network which have occurred since the production of the 2010 Progress Report have been the opening in full of the Rugby Western Relief Road in October 2010 and the new link road through the former Alstom/GEC site between Mill Road and Leicester Road, which was completed in August 2010. The usual routes remain a concern for local air quality, namely the Warwick Gyratory system, Newbold Road, Oliver Street, Bilton Road, Corporation Street, Lawford Road and the north and south corridors. Parkfield Road remains closed to through traffic following the construction of the Rugby Western Relief Road. As a consequence, traffic was diverted along roads closer to Rugby town centre. Oliver Street, Warwick Gyratory System, Newbold Road and Corporation Street were the main routes affected by the temporary closure.

Rugby town centre has not shown the anticipated decrease following the opening of the RWRR and Rugby Borough Council will investigate the reasons behind the apparent discrepancy through a review of air quality monitoring and traffic data.

There have been no other changes to road traffic sources within the Borough since the publication of the previous Review and Assessment report.

3.2 Other Transport Sources

There have been no changes in other transport sources within the Borough since the publication of the 2010 Progress Report.

3.3 Industrial Sources

Details of industrial sources permitted by Rugby Borough Council, together with any recent changes are shown in the Pollution Prevention and Control Register given in Appendix 2.

In April 2010, permission was granted for the installation of two additional landfill gas engines and a landfill gas flare at the Ling Hall Quarry & Landfill Site in Lawford Heath, Rugby (Planning Application Reference. R16/10CM003). The two new landfill gas engines will comply with the emissions standards published in the Environment Agency's document 'Guidance for Monitoring Landfill Gas Engine Emissions'. The proposed landfill gas flare will meet the Environment Agency's published emission standards, including those set out in the document 'Guidance on Landfill Gas Flaring'.

3.4 Commercial and Domestic Sources

No new biomass combustion plant, or areas where the combined impact of several biomass combustion sources or domestic solid fuel burning may be relevant, have been identified since the last Updating and Screening Assessment.

3.5 New Developments with Fugitive or Uncontrolled Sources

In February 2011, permission was granted for the remediation of Parkfield Road Landfill site (Planning Application Reference: RBC/10CM022)[ix], which will involve the removal of historically landfilled material at Parkfield Road Quarry and its deposition at Southam Quarry, followed by landscaping and environmental enhancement of the Parkfield Road site. These activities have the potential to impact upon local air quality as a result of fugitive dust emissions generated during the removal, handling and deposition of the fill material. The potential impact of emissions to air has been assessed within an Environmental Statement. Negligible impacts were predicted to occur as a result of the main activities associated with the remediation operation and air quality objectives relating to PM_{10} were unlikely to

be exceeded at nearby receptor locations. It was concluded that the impacts of excavation operations are unlikely to be discernible beyond the site boundary.

Rugby Borough Council has identified the following new or previously unidentified local developments which may impact on air quality in the Local Authority area:

- Climafuel Manufacturing Facility to supply Rugby Cement works with solid recovered fuel from household, commercial and industrial waste (reported in 2010 Progress Report);
- Landfill gas engines and flare at the Ling Hall Quarry & Landfill Site; and
- Remediation of Parkfield Road Landfill site.

These will be taken into consideration in the next Updating and Screening Assessment, scheduled for 2012.

4 Local / Regional Air Quality Strategy

The improvement of local air quality in Rugby is one of the underlying themes of Warwickshire County Council's Local Transport Plan (LTP). The Air Quality Strategy incorporated into the LTP is dealt with in detail in Section 7 of this report. The measures in the LTP are deliberately generic to allow each local authority within the County to develop its own strategy tailored to address air quality issues that are specific to the local authority area in question.

Rugby Borough Council has expanded upon the more generic measures outlined in the LTP Air Quality Strategy to set out clear actions for tackling air quality issues in the Borough. These actions include:

- Specific proposals for the AQMA.
- Non-specific proposals for general improvement of air quality in the Borough.
- Reducing vehicle emissions.
- Alternative transport modes/policies.
- Non-transport measures.

Further details of Air Quality Action Planning undertaken by Rugby Borough Council are presented in Section 9 of this report.

5 Planning Applications

In addition to the planning applications already mentioned in earlier sections of this report, the following applications have been received by Rugby Borough Council that could impact upon local air quality in the Borough and / or affect the Council's ability to implement measures within its Air Quality Action Plan.

Rugby Radio Station, A5 Watling Street, Clifton upon Dunsmore rugby
Outline application for an urban extension to Rugby for up to 6,200 dwellings together with up to 12,000sq.m retail (A1), up to 3,500sq.m financial sevices (A2) and restaurants (A3 - A5), up to 3,500sq.m for a hotel (C1), up to 2,900sq.m of community uses (D1), up to 3,100sq.m assembly and leisure uses (D2), 31 hectares (up to 106,000sq.m) of commercial and employment space (B1, B2 and B8), and ancillary facilities; a mixed use district centre and 3 subsidiary local centres including retention and re-use of the existing buildings known as 'C' Station (Grade II listed), 'A' Station and some existing agricultural buildings and land reserved for a secondary school and 3 primary schools.

Rugby Gateway, Leicester Road, Rugby
Outline application for residential development (up to 1300 units); employment development (up to 36ha in total, B2 – General Industrial & B8 – Storage & Distribution); community facilities (D1 – Non-residential Institutions) including primary school, nursery and health facility, retail premises (A1 – Retail, A3 – Food & Drink, A4 – Drinking Establishments & A5 - Hot Food Takeaway); open space; associated infrastructure and works including details of access into site (including alterations to highway and existing roundabouts). Demolition of existing buildings.

Rugby Gateway Phase R2, Leicester Road, Rugby
Erection of 219 dwellings with associated open space, infrastructure and ancillary works (alteration to Brownsover Lane and junction with existing roundabout).

Onley Lane, Cemetery and Crematorium, Rugby
A joint venture development project between Rugby and Daventry Local Authorities is currently at the Pre-application stage to develop the facility at Onley Lane, Rugby. At present the local authorities are screening opinion on the project but should the proposal progress further the potential impacts upon local air quality will have to be taken into consideration.

Snellsdale Road, Coton Park East, Rugby
In January 2011 consultation began on a residential development comprising a maximum of 110 dwellings and associated open space and infrastructure on land adjacent to Snellsdale Road. An air quality assessment has been carried out as part of an Environmental Statement submitted in support of the application. The conclusions of this assessment were that traffic generated by the development would have no impact upon existing air quality relative to the current situation and that air quality objectives will continue to be met in the area. Construction phase impacts were assessed and it was concluded that there may be some temporary effects due to generation of dust but that appropriate mitigation measures would control and minimise the geographical extent of these impacts.

Barby Pools Marina
J Marine Limited has put forward a proposal for the construction of a new inland marina at Onley Fields Prison Farm, Onley, Rugby.

Land at Stretton Croft, M69 motorway, Watling Street, Wolvey
Outline application for a mixed use development comprising Class B1 (Business) and Class C1 (Hotel Development), incorporating Class A3 (Restaurant) and Class D2 (Assembly and Leisure) with associated car parking and landscaping.

Southam Quarry Extension
This application seeks permission for the extraction of limestone and clay as an extension to the quarry, within land referred to as Spiers Farm in Southam. This material would be transported to the Rugby Cement Works as a continuation of historic practice.

Rugby Town Centre Pedestrianisation Scheme
Options for the extension of the existing pedestrianised area of Rugby town centre were presented in the Transport Management Plan for Rugby town centre. The meeting of Warwickshire County Council's Rugby Area Committee in July 2010 agreed that Option 1 was the preferred option that would be taken forward to the detailed design stage. This proposes the complete pedestrianisation of a section of North Street and Church Street around the Clock Tower, with traffic being diverted via Regent Street and Albert Street. Road traffic increases are expected along Park Road, Henry Street, Regent Place and Albert Street (East) with corresponding decreases on North Street and Church Street.

AECOM Ltd carried out an assessment of the potential impacts of the scheme on air quality on behalf of Rugby Borough Council. It was concluded that some areas would see beneficial impacts on local air quality, whilst others would experience deterioration with the implementation of the scheme. Work on the detailed design of the pedestrianisation scheme is ongoing and the current date of implementation is still to be finalised.

Climafuel Manufacturing Facility – Rugby Cement

CEMEX submitted an application (Reference R08/1499/CM) for the development of a climafuel manufacturing facility to supply Rugby Cement works with solid recovered fuel, manufactured from mixed household and commercial and industrial waste. This was dealt with in greater detail in Section 3.3.

A number of objections were raised against the application by Rugby Borough Council. Permission was granted in November 2009.

Sainsburys, Dunchurch Road, Rugby
Demolition of existing petrol filling station, shop, canopy and pumps, removal of underground tanks, installation of 6 no. new petrol pumps, erection of new sales kiosk and a flat canopy, refurbishment of forecourt including new car care facilities with associated works and access alterations.

6 Air Quality Planning Policies

6.1 Rugby Borough Development Plan

Rugby Borough Council is committed to the control of pollution from both existing sources and future developments. To safeguard natural resources and the environment from potential pollution sources the Rugby Borough Development Plan (adopted July 2006) incorporates policies that make environmental issues a material consideration in the planning process. Direct reference to the consideration of air quality in planning application decisions is made in two policy statements, as reproduced below.

"Policy GP11 – Pollution control

Planning permission will be granted where it is demonstrated through an appropriate assessment, taking full account of previous and proposed uses, that the proposal would not result in material harm in relation to:

1. Surface or ground water, particularly potable sources,
2. Air quality,
3. Soil conditions,

Or result in unacceptable levels of noise, light or air pollution.

It may be necessary to prevent developments with the potential to pollute, separate them from other land uses liable to be affected, or require mitigation measures sufficient to satisfactorily reduce, or avoid the risk of harm."

And

"Policy GP12 – Air Quality Management Area

Development proposals within the Air Quality Management Area (AQMA) that fulfil the requirements specified for air quality assessments (Table 2), or are likely to hinder the achievement of the Council's air quality objectives, will be required to demonstrate their impact on air quality.

Development that is likely to have a net adverse impact on air quality in the AQMA will not be permitted, unless such effects are mitigated to the satisfaction of the Council.

Table 2: AQMA thresholds

Land Use	***Threshold Above Which an Air Quality Assessment Will Generally be Necessary (m^2)***
A1, A2 and A3 retail development	*1000*
B1 including offices	*2500*
B2 general industry	*5000*
B8 storage and distribution	*5000*
Educational establishments	*2500*
D2 Assembly and leisure facilities, including stadia	*1000*
C3 residential development	*100*
Health establishments	*2500*

6.2 Core Strategy

The Rugby Borough Development Plan is soon to be superseded by the Core Strategy. This was submitted to the Secretary of State for Public Examination in January 2010 and is currently undergoing a public examination with an independent planning inspector. It is expected that the Core Strategy will go to Council for adoption in May 2011.

Local Plan Policy GP11 and Policy GP12, which makes reference to the Rugby AQMA, will be replaced by Core Strategy Policy CS11. The Core Strategy policy will incorporate similar thresholds to those detailed in Local Plan Policy GP12 into a revised Planning Obligation SPD. This is due to be consulted upon in July 2011. The wording of Core Strategy Policy CS11 is as follows:

"Policy CS11 - Transport and New Development

Development will be permitted where sustainable modes of transport are prioritised and measures mitigating against the transport impacts which may arise from that development or cumulatively with other proposals are provided. This shall be achieved where appropriate through the submission of a transport assessment and: where appropriate [SC18]

> *Contributions to transport modelling work;*
> *The provision of travel plans to promote sustainable travel patterns for work related trips; and;*
> *The entering into of bus and/or freight partnerships with the County Council and/or third parties.*

The thresholds above which transport assessments will be required and the relevant car parking standards for all development types are set out in the Planning Obligations SPD. Where development proposals fall within the designated Air Quality Management Area, the transport assessment should set out how detrimental impacts on air quality will be mitigated.

Explanation

5.7 Policy CS11 promotes the use of sustainable transport modes where any proposed new development shall causes any unacceptable impacts upon the Borough's transport network. In applying for planning permission the Council will, where appropriate [MC58] require developers to submit transport assessments or statements outlining the impacts of the development and the package of measures that will be put forward to mitigate against any unacceptable impacts."

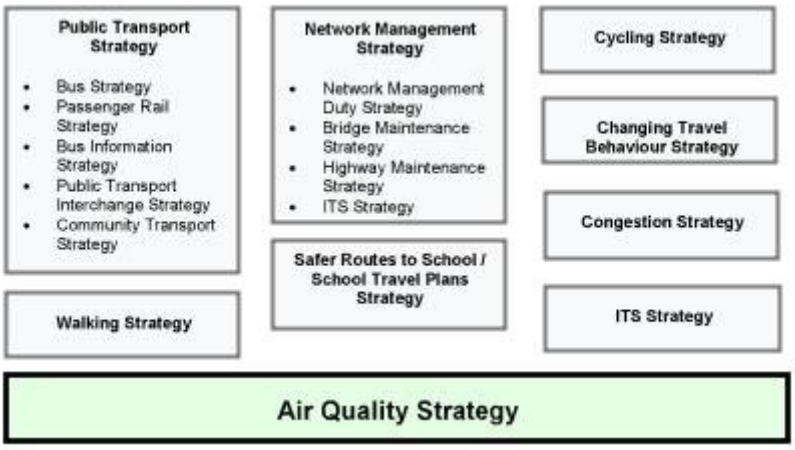
7 Local Transport Plans and Strategies

The improvement of local air quality in Rugby is one of the underlying themes of the Warwickshire County Council Local Transport Plan (LTP)[x]. The fundamental vision of the strategy is **'to take a proactive approach to maintaining and improving air quality within the County where transport is causing unacceptable levels of air pollution, in order to improve quality of life for all'.** Five key policies are laid out in the LTP, as summarised below:

- The contribution of air quality improvements to the national targets on greenhouse gases;
- Improving poor air quality through partnership working;
- Maintaining areas of good air quality;
- The promotion and education of the general public as widely as possible about air quality, to provide information about transport choices and their implications for air quality and health;
- Integration of air quality and transport planning;
- Regular reviews of the Air Quality Strategy to keep it up to date with the current air quality situation in the County, developments in policy and legislation and air quality knowledge and best practice techniques;

Figure 7.1 below highlights the key links between the Air Quality Strategy and the other LTP strategies.

Figure 7.1: Key Links between the Air Quality Strategy and Other LTP Strategies



Actions for delivering the elements of the Air Quality Strategy are summarised in Table 7.1.

The current LTP Air Quality Strategy is available for download from the Warwickshire County Council webpage (www.warwickshire.gov.uk/ltp). Access to the internet is available in most libraries for those who do not have access at home. Hard copies of the plan can be made available on request, as can an electronic version on CD-ROM.

The Air Quality Strategy has recently been reviewed as part of the preparation of the County Council's third Local Transport Plan (LTP3). The final LTP was submitted to the Department for Transport at the end of March 2011.

Rugby Borough Council has been informed by Stagecoach Warwickshire that since the beginning of 2011 a total of 23 buses that are greater than 15 years old have been replaced by vehicles that meet Euro IV and Euro V emissions standards. Further to this, Stagecoach are about to enter into a contract with Telematics to use and develop a traffic light system that monitors driving behaviour and promotes more efficient driving. These measures will supplement measures laid out in the Warwickshire LTP and should help to deliver improvements in air quality in Rugby.

Table 7.1: Summary of Local Transport Plan Actions Relating to Local Air Quality

Action	Description of Activities and Progress Made
Action AQA1 - The contribution of air quality improvements to the national targets on greenhouse gases	Ongoing implementation of the wider LTP policies contained in the Public Transport, Cycling, Walking and Changing Travel Behaviour Strategies.
Action AQA2 - Improving poor air quality through partnership working	Improving air quality in the County will include assisting the District/Borough Councils in drawing up Air Quality Action Plans as required (if and when Air Quality Management Areas are declared) and providing support in implementing the Plans. Regular communication with the District/Borough Councils, as well as neighbouring authorities and other organisations such as the Highways Agency, will be carried out to ensure maximum awareness of all air quality issues. The County Council will seek to implement traffic management schemes where air quality is poor, particularly within town centres. Air quality monitoring will be carried out in support of the District/Borough Councils, in order to foresee any potential air quality problems, improve the local and regional air quality data set, and improve the knowledge and understanding of the air quality situation in the County. The County Council has produced an Advisory Lorry Route Map for Warwickshire, which aims to take road freight vehicles away from sensitive locations, such as residential areas and onto more appropriate routes. The County Council also aims to operate a "cleaner" vehicle fleet by introducing alternative-fuel vehicles, as they become economically viable. The County Council currently operates 344 vehicles, of which 222 are diesel, 94 are petrol (largely motor scooters used in the "Wheels To Work" scheme) and 28 are rebated diesel. The County Council Fleet vehicles are currently purchased according to the carbon dioxide performance of the vehicle.
Action AQA3 - Maintaining areas of good air quality	Maintaining on-going communication with the District/Borough Councils to ensure full awareness of potential future air quality issues. Implementation and promotion of the Advisory Lorry Route Map for the County, encouraging goods vehicles to remain on designated routes.
Action AQA4 - Education and information	Increasing public awareness of road transport-related air quality issues, through a number of initiatives, including a dedicated air quality page on the Warwickshire County Council website. Promoting the use of public transport and alternative methods of transport to the private car, including Travel Wise initiatives and travel plans for schools and workplaces. Promotion of cycling and walking as alternative methods of transport, highlighting the health benefits that both these modes can bring. Continued promotion of the Safer Routes to School initiative, including Walk to School weeks throughout the County and possible introduction of Car Free Days to the main town centres of the County. Improving route signage, particularly in town centres, in order to alert drivers to more appropriate, possibly less congested routes. It is anticipated that the County Council's use of "cleaner" vehicle technology will encourage other employers to make use of similar types of vehicles.
Action AQA5 - Integration of air quality and transport planning	Traffic will be managed, where possible, to take account of the need to minimise impacts on local air quality. In new developments, air quality issues will be considered in all situations, including the consideration that all new developments are to have reasonable access to public transport and sufficient provision is made for pedestrians and cyclists. Local bus services will be improved, subject to the availability of funding, by increasing the accessibility, affordability and safety of services.
Action AQA6 - Strategy Review	The Air Quality Strategy is to be reviewed on a regular basis (every 2-3 years) and is to be informed by the District/Borough Council reviews of air quality.

8 Climate Change Strategies

Rugby Borough Council has signed up to the Warwickshire Climate Change Strategy. The Climate Change Strategy lays out a range of actions **"to reduce greenhouse gas emissions in Warwickshire to at least the level set out by Government policy, 15%-18% reduction by 2010 and a 60% reduction by 2050 (against 1990 levels). We will achieve this whilst maintaining and improving the quality of life of Warwickshire residents through the implementation of a policy of sustainable development".**

The Warwickshire Climate Change Partnership includes organisations from the public, private and voluntary sectors, understanding that they must unite to effectively reduce carbon dioxide (CO_2) emissions through targeted actions in five key areas: transport; energy; resource efficiency; adaptation; and communications and education.

The Affordable Warmth Strategy and Action Plan[xi] forms a key part of the Council's corporate priorities and objectives, which are outlined in the Corporate Strategy (2008-2011). These priorities and objectives include protecting and enhancing the environment through the promotion of energy efficiency, not just in the Council's own premises, but across the Borough. The principal aims are to increase prosperity and to work towards eradicating fuel poverty and other forms of social exclusion, although the minimisation of CO_2 emissions is a consequence of the Strategy measures. The key targets are summarised in Tables 8.1 and 8.2 below.

Table 8.1: Energy Efficiency Improvements - SAP Ratings

Rugby Affordable Warmth Strategy - Key Target 1		**Rugby National Indicator 187 (LAA Local Indicator): SAP (energy efficiency) Improvements**	
Baseline (Calculated from NI 187 postal questionnaire survey carried out in November 2008)	**Year 1 November 2008** (Baseline)	**Year 2 2009-2010** (a 1.5% improvement)	**Year 3 2010-2011** (a 1.5% improvement)
SAP Rating:	**SAP35- SAP65+**	**SAP35- SAP65+**	**SAP35- SAP65+**
	8.64% 31.09%	7.14% 32.59%	5.64% 34.09%

Notes: In Rugby, 5,812 homes receive Council Tax benefit. Based on this survey, 502 homes would be SAP35 or worse and a 1.5% change requires 87 homes to be moved from one band to the next.

Table 8.2: Energy Efficiency Improvements – Number of Households receiving energy efficiency measures

Rugby Affordable Warmth Strategy-Key Target 1		**Increase in Households receiving Insulation &/or Heating Measures**	
Baseline (Calculated from a 5-year average - 01 April 2004 to 31 March 2009 - of Warm Front Grant take-up)	**Year 1 31 March 2009** (Baseline) **Number of Households**	**Year 2 01 April 2009-31 March 2010** (a 15% increase) **Number of Households**	**Year 3 01 April 2010-31 March 2011** (a 15% increase) **Number of Households**
Number of Households:	245	282	324

The target set, before they were abandoned, was for a 3 percentage point improvement over the two years. The results are summarised in Tables 8.3 and 8.4 indicate (according to the sample which has been corrected for bias) a 1.27 point reduction in the below SAP35 group and a 20.87 point increase in the above SAP65 group.

Act on Energy will carry out an in depth analysis of the date received (1,114 sets) as a result of the survey. The finalised results will be provided in the end of year report to be prepared by Act on Energy.

Table 8.3: Rugby Borough Affordable Warmth Action Plan Progress Report for the year 01 April 2010 to 31 March 2011 (up to 31 December 2010):

	Total Number of Measures Installed	Total Number of Households receiving energy efficiency measures
OVERALL TOTAL	**568**	**518**

Table 8.4: National Indicator 187 (Fuel Poverty) results for the year 2010-2011 and progress to date (at 31 December 2010):

Rugby- Progress from baseline		
year	**%<SAP35**	**%>=SAP65**
2008-09	8.64%	31.09%
2009-10	7.61%	44.29%
2010-11	7.37%	51.96%
Change	**-1.27%**	**20.87%**

9 Implementation of Action Plans

Rugby Borough Council compiled an Air Quality Action Plan Progress Report[xii] in February 2010. The report documented the measures in place to improve air quality within the Borough of Rugby including measures specific to the declared AQMA. A summary of the Action Plan measures and progress towards achieving them are outlined in Table 9.1.

A review of the Action Plan is proposed to be undertaken by Rugby Borough Council during the 2011/2012 financial year once plans for the proposed pedestrianisation scheme have been finalised and the Air Quality Monitoring Task Group's review and the short-term diffusion tube monitoring survey have been completed.

Table 9.1: Summary of Rugby Borough Council's Progress in Implementing Air Quality Action Plan Measures

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
A	**Rugby Western Relief Road**	Serve new development at Cawston, Swift Valley, Malpass Farm and Coton Park, and reduce the impact of traffic within the town centre.	WCC	1996-2007	2007-2011	Implementation of the scheme in full	12%	The construction of the road began in 2007, but has been delayed due to a variety of reasons.	The road opened in full in December 2010.	Winter 2010/11	
B	**Improvements to the Warwick Street Gyratory**	Reduce the impact of traffic on the town centre, and allow better access for pedestrians and cyclists. Manage the impact of housing and employment growth on the transport network of the town.	WCC	2007-2010	2011-2015	Implementation of the various measures (see section on progress to date)	Not specified	Improvements to Warwick Street Gyratory were considered as part of the Rugby Transport Study. This concluded that although no major changes should be made there was an opportunity for improvements to be made to allow better access to the town centre for pedestrians and cyclists. Improvements to the Gyratory are again under consideration as part of the wider changes to the town necessary to deliver the major growth proposed in the RBC's Local Development Framework Core Strategy.	The final stage of the Rugby Transport Study was completed in March 2010. The County Council's S-Paramics traffic model of Rugby is currently being used to test the impact of the individual development sites which are proposed in the LDF Core Strategy.	It is planned to deliver the pedestrian and cycle improvements in the next five years, subject to the availability of funding. A timescale for any wider improvements to come forward has not yet been identified.	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
C	**Improvements to Church Street/North Street**	Reduce the impact of traffic on the town centre, and allow better access for pedestrians and cyclists. Support the regeneration of the town centre and the growth proposals within the Borough.	WCC	2007-2011	2012-2014	Implementation of the scheme in full	Not specified	Pedestrianisation of the area around the Clock Tower on Church Street/North Street has been considered as part of the Rugby Transport Study. This will extend the existing pedestrianised area and allow the delivery of a new civic space within the town centre.	A preferred scheme has been identified and agreed by Members. Detailed design of the scheme is due to be completed in April 2011.	2013/14 (subject to the availability of funding).	
D	**Decriminalisation of Parking Enforcement within Rugby Borough**	Improve the management of traffic within the town centre and the impact of illegal parking.	WCC	2000-2005	2005-2006	Implementation of the scheme in full	Not specified	Scheme fully implemented	N/A	N/A	Since the commencement of Decriminalisation of Parking (now referred to as Civil Parking Enforcement CPE) on 02/10/06 in Rugby, the introduction of parking charges on some town centre streets together with a high level of enforcement has resulted in less vehicles being parked on the streets and less congestion due to inconsiderate parking.

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
E	**Rugby Town Centre 20:20 Vision**	Improve public transport. Improve access for pedestrians and cyclists.	RBC	N/A – ongoing initiative	N/A – ongoing initiative	N/A	Not specified	On Schedule and ongoing. Various target dates.	On Schedule and ongoing. Various target dates.	N/A	
F	**Re-routing traffic – Lorry Route Maps and agreements**	Reduce the impact of heavy goods vehicles on the transport network of the Borough.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Reduction in complaints regarding inappropriate lorry movements	Not specified	An initial Advisory Lorry Route Map for the County was produced in 2005. This was subsequently revised and reissued in 2008/9	N/A	N/A	
G	**Variable Message Signing**	Reduce the impact of circulating traffic seeking access to the town centre car parks.	WCC	2006-2008	2009	Implementation of the scheme in full	Not specified	Scheme fully implemented	N/A	N/A	
H	**Enforcement of Idling Vehicle Legislation**	Reduce number of idling vehicle improving local air quality by reducing emissions to air.	RBC/WCC	Under investigation, but unlikely to be implemented. Limitations in the Traffic Management Act means that Civil Enforcement Officers will be unable to enforce	Currently N/A	Currently N/A	Currently N/A	Feasibility of scheme investigated. Decision taken not to proceed with the scheme due to the restrictions in enforcement actions that can be carried out by Civil Enforcement Officers	Decision made not to proceed with scheme to restrictions on enforcement actions that can be carried out by Civil Enforcement Officers.		

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
I	**Improve the Borough Council Fleet (interims of emissions)**	As vehicles are replaced, they are replaced with lower emission vehicles.	RBC	N/A – ongoing initiative	N/A – ongoing initiative	Not specified	Not specified	3 vehicles were replaced with Euro V vehicles in 2007/8 and 2008/9 and 2 further vehicles were replaced during 2009/10. No replacements have been made to date during 2010/2011.	2 further vehicles have been replaced with Euro V vehicles.	Ongoing N/A	
J	**Improve Bus Emissions**	The County Council is working with the major bus operator within the town (Stagecoach) to reduce bus emissions through its fleet renewal process, and on individual routes when they are upgraded to QBC status.	RBC/WCC	Ongoing	Ongoing	Not specified.	Not specified	Recent Urban Quality Bus Corridor improvements have been made on routes between the Town Centre and Lower Hillmorton/Long Lawford.	Further QBC improvements have been completed for the route between Woodlands and the Town Centre, and on the Inter-Urban route between Rugby and Coventry.	Ongoing initiative	
K	**Cycling**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Increase in cycling as a result of individual scheme implementation	Not specified	The basis of a cycle network has been delivered in Rugby over the last 12-15 years, using a combination of on and off-carriageway routes. Additional routes will come forward as part of the LTP process and in conjunction with new development. The County Council and RBC provide	Work is ongoing between Sustrans and RBC to deliver the Connect2 scheme to reopen the Leicester Road viaduct to cyclists. Cycle routes to complement future growth	2010-2012 Post-2012 Winter	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
								cycle training for young people and adults who are keen to improve their cycle skills. Improvements to the Black Path bridge for pedestrians and cyclists over the West Coast Main Line have been implemented. A number of cross-town cycle improvements have been identified as part of the Rugby Transport Study, including changes to the Warwick Street Gyratory and measures to complement the proposed pedestrianisation around the Clock Tower.	within the Borough are in the process of being identified. Cycle facilities have been provided as part of the Rugby Western Relief Road.	2010/11	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
L	**Walking**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Increase in walking (footfall) as a result of individual scheme implementation	Not specified	The LTP Walking Strategy sets out a series of improvements for pedestrians, including new or upgraded pedestrian crossings, new/widened footways, improved street lighting, provision of new dropped kerbs, and footway resurfacing/ reconstruction.	Along with the area-wide improvements described in the progress to date section, a preferred scheme for the expansion of the pedestrianised area of the town centre has been agreed. Detailed design is due to be completed in April 2011.	2013/14 (subject to the availability of funding)	
M	**Workplace Travel Plans**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Number of Travel Plans agreed with existing employers and as part of new development	Not specified	Workplace Travel Plans are secured through a S106 agreement as part of new development.	Travel Plans covered by Planning Condition - NPIA Training Centre - Ryton - Rugby Cattle Market, Hotel Use Travel Plans covered by S106 - Herbert Grey College / Caldecott Square Residential Travel Plan - Coton Park East (awaiting	N/A	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
									outcome of appeal)		
N	**School Travel Plans and Safer Routes to School**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Reduction in the number of car-based journeys to school	Not specified	A School Travel Plan must be produced prior to any Safer Routes to School improvements being implemented. An ongoing programme of schemes is implemented across the County. The most recent scheme to be delivered within the Borough relates to Avon Valley School.	N/A	N/A	
O	**Public Transport Strategy, including the Bus Strategy**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Increase in bus patronage	Not specified	Ongoing implementation of the various strategies which make up the Public Transport Strategy, including the Bus Strategy, Passenger Rail Strategy, Community Transport Strategy, Public Transport Information Strategy and Public Transport Interchange Strategy.	Over the last 12 months, the Rugby – Wolston – Coventry (boundary) Inter-Urban Quality Bus Corridor and Woodlands – Rugby Town Centre Quality Bus Corridor improvements have been implemented.	N/A	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
P	**Travel Awareness Campaigns**	Reduce the impact of traffic on the transport network of the Borough (particularly within the urban area of Rugby) by encouraging a shift towards sustainable modes of transport.	WCC	N/A – ongoing initiative	N/A – ongoing initiative	Reduction in the number of car-based journeys being made within the Borough	Not specified	Ongoing implementation of the Changing Travel Behaviour Strategy and other relevant LTP strategies.	Regular annual events include Bike Week, Walk to School week, and In Town Without My Car Day. The County and Borough Councils both support the national Travel wise initiative.	N/A	
Q	**Energy efficiency improvements to Rugby housing & the reduction of fuel poverty.**	Reduction of carbon emissions from domestic dwellings, the reduction of residents' fuel bills & the alleviation of ill health due to cold, damp housing.	Rugby Borough Council	N/A – ongoing initiative	Ongoing	NI 187 (reduction of fuel poverty); NI 186 (per capita reduction in CO_2 emissions in the LA area).	15% increase in households receiving energy efficiency improvements; 1.5% improvements in SAP Ratings.	Ongoing promotion of energy efficiency measures across the Borough.	Improvement in the energy efficiency performance of housing the encouraging the installation of cavity wall insulation, loft insulation & high energy efficiency condensing boilers through discounts & grants. Households receiving energy efficiency improvements = 352 (well over target, even without complete data for the full year). *Warm*	Ongoing	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
									Front Grants funding to Rugby Borough residents for energy efficiency improvements totalled £419,921 in 2008-2009 & £521,847 in 2009-2010 (does not include March stats). NI 187 2009-2010 survey results: %<SAP35 = 7.61% - change from previous year = -1.03% (slightly under target) & %>=SAP65 = 44.29% - change from previous year = 13.20% (well over target).		
R	**Control Of Industrial Emissions**	Reduce the environmental impact of industrial processes through pollution control regulation	RBC	N/A – ongoing initiative	N/A – ongoing initiative	97.36% compliance improvements	Not specified	Annual inspection programme complete.	38 Industrial Pollution Processes (100% of inspections completed). All were inspected through 2009/2010 - 97.36%	N/A	

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
									compliance improvements where required for pollution at these sites.		
S	**Emissions from Domestic and Commercial Sources**	Prevent and/or reduce environmental impacts from domestic and commercial emissions.	RBC	N/A – ongoing initiative	N/A – ongoing initiative	Reduction in complaints.	Not specified	Low priority. Low number of complaints.	Ongoing	N/A	
T	**Control of Bonfires**	Prevent and/or reduce environmental impacts from domestic and commercial emissions.	RBC	N/A – ongoing initiative	N/A – ongoing initiative	Reduction in complaints	Not specified	Low priority. Low number of complaints.	Ongoing		
U	**Planning Development and Planning Applications**	Air quality assessments have been requested for land use planning developments that meet AQMA thresholds in the Rugby Borough Local Plan (July 2006). This is to ensure that new development does not result in a significant increase in the production of air pollutants	RBC	Ongoing	Ongoing	Not specified	Not specified	CEMEX Climafuel Facility Malpass Farm, Rugby. Rugby Radio Station Sustainable Urban Extension Gateway Rugby Sustainable Urban Extension Lime Tree Village Extension, Cawston Rugby. Long Lawford residential development Rugby Western Relief Road Priority	Ongoing		

No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
		and that opportunities are taken to improve air quality, where possible. In some instances where an AQMA threshold has not been met, officer discretionary measures have been utilised where it is felt that a proposed land use development has potential to impact on air quality and should be a material consideration.						Junction. Town Centre Pedestrianisation Rugby Western Relief Road including proposed changes to include priority Junction Priory Road, Wolston Residential Development			

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

The latest monitoring data within the Borough has indicated that the annual mean NO_2 objective continues to be exceeded at locations of relevant exposure within the boundary of the current AQMA. Corporation Street, Newbold Road and Oliver Street remain the key areas of concern. Continuous monitoring of NO_2 at AQMS 5 Newbold Road indicated that the annual mean NO_2 objective was exceeded at this location in 2010 – the first time an exceedance has been measured since monitoring began at this site. The highest monitored NO_2 concentration in 2010 was measured at the Webb Ellis Pub diffusion tube site (DT 10; 61.4 µg/m^3). Since the annual mean NO_2 concentration at DT 10 was greater than 60 µg/m^3 in 2010, it is possible that the hourly mean objective for NO_2 may also have been exceeded at this location.

The trend in NO_2 concentrations in recent years has potentially been one of general increase and it is a concern that the results from 2010 indicate that the hourly objective for NO_2 may also have been exceeded at one location. It was concluded in previous Review and Assessment reports that the failure to achieve the annual mean objective for NO_2 at locations along Newbold Road and Corporation Street was due to the temporary diversion of traffic along these routes during the construction of the Rugby Western Relief Road. The Relief Road was completed and opened in 2010 although this may have occurred too late in the year to bring about significant reductions in annual mean NO_2 concentrations within the town centre.

The results of short-term diffusion tube monitoring carried out as part of the air quality assessment of the Town Centre Pedestrianisation Scheme, indicated that the annual mean NO_2 objective may be at risk of being breached at other locations within the town centre where previously there has been no monitoring undertaken. In response to this, the Council implemented a continuation of this monitoring at 15 locations to provide further data in these areas.

The objectives for PM_{10} continue to be achieved at all monitoring locations within the Borough and it is unlikely that the annual mean or daily mean objectives for PM_{10} will be exceeded in the future.

10.2 Conclusions relating to New Local Developments

A number of local development proposals have been identified by Rugby Borough Council as having the potential to impact upon local air quality and compromise the Council's progression towards implementing Air Quality Action Plan measures. Specific developments that will require more detailed consideration in the 2012 Updating and Screening Assessment are:

- Climafuel Manufacturing Facility at Malpass Farm;
- Rugby Radio Station development;
- Rugby Gateway development;
- Landfill gas engines and landfill gas flare at the Ling Hall Quarry & Landfill Site; and
- Remediation of Parkfield Road Landfill site.

10.3 Other Conclusions

A number of planning applications with the potential to effect local air quality have been received by Rugby Borough Council, but which are yet to be approved. Should planning permission be granted for these developments, potential effects on local air quality should be considered within the 2012 Updating and Screening Assessment.

10.4 Proposed Actions

Exceedances of the annual mean NO_2 objective continue to be monitored at several locations within the Borough that have historically recorded exceedances. These locations are within the current

boundary of the AQMA. However, 2010 is the first year since monitoring began that the annual mean objective has been exceeded at Newbold Road AQMS 5.

An exceedence of the annual mean NO_2 objective was monitored at Ryton-on-Dunsmore Village Hall (DT5) in 2010. The site does not constitute relevant exposure and after application of the falloff with distance calculation, the annual mean NO_2 concentration at the nearest relevant receptor location was found to be below the annual mean NO_2 objective.

The trend of NO_2 in Rugby in recent years is potentially one of increasing concentrations. Since 2008 NO_2 diffusion tube monitoring has indicated concentrations above or close to the annual mean objective along Newbold Road, Corporation Street, Oliver Street and the Warwick Street Gyratory. At the Webb Ellis Pub site, the annual mean NO_2 concentration in 2010 was greater than 60 $\mu g/m^3$, indicating the potential for the hourly objective for NO_2 to be exceeded at this location.

The concentrations of all other key pollutants are below the prescribed objectives, therefore there is no need to proceed to a Detailed Assessment for any other pollutant.

Rugby Borough Council will expand the current diffusion tube monitoring network within the Borough to create a triplicate monitoring site at the Webb Ellis Pub site (DT10) to investigate with greater certainty the elevated concentration of NO_2 recorded in 2010. It is not feasible establish a continuous monitoring site at this location due to space and highway safety limitations.

An Air Quality Monitoring Task Group will be established in June 2011 to consult upon the future monitoring regime in Rugby after the current monitoring contract expires in 2012. It is intended that the Task Group will report its findings to the Cabinet in October 2011.

Upon ratification of the 2011 data, Rugby Borough Council will be in a position to conclude whether the increasing trend in NO_2 at monitoring locations, along Newbold Road and Corporation Street in particular, are part of an actual increase or a short-term effect caused by the construction of the Rugby Western Relief Road. At this point, Rugby Borough Council will also review the existing AQMA order and decide whether amendments are needed to include the hourly objective. This information will be reported within the 2012 Updating and Screening Assessment.

During the 2011/2012 financial year Rugby Borough Council will conduct a review of the Air Quality Action Plan. This will be carried out after a decision has been made on the proposed extension of the town centre pedestrianised area, the findings of the Air Quality Monitoring Task Group have been reported to the Cabinet and the results of the short-term diffusion tube monitoring survey in Rugby have been compiled and analysed.

11 Appendices

Appendix 1: QA/QC Procedures

Monitoring in Rugby was performed in accordance with the guidelines outlined in Technical Guidance Notes LAQM.TG(09), LAQM.TG(03) and LAQM.TG1(00). All the analysers were set up and calibrated in strict accordance with the manufacturers' recommended procedures prior to and during use. An overview of QA/QC procedures are provided below.

Continuous Monitoring QA/QC Procedures

Automatic remote calibrations of the NO_X analyser are conducted daily. These automatic calibrations are supplemented by manual calibrations every two to three weeks to quantitatively determine instrumental drift. Air Liquide specialist calibration gases are used to obtain span values and instrumental drift is accounted for during the processing of the data. Analyser filters are also changed during these routine calibrations, with span and zero determinations being made before and after. Any instrument span or zero drift was assumed to be linear between discrete checks, and the data corrected linearly in accordance with any drift.

All fittings in contact with the sample gas stream are either polytetrafluoroethene (PTFE) or stainless steel, so that surface losses are kept to a minimum. Qualified engineers service the analysers at six monthly intervals.

The TEOM-FDMS analyser filters are changed every four weeks during routine site visits. The sampling head is cleaned regularly. Visual inspection of the analyser along with remote access to diagnostic information ensures problems can be identified quickly and dealt with effectively, thus ensuring good data capture rates. Qualified engineers service the TEOM-FDMS every six months.

The five Turnkey Osiris Dust Monitors are inspected every four to six weeks during routine site visits. The filters are changed and sample flow rates are checked and adjusted as necessary. The monitors are returned to the manufacturer annually for recalibration and servicing.

All site visits are documented to describe any adjustments made and to record any problems encountered. Results of all analyser tests and calibrations are recorded. Following scheduled service visits service reports are issued by the service engineers to provide documentation of maintenance performed.

PM Monitoring Adjustment

PM_{10} concentrations at AQMS 5 Newbold Road are measured by TEOM-FDMS and so do not require any correction for gravimetric equivalence. Particulate matter concentrations measured by the Turnkey Osiris Dust Monitors are presented without any correction because the optical measurement method used by the Osiris analysers is not accepted as an Equivalence measurement method either with or without correction. Previous studies in Rugby indicated a good agreement between co-located Turnkey and TEOM instruments and thus it is considered acceptable to present the Turnkey concentrations without adjustment.

Diffusion Tube Monitoring QA/QC Procedures

Diffusion Tube Bias Adjustment Factors

All NO_2 diffusion tubes used by Rugby Borough Council are supplied and analysed by Harwell Scientific using a 50% TEA in Acetone preparation method. Analysis is performed in accordance with standard operating procedure HS/WI/1015 Issue 14. This method conforms to the guidelines set out in Defra's 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance'[xiii].

Harwell Scientifics participates in the WASP intercomparison scheme for comparing spike NO_2 Diffusion Tubes. In the most recent quarterly summary report[xiv], Harwell Scientifics is currently ranked as a Category "Good" laboratory.

A national bias adjustment factor for 2010 of 0.85, based on eighteen diffusion tube co-location studies using the same preparation method and analytical laboratory was obtained from the Review and Assessment Helpdesk[xv] Spreadsheet version 04/11 (Table 11.2).

Factor from Local Co-location Studies

A local bias adjustment factor for NO_2 Diffusion Tube monitoring was derived from a co-location study. Triplicate tubes were placed alongside the NO_X Analyser at AQMS 5 Newbold Road. The AEA_DifTPAB_v04 Spreadsheet obtained from the Defra LAQM website[xvi] was used to calculate a local bias adjustment factor. Details of the local bias adjustment calculation are shown in Figure 11.1 below.

The factor calculated from the co-location study yielded a factor of 1.14. The mean CV of the co-location monitoring periods in 2010 was 6, corresponding to "Good" overall precision.

Selection of Bias Adjustment Factor for Diffusion Tube Correction

Local and national bias adjustment factors have been derived for correction of the NO_2 diffusion tube results for Rugby, as described above. In applying bias-adjustment to the raw diffusion data for 2010 it was decided to use the national factor. The reason for choosing the national factor is that the co-location study undertaken in Rugby is considered to provide a better indication of local conditions than the use of a national factor. Furthermore, applying the national bias adjustment factor to the Newbold Road co-located triplicate tubes would result in an annual mean NO_2 measured by the diffusion tubes significantly lower than the annual mean measured by the continuous analyser, which should be considered to offer more accurate measurements.

In comparison with the national bias-adjustment factor the locally-derived factor is larger and results in higher bias-adjusted NO_2 concentrations in Rugby.

Table 11.1: National NO_2 Diffusion Tube Bias Adjustment Factors, 2010

Analysed By[1]	Method To undo your selection, choose (All) from the pop-up list	Year[5] To undo your selection, choose (All)	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m^3)	Automatic Monitor Mean Conc. (Cm) (µg/m^3)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Harwell Scientific Services	50% TEA in Acetone	2010	R	Hambleton DC	11	26	18	46.6%	G	**0.68**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Falkirk Council	11	37	31	18.6%	P	**0.84**
Harwell Scientific Services	50% TEA in Acetone	2010	UB	Falkirk Council	10	27	22	21.1%	P	**0.83**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Swale BC	12	46	39	18.1%	G	**0.85**
Harwell Scientific Services	50% TEA in Acetone	2010	UC	Dover DC	12	44	42	5.2%	G	**0.95**
Harwell Scientific Services	50% TEA in Acetone	2010	B	Gravesham BC	10	36	27	31.8%	G	**0.76**
Harwell Scientific Services	50% TEA in Acetone	2010	I	Swale BC	10	25	30	-17.6%	G	**1.21**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Tunbridge Wells BC	12	67	77	-13.5%	G	**1.16**
Harwell Scientific Services	50% TEA in Acetone	2010	B	Canterbury CC	12	21	18	15.4%	G	**0.87**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Canterbury CC	12	48	34	41.7%	G	**0.71**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Gravesham BC	11	42	36	16.5%	G	**0.86**
Harwell Scientific Services	50% TEA in Acetone	2010	UB	City of York Council	12	26	25	6.6%	G	**0.94**
Harwell Scientific Services	50% TEA in Acetone	2010	B	Gravesham BC	10	36	27	31.8%	G	**0.76**
Harwell Scientific Services	50% TEA in Acetone	2010	B	Stockton on Tees	12	30	27	10.5%	G	**0.91**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Stockton on Tees	12	25	21	17.1%	G	**0.85**
Harwell Scientific Services	50% TEA in Acetone	2010	K	Marylebone Road Intercomparison	11	120	94	27.3%	G	**0.79**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Vale of White Horse DC	12	39	32	23.6%	G	**0.81**
Harwell Scientific Services	50% TEA in Acetone	2010	R	Thanet DC	11	32	26	25.8%	G	**0.79**
Harwell Scientific Services	50% TEA in Acetone	2010		**Overall Factor[3] (18 studies)**				**Use**		**0.85**

Figure 11.1: NO_2 Diffusion Tube Bias Adjustment Calculation from Co-Location Study, Rugby 2010.

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	03/02/2010	03/03/2010	60.4	56.5	59.2	59	2.0	3	5.0	49.9	100.0	Good	Good
2	03/03/2010	31/03/2010	48.4	45.3	48.4	47	1.8	4	4.4	52.4	100.0	Good	Good
3	31/03/2010	28/04/2010	40.7	34.8	41.8	39	3.8	10	9.4	52.3	99.7	Good	Good
4	28/04/2010	04/06/2010	14.1	17.8	18.1	17	2.2	13	5.5	45.2	99.9	Good	Good
5	04/06/2010	01/07/2010	19.5	24.6	25	23	3.1	13	7.6	34.1	100.0	Good	Good
6	01/07/2010	04/08/2010	21.5	21.4	21.8	22	0.2	1	0.5	23.4	100.0	Good	Good
7	04/08/2010	02/09/2010	27	25.9	24.4	26	1.3	5	3.2	27.8	99.9	Good	Good
8	02/09/2010	28/09/2010	31.8	32.2	32.3	32	0.3	1	0.7	34.4	99.8	Good	Good
9	28/09/2010	02/11/2010	34.6	32.2	31.4	33	1.7	5	4.1	37.7	99.9	Good	Good
10	02/11/2010	01/12/2010	47.7	46.8	48.5	48	0.9	2	2.1	43.1	100.0	Good	Good
11	01/12/2010	05/01/2011	42	55.2	49.3	49	6.6	14	16.4	48.2	100.0	Good	Good
12													
13													
											Overall survey -->	Good precision	Good Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

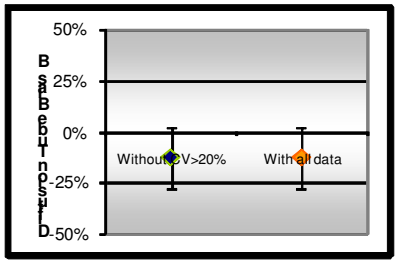
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	Rugby Newbold Road

Precision: 11 out of 11 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 11 periods of data	
Bias factor A	1.14 (0.98 - 1.37)
Bias B	-12% (-27% - 3%)
Diffusion Tubes Mean:	36 μgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	41 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	41 (35 - 49) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 11 periods of data	
Bias factor A	1.14 (0.98 - 1.37)
Bias B	-12% (-27% - 3%)
Diffusion Tubes Mean:	36 μgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	41 μgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	41 (35 - 49) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

Appendix 2: Pollution Prevention and Control Register

Table 11.2: Pollution Prevention and Control Register, April 2011

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
5/PPC/3.1(a)	18.2.93 25.11.98 11.03.04 20.12.05	The Company Secretary, Cemex Ltd Camden House Clearwater Park Thornaby Stockton on Tees TS17 6QY	Cemex UK Materials, Leicester Road, RUGBY.	SP 503765	28805/001	Concrete Batching
6/PPC/3.1(a)	16.3.92 30.11.98 00.03.04 19.10.05	FAO Purchase Ledger Lafarge Aggregates Ltd PO Box 7390 Grinite House Grinite way Syston Leicester LE7 1WQ	Lafarge Aggregates Limited Concrete Batching Plant Brandon Lane, Willenhall, COVENTRY, CV3 3GW.	SP 386757	3495/001	Concrete Batching
8/PPC/3.1(a)	5.1.93 15.1.99 13.03.03 09.06.06	Tarmac Limited Millfields Road Ettingshall Wolverhampton West Midlands WV 4 6JP Tel 01902 353522	Tarmac Central Ltd, Unit 11, Dunchurch Trading Estate, A45 London Road, Dunchurch, Nr. RUGBY. CV23 9LN.	SP 458719	6028/001	Concrete Batching
9/PPC/3.1(a)	11.2.93 29.4.99 26.05.04	Marshalls Mono Ltd. Landscape House, Premier Way, Lowfields Business park, Eland, West Yorkshire. HX5 9HT	Stonemarket Limited, Old Gravel Quarry Oxford Road Ryton-on-Dunsmore Nr. COVENTRY, CV8 3EJ.	SP 379741	38181/001	Concrete Batching

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
11/PPC/3.1(a)	19.1.93 11.03.04	Tailby Brack Limited Butlers Leap, RUGBY. CV21 3RQ.	Cwikskip, Butlers Leap, RUGBY. CV21 3RQ Dismantled but permit still in force 28.09.04 26.07.10	SP 515760	2202/001	Concrete Batching
13/PPC/6.5(a)	14.6.93 2.11.00 Part A Issued 31.01.07	Ball Packaging Europe UK Limited, Lakeside Chester Business Park Wrexham Road Chester CH4 9QT	Ball Packaging Pretorian Way, Glebe Farm Industrial Estate, RUGBY. CV21 2RN.	SP 502772	548/001	Metal Coating
16/EPA/E.A EA Ref:	22.2.93	National Grid Gas plc (Company Registered Address) 1-3 strand London WC2N 5EH	British Gas plc., Churchover Compressor Station, Churchover Lane, Harborough Magna, RUGBY. CV23 0HH.	Withheld	N/a	Natural gas
17/PPC/6.9(a)	22.2.93 2.10.00 11.10.04	The Secretary Bakers Mill Ltd, Laughing Dog Bakery London Road, Dunchurch, RUGBY, Warwickshire. CV23 9LP	Laughing Dog Bakery, London Road, Dunchurch, RUGBY. CV23 9LP. No Longer in Operation – Permit not in force as of 2.6.09	SP 459719	4192 or 5668	Animal Feed Stuff
23/PPC/1.3(e)	21.11.92 9.11.99 12.03.04	Wolston Garage and Engineering Wolston, Nr. Coventry. CV8 3HB.	Wolston Garage & Engineering Wolston Nr Coventry CV8 3HB	SP 413753	1523/001	Waste Oil Burning

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
24/EPA/3.1 EA	16.6.93	The Company Secretary, Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe. Egham SURREY. TW20 8TD	Cemex Lawford Road, RUGBY.	SP 488757		Cement Manufacturing
29/PPC/6.5(b)	28.2.96 18.1.00 01.04.04 04.01.07	The Rugby Bodyshoppe, 2 Avon Industrial Estate, Butlers Leap, RUGBY. CV21 3UY.	(As applicant)	SP 515762	5580/001	Vehicle
30/PPC/1.1(a)	06.03.98 02.04.04	National Grid Gas plc (Company Registered Address) 1-3 strand London WC2N 5EH Contact Michelle Booth 01455 231624 (admin address) National Grid Block 4 Area 7 Brick Kiln Street Hinckley Leicestershire LE10 ONA Email michelle.booth@uk.ngrid.com	Coventry Road, Church Lawford (Site occupier)	Withheld No longer covered under the Environmental Permitting (England and Wales) Regulations 2010	12890	Gas Odorisation
31/PPC/3.4	3.10.97 30.03.04 15.12.05 Currently being updated (1/5/09)	DB Schenker Rail (UK) Limited Lakeside Business Park, Carolina Way, Doncaster, DN4 5PN. Tel. 0870 1406279 (Darren Thompson) Darren.Thompson@ Dbschenker.com	DB Schenker No 6 Siding Rugby Up Sidings Yard, Off Hunters Lane, RUGBY.	SP 504762 Permit no longer required 26th March 2010	7666	Coal and Pet. Coke unloading and loading

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
32/PPC/1.4(b)	24.9.98 31.03.03 12.03.04	Sainsbury's Supermarkets Ltd 33 Holborn London EC1N 2HT Tel. 02076956000 Fax 020 7695 7610 www.sainsbury.co.uk	Sainsbury's Supermarkets Limited Petrol Station 385 Dunchurch Road, RUGBY. CV22 6HU.	SP 495726	9446/001	Unloading of petrol into stationary storage tanks at a service station
33/PPC/1.4(b)	25.9.98 12.03.04 15.06.06	(Texaco Franchise) Mr Munaf Lakha LW Fuels Limited 50 Woodgate Leicester LE3 5GF	LW Fuels Limited Stretton Service Station A45 London Road Southbound Stretton On Dunsmore Coventry CV23 9HX	SP 416733	31530/001	Unloading of petrol into stationary storage tanks at a service station
34/PPC/1.4(b)	25.9.98 30.06.04	Total UK Limited 40 Clarendon Road, Watford, Hertfordshire, WD17 1QT.	Great Central Service Station 89 Hillmorton Road, RUGBY. CV22 5AG.	SP 513749	10558/001	Unloading of petrol into stationary storage tanks at a service station
35/PPC/1.4(b)	25.9.98 16.03.04 3.03.04	Tesco Stores Limited, P.O. Box 400, Cirrus Building, Shire Park, Welwyn Garden City, Herts, AL7 1AB. Contact: Lynda Vick 01707 634088	Tesco Stores Limited, 1 Leicester Road, RUGBY. CV21 1RG.	SP 506769	8486/001	Unloading of petrol into stationary storage tanks at a service station
37/PPC/1.4(b)	23.11.98 26.02.02 20.09.02 12.03.04	(Texaco Franchise) Mr I Patel 30 Shipley Road Leicester LE5 5BW 0116 2731351	Pure Fuels (UK) Ltd (A45 – Northbound), London Road, Dunstore Heath Rugby, Coventry CV23 9LG	SP 453719	37857/001	Unloading of petrol into stationary storage tanks at a service station

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
38/PPC/1.4(b)	19.1.99 23.02.04 24.03.04	Mr S. Nathawani Gibbetts Cross Station Ltd Watling Street Shawell, Lutterworth, LE17 6AR	Gibbetts Cross Station Ltd Watling Street Shawell, Lutterworth, LE17 6AR	SP 529808	40527/001	Unloading of petrol into stationary storage tanks at a service station
39/PPC/1.4(b)	25.3.99 31.03.03 12.03.04	Murco Petroleum Limited, 4 Beaconsfield Road, St. Albans, Hertfordshire, AL1 3RH.	Lawford Road Service Station, Lawford Road, RUGBY, CV21 3HAQ.	SP 493754	9449/001	Unloading of petrol into stationary storage tanks at a service station
40/PPC/1.4(b)	20.1.99 10.02.06	Murco Petroleum Limited 4 Beaconsfield Road St. Albans Hertfordshire AL1 3RH	Rugby Leicester Road Service Station, Leicester Road, RUGBY. CV22 5EZ.	SP 501763	9449/001	Unloading of petrol into stationary storage tanks at a service station
41/PPC/1.4(b)	22.1.99 10.02.06	Murco Petroleum Limited 4 Beaconsfield Road St. Albans Hertfordshire AL1 3RH	Binley Woods Service Station, Coventry Eastern By-pass, COVENTRY, CV3 2ZZ.	SP 382769	9449/001	Unloading of petrol into stationary storage tanks at a service station
42/PPC/1.4(b)	23.4.99 23.02.04	Total Fina Elf UK Limited, 40 Clarence Road, Watford, Hertfordshire, WD1 1TQ.	Total Convenience Store (Auto Stop), 54 Lawford Road, RUGBY. CV21 3EA.	SP 500751	9448/001	Unloading of petrol into stationary storage tanks at a service station
43/PPC/1.4(b)	25.3.99 02.02.06	Mr N. Navanathan 339 Hillmorton Road, RUGBY. CV22 5EZ.	Paddox Service Station, 339 Hillmorton Road, RUGBY. CV22 5EZ.	SP 527738	42697/001	Unloading of petrol into stationary storage tanks at a service station

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
46/PPC/6.5	22.2.00 21.11.05 08.12.06	XK Engineering Limited, Swallow House, Shilton Industrial Estate, Shilton, Coventry CV7 9JY	(As applicant)	SP 402855	7272/001	Vehicle
47/PPC/1.4(b)	16.6.00 12.03.04	STK Services Limited Dunchurch Service Station Coventry Road Dunchurch Rugby CV22 6RA Contact: Mr S. Tanna.	Dunchurch Service Station, Coventry Road, Dunchurch, RUGBY, CV22 6RA.	SP 484714	37295/001	Unloading of petrol into stationary storage tanks at a service station
51/PPC/6.2(a)	19.09.02 27.09.05	Elmdene Ltd, Ryton Lodge Farm, Oxford Road, Ryton-on-Dunsmore, CV8 3EJ.	Elmdene Ltd, Ryton Lodge Farm, Oxford Road, Ryton-on-Dunsmore, CV8 3EJ.	SP 405708	17911/001	Di-isocyanate
52/PPC/3.5(c)	26.02.03 24.03.04	B Reilly & Son Limited 19 North Road Clifton Rugby Warwickshire, CV23 0BW	Mobile plant		17910/001	Mobile screening and crushing process.
57/PPC A1 Installation (EA Reference BU2381)	30.3.2005	Onyx Landfill Ltd 54 Pentoville Road London N1 9PE	Ling Hall Landfill Site Coal Pit Lane Rugby Warwickshire CB23 9HH	SP 445 735	221 5767	Landfill Site
59/QP3434SH EA Enforced	20.10.05	Britvic House Broomfield House Chelmsford Essex CM1 1TU	Britvic Soft Drinks, Rugby Aventine Way Glebe Farm Industrial Estate RUGBY CV21 1HA			Soft Drinks Manufacture

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
60/PPC/3.1(a)	30.11.05	Breedon Aggregates Limited Breedon Quarry Main Street Breedon-on-the-Hill Derby Derbyshire DE73 8AP	Breedon Aggregates Limited Ling Hall Quarry Coal Pit Lane Lawford Heath CV23 9HH		29927/001	Concrete Batching
61/PPC/3.1(a)	06.09.06	Premier Mortars Birkby Grange Birkby Hall Road Birkby Huddersfield HD2 2YA	Premier Mortars Brinklow Quarry Coventry Road Brinklow Rugby Warwickshire CV23 ONJ	Permit Surrendered: Cease to operate from 31st March 2010		Concrete Batching
64/PPC/ A1 Installation (EA Reference EA/PPC/BP3234 LK Permit number BU2381iE		Summerleaze RE-Generation Ltd 7 Summerleaze Road Maidenhead Berkshire SL6 8SP	Ling Hall Gas Plant Ling Hall Landfill Coalpit Lane Lawford Heath Rugby Warwickshire CV23 (HH	SP45007341	00151665	Gas Utilisation Plant
65/PPC SED Installation	04.01.07 11.04.07	Johnson's Cleaners UK Ltd Lydia House Puma Court Kings Business Park Kings Drive Prescot L34 1PJ	35 Clifton Road Rugby Warwickshire CV21 3QF		1312/002	Dry Cleaners
66/PPC SED Installation	18.01.07 10.04.07	Johnson's Cleaners UK Ltd Lydia House Puma Court Kings Business Park Kings Drive Prescot L34 1PJ	Johnsons Cleaners UK Ltd Central Processing Unit Unit 17, Gladiator Way Rugby Warwickshire, CV21 1DD		1312/002	Dry Cleaners

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
67/PPC SED Installation	04.01.07	Brightly Dry Cleaners & Shirt Laundry 45 Woodlands Avenue Binley Woods Coventry CV3 2JL	Brightly Dry Cleaners & Shirt Laundry 45 Woodlands Avenue Binley Woods Coventry CV3 2JL		34538/001	Dry Cleaners
68/PPC SED Installation	18.01.07	Timpson Dry Cleaners C/O Sainsbury's PLC 383 Dunchurch Road Rugby Warwickshire CV22 6HU	Timpson Dry Cleaners C/O Sainsbury's PLC 383 Dunchurch Road Rugby Warwickshire CV22 6HU Permit Surrendered		40376/001	Dry Cleaners
69/PPC Plus SED	19/2/2007	Blanc Aero Industries Ltd Butlers Leap Rugby Warwickshire CV21 3RG	Blanc Aero Industries Ltd Butlers Leap RUGBY CV21 3RQ	SP 518 761	34535/001	Coating& Surface Treatment of Metals plus Degreasing Process
70/PPC	18.01.07	The Village Dry Cleaners, 63 High Street, Hillmorton, Rugby. CV21 4EG.	The Village Dry Cleaners, 63 High Street, Hillmorton, Rugby. CV21 4EG.		1445/001	Dry Cleaners
71/PPC	28.03.07	Breedon Aggregates Limited Breedon Quarry Main Street Breedon-on-the-Hill Derby Derbyshire DE73 8AP	Breedon Aggregates Limited Ling Hall Quarry Coalpit Lane Lawford Heath Nr Rugby Warwickshire CV23 9HH		29927/001	Road stone Coating Plant

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
72/PPC	18/4/2007	Brinklow Quarry, Coventry Road, Brinklow Cv23 0NJ.	As Applicant Current permit but crusher not in use	SP 421 786	35797/001	Mobile Crushing & Screening
73/PPC	EA - Pending	W Potter and Sons (Poultry Limited Willey Fields Farm CV23 OSQ	As Applicant			Poultry Rearing Plant 84000 Pullets
74/PPC	EA - Pending	Bio Depot Ltd, The Locks, Hillmorton, Rugby, CV21 4PP.	30 Butlers Leap, Rugby, Warwickshire.	SP 5197 61		Bio Diesel Production
75/PPC/1.3(e)	14/05/2009	Woodlands Service Station 37 Cymbeline Way Bilton Rugby Warwickshire Cv22 6JZ	As Applicant Contact Jackie Sewell	TBC	40378/001	Waste Oil Burning
76/EPA/EA	EA - Transfer	Charles Trent Ltd Trent House 8 St. George's Avenue Parkstone Poole Dorset BH12 4ND	Charles Trent Ltd Avon Lane Land off Newbold Road Rugby Warwickshire CV21 1HF EA Ref: EPR/AP3995SC			Vehicle Dismantlers
77/PPC/1.3(e)	23/03/09	T W Tyres 11 Paynes Lane New Bilton Rugby Warwickshire CV21 2UH	T W Tyres 11 Paynes Lane New Bilton Rugby Warwickshire CV21 2UH	TBC	574/001	Waste Oil Burning

Ref No.	Date Authorised	Applicant	Address to which relates	O S Grid Ref.	Customer Number	Process
78/PPC/1.4b	08/05/2009	Euro Garages Limited Euro House Beehive Trading Park Blackburn Lancashire BB1 7EE	Euro Garages Limited, Corporation Street Rugby Warwickshire CV21 2DN	TBC	8487/001	Petrol Station
79.EP/3.1(a)	Being Determined – Application duly made on 07/10/2009	The Company Secretary, Cemex UK Materials Limited, Cemex House, Coldharbour Lane, Thorpe, Egham SURREY. TW20 8TD.	Proposed: Rugby Ready Mixed Concrete Plant Somers Road Rugby Warwickshire CV22 7DE	TBC Application for Permit cancelled 26.05.10	3250	Concrete Batching
80/PPC	Being Determined – Application duly made on	Regal Dry Cleaners (Warwickshire) Ltd 18a Hunters Lane Rugby Warwickshire CV21 1EA	Regal Dry Cleaners (Warwickshire) Ltd 18a Hunters Lane Rugby Warwickshire CV21 1EA	TBC		Dry Cleaners
79.EP/3.1(a)	Being Determined – Application Received 7/12/2010	The Company Secretary, Cemex UK Materials Limited, Shared Service Centre, Camden House Thornaby Stockton-on-Tees TS17 6QY	Proposed: Rugby Ready Mixed Concrete Plant Somers Road Rugby Warwickshire CV22 7DE	SP488753	3250	Concrete Batching
80/PPC	02/12/2010	Regal Dry Cleaners (Warwickshire) Ltd 18a Hunters Lane Rugby Warwickshire CV21 1EA	Regal Dry Cleaners (Warwickshire) Ltd 18a Hunters Lane Rugby Warwickshire CV21 1EA	TBC		Dry Cleaners

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