



# 2015 Updating and Screening Assessment for Redditch Borough Council

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

November 2015

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<b>Report Reference number</b>	RBC USA 2015
<b>Date</b>	November 2015

## Executive Summary

Redditch Borough Council has undertaken this Updating and Screening Assessment to fulfil requirements of Local Air Quality Management regime as set out in Part IV of the Environment Act 1995. The report provides an update on any relevant changes to local air quality that have occurred in Redditch since the 2014 Air Quality Progress Report.

Redditch Borough Council has not identified a requirement to move to Detailed Assessment for any pollutants. The Council currently only monitor nitrogen dioxide (NO<sub>2</sub>) levels within the Borough.

For 2014, the number of nitrogen dioxide (NO<sub>2</sub>) monitoring tubes in Redditch were reduced from 16 to 9 tubes. The 2014 monitoring results (adjusted for bias) indicate there are no exceedances of the annual mean air quality objective of 40µg/m<sup>3</sup> for (NO<sub>2</sub>) when taking into account the concentrations at the nearest receptors.

Data from monitoring locations across the Borough generally demonstrates a downward trend between 2013 and 2014. Most monitoring locations have recorded concentrations well below the air quality objectives for nitrogen dioxide in the last 5 years.

Redditch Borough Council's assessment of sources has not identified any likely exceedances from new or significantly changed local developments. However, the Council have identified a new development, a Standby Diesel Generator compound, that may require consideration in future rounds of review and assessment.

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# 1 Introduction

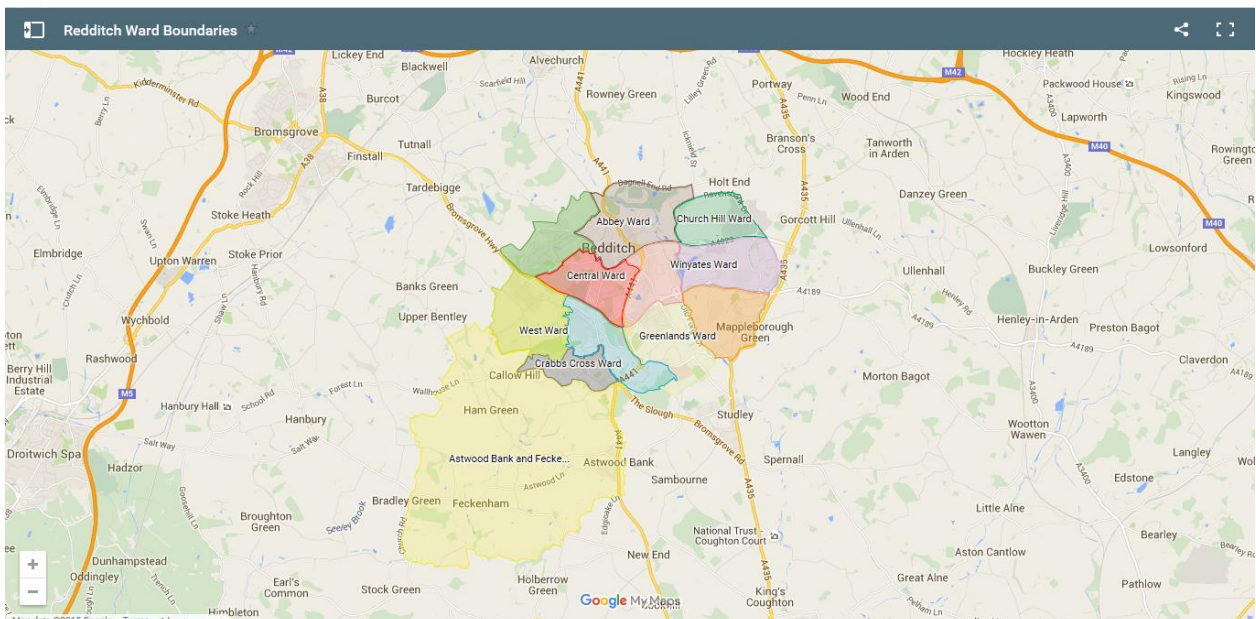
## 1.1 Description of Local Authority Area

The Borough of Redditch is situated in the north east of the County of Worcestershire. It is bounded by three other local authorities, Bromsgrove, Stratford-on-Avon and Wychavon District Councils. It lies 21km south of Birmingham within the green belt and covers an area of approximately 5,435 hectares. The Borough is split into two halves of roughly equal size; the northern area of the Borough comprises the urban area of Redditch, whilst the southern area is rural, comprising villages such as Astwood Bank and Feckenham.

Since the town was designated as a 'new town' in 1964 extensive development has taken place and the population has more than doubled to its present level of around 84,200 (2011 national census data).

There are few trunk roads through the borough as can be seen from Figure 1 below. The A441 divides the borough in two from north to south and the A448 traverses from the west and exits the borough to the south east. Being a new town the road network has been designed so that major traffic sources of pollutants are located some distance from receptors for most of the network.

**Figure 1 Map of Redditch Borough and major roads.**



## 1.2 Purpose of Report

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

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

## 1.3 Air Quality Objectives

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



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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
	5.00 µg/m <sup>3</sup>	Running annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m <sup>3</sup>	Running 8-hour mean	31.12.2003
Lead	0.5 µg/m <sup>3</sup>	Annual mean	31.12.2004
	0.25 µg/m <sup>3</sup>	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m <sup>3</sup>	Annual mean	31.12.2005
Particles (PM <sub>10</sub> ) (gravimetric)	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m <sup>3</sup>	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

## 1.4 Summary of Previous Review and Assessments

Redditch Borough Council has been reviewing air quality annually since the Local Air Quality Management system was introduced in 1998, producing Progress Reports or Updating and Screening Assessments as required by Defra.

The principal source of air pollution within the borough of Redditch is related to road traffic emissions, and the principal pollutant of concern is nitrogen dioxide. This has

been measured using diffusion tubes across the borough and in Round 4 identified the need for a Detailed Assessment of air quality in Other Road. The Detailed Assessment concluded that an Air Quality Management Area was not required at that time.

The last Progress Report (Dec 2014) in Round 5 of review and assessment again indicated a potential exceedance of the annual average air quality objective for nitrogen dioxide in Other Road, Redditch and the local authority outlined intentions to proceed to detailed assessment. However, comments received from Defra (January, 2015) following submission of the report indicated a further detailed assessment of the area is unnecessary unless there have been any local changes to the volume or nature of traffic since the previous Detailed Assessment. A review undertaken in March 2015 by WRS in conjunction with the local authority Strategic Planning officer confirms there has been no significant road infrastructure change or development or substantial increases in traffic volumes in the local vicinity since the previous detailed assessment. Therefore no further Detailed Assessment of Other Road will be undertaken at this time. Furthermore, following discussions between WRS and Worcestershire County Council Highways representative and the RBC Strategic Planning officer it is anticipated that access to the specific area of Other Road, Redditch will be restricted as part of future redevelopment of Redditch Town Centre highways network.

**Table 1.2 Summary of Previous Review and Assessment**

Date	Report/ Order	Outcomes
Dec 2014	Annual Progress Report	Detailed Assessment required for NO <sub>2</sub> in Other Road, Redditch.
Nov 2013	Annual Progress Report	No exceedances of objectives recorded
Jul 2012	Updating and Screening Assessment	No exceedances of objectives recorded
Mar 2011	Annual Progress Report	Detailed Assessment required for NO <sub>2</sub> in Other Road, Redditch.
Mar 2010	Annual Progress Report	No exceedances of objectives recorded
Mar 2010	Detailed Assessment Other Road, Redditch	No requirement to declare AQMA
-	Round Four Review and Assessment	Detailed Assessment required for NO <sub>2</sub> in Other Road, Redditch.
-	Third stage Review and Assessment	No exceedances of objectives recorded
-	Second stage Review and Assessment	No exceedances of objectives recorded
-	First stage Review and Assessment	No exceedances of objectives recorded

## 2 New Monitoring Data

### 2.1 Summary of Monitoring Undertaken

#### 2.1.1 Automatic Monitoring Sites

Redditch Borough Council does not currently undertake any automatic monitoring.

#### 2.1.2 Non-Automatic Monitoring Sites

For 2014, the number of nitrogen dioxide (NO<sub>2</sub>) monitoring tubes in Redditch were reduced from 16 to 9 tubes. The following sites were decommissioned due to their lack of proximity to sources and/or relevant receptors and low concentrations of NO<sub>2</sub> recorded over a period of years.

**Table 2.1 Decommissioned nitrogen dioxide tube locations in 2014**

Tube ID	Location
1N	Arrow Valley Park
3N	Rough Hill Roundabout
9N	o/s 287 Birmingham Road (kerbside)
11N	Astwood Bank Crossroads
18N	Windsor Road
19N	Headless Cross Drive
24N	Linton Mews

Most diffusion tubes are located at house facades to correspond to relative public exposure, however some are adjacent to the roadside. Figures 2 to 5 showing the position of the existing monitoring sites are presented below.

Results of non-automatic monitoring of nitrogen dioxide diffusion tubes for 2014 are presented in section 2.2. The results have been adjusted for bias using a national correction factor derived from Defra of 0.89.

QA/QC information on the company and methods used is shown in Appendix A.

Figure 2 Map 1 of Redditch Non-Automatic Monitoring Sites

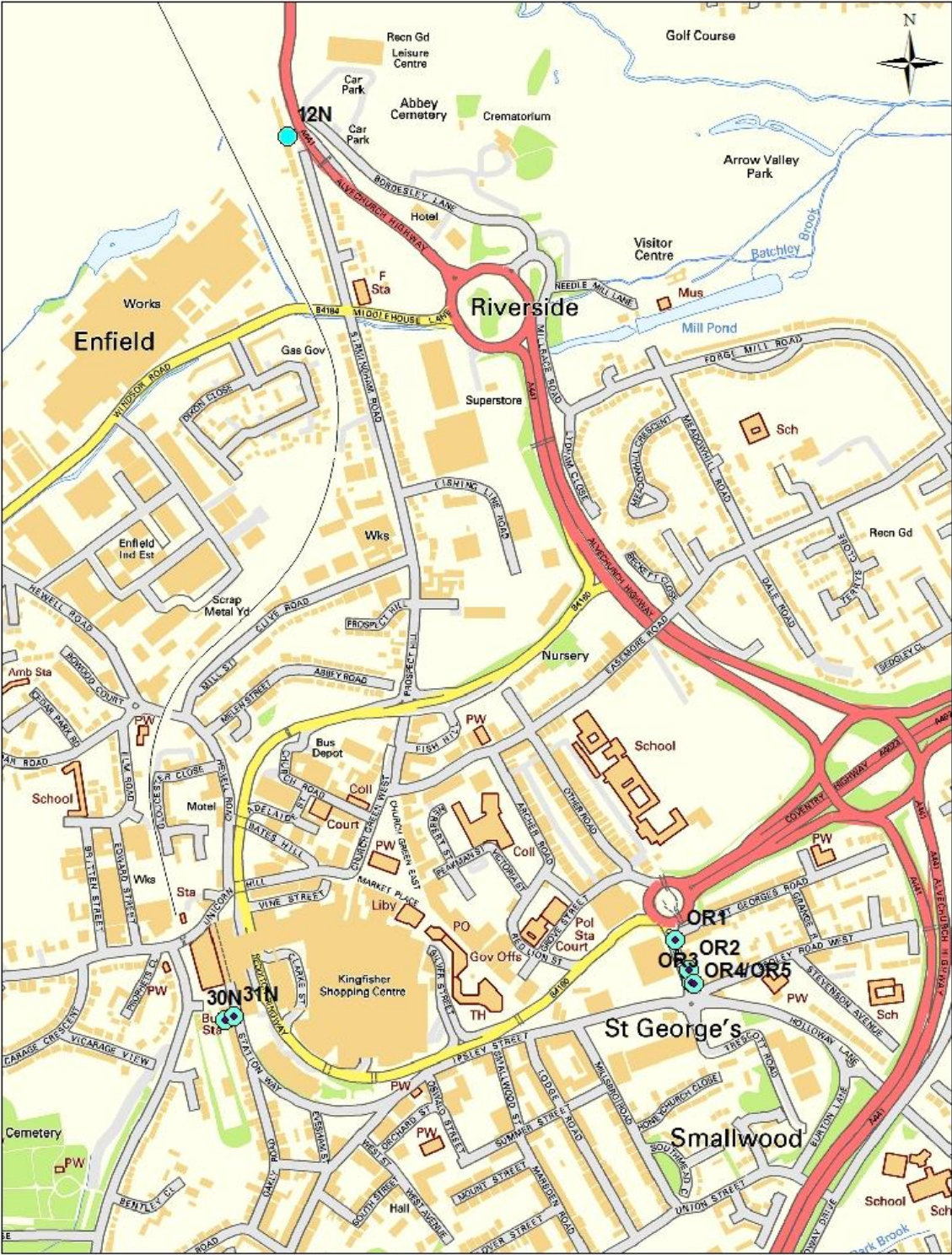


Figure 3 Map 2 of Redditch Non-Automatic Monitoring Sites

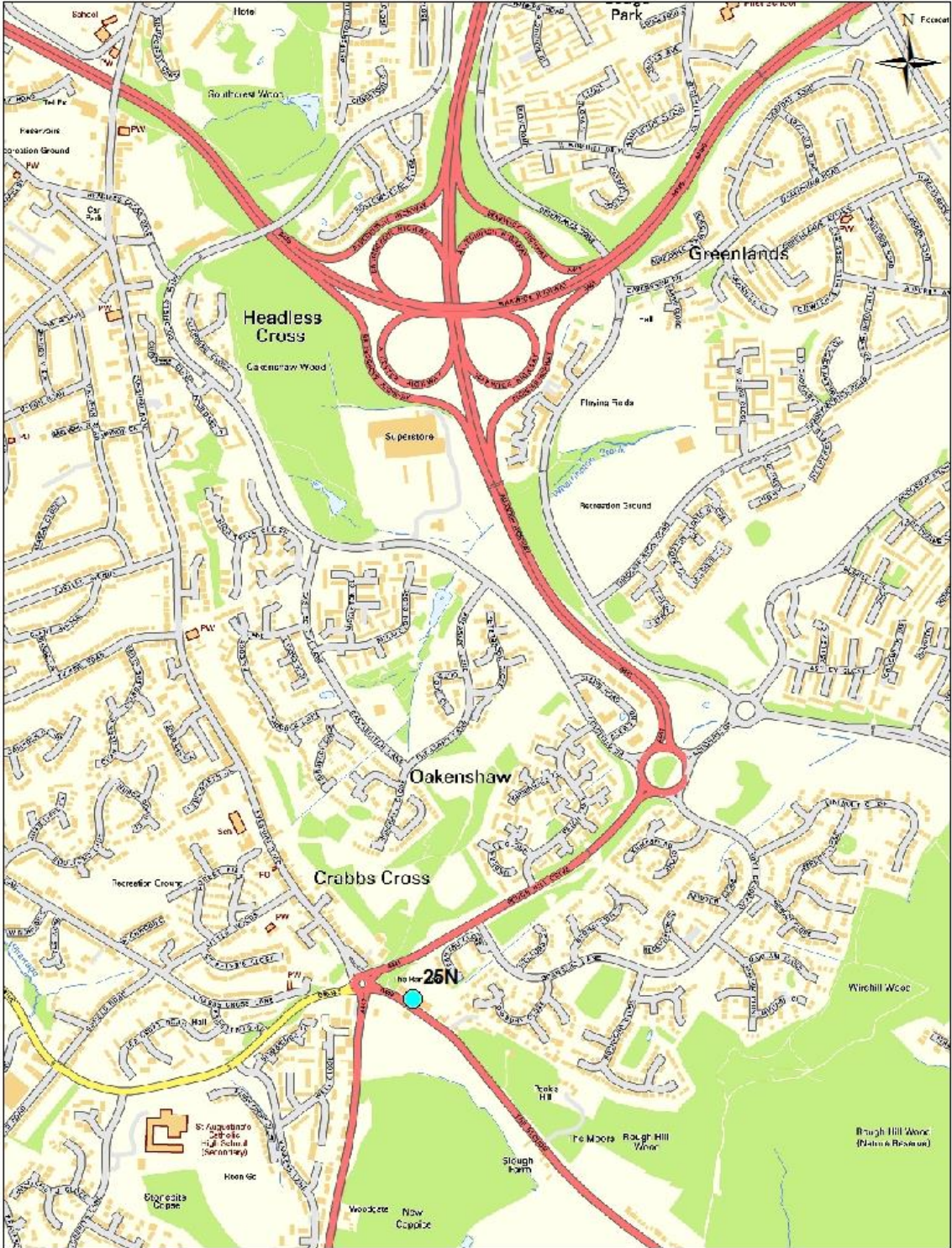
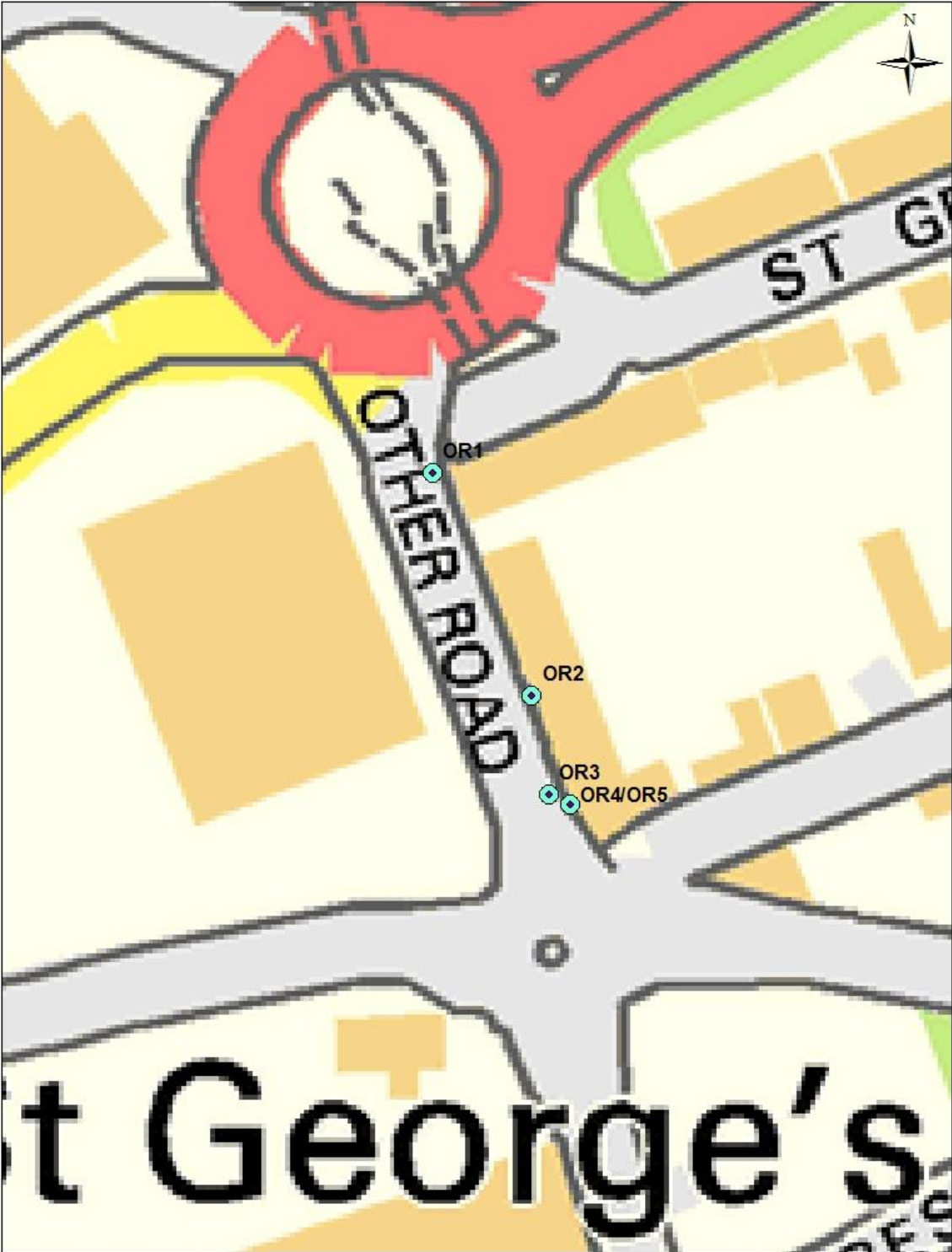


Figure 4 Map 3 of Other Road Non-Automatic Monitoring Sites



**Table 2.2 Details of Non-Automatic Monitoring Sites**

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	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?
12N	287 Birmingham Road	Roadside	403983	268815	NO <sub>2</sub>	N	N	Y (0m)	16m	Y
OR1	Other Road Street Lamp 2237	Roadside	404599	267542	NO <sub>2</sub>	N	N	Y(3m)	1.5m	N
OR2 (26N)	14 Other Road	Roadside	404620	267495	NO <sub>2</sub>	N	N	Y (0m)	3m	Y
OR3 (17N)	Other Road (roadsign)	Kerbside	404625	267479	NO <sub>2</sub>	N	N	Y (3.5m)	0.5m	N
28N (OR4)	Other Road Misty Florist	Roadside	404629	267467	NO <sub>2</sub>	N	N	Y (0m)	4m	Y
29N OR5	Other Road Misty Florist	Roadside	404629	267467	NO <sub>2</sub>	N	N	Y (0m)	4m	Y
25N	41 The Slough	Roadside	404415	264384	NO <sub>2</sub>	N	N	Y (0m)	2m	Y
30N	34 Oakly Road	Other	403883	267414	NO <sub>2</sub>	N	N	Y (0m)	18m	Y
31N	o/s 34 Oakly Road	Roadside	403898	267420	NO <sub>2</sub>	N	N	Y (2.5m)	2m	N



## 2.2 Comparison of Monitoring Results with Air Quality Objectives

### 2.2.1 Nitrogen Dioxide

#### Automatic Monitoring Data

Redditch Borough Council does not undertake any automatic monitoring of air quality pollutants currently.

#### Diffusion Tube Monitoring Data


The annual mean concentrations of NO<sub>2</sub> at 9 sites in Redditch Borough for 2014 are shown in Table 2.5 below. The full dataset of monthly results for 2014 and annual mean adjusted for bias are shown in Appendix B.

Annual mean concentrations of nitrogen dioxide ranged from 19.93 µg/m<sup>3</sup> at (12N) 287 Birmingham Road to 43.27 µg/m<sup>3</sup> at OR3 (17N) Other Road.

OR3 (17N) Other Road is a kerbside location and has been calculated back to façade of nearest relevant receptor using Defra's spreadsheet tool as follows:

**Table 2.3 Location OR3 (17N) NO<sub>2</sub> Distance from road calculation**

This calculator allows you to predict the annual mean NO<sub>2</sub> 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.



**Enter data into the yellow cells**

<b>Step 1</b>	How far from the KERB was your measurement made (in metres)?	(Note 1)	<b>0.5</b>	metres
<b>Step 2</b>	How far from the KERB is your receptor (in metres)?	(Note 1)	<b>4</b>	metres
<b>Step 3</b>	What is the local annual mean background NO <sub>2</sub> concentration (in µg/m <sup>3</sup> )?	(Note 2)	<b>17.87</b>	µg/m <sup>3</sup>
<b>Step 4</b>	What is your measured annual mean NO <sub>2</sub> concentration (in µg/m <sup>3</sup> )?	(Note 2)	<b>43.27</b>	µg/m <sup>3</sup>
<b>Result</b>	The predicted annual mean NO <sub>2</sub> concentration (in µg/m <sup>3</sup> ) at your receptor	(Note 3)	<b>33.9</b>	µg/m <sup>3</sup>

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](http://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](mailto:benmarner@aqconsultants.co.uk)

From January 2015 this monitoring tube location was removed to a position that represents relevant exposure within Other Road.

Only 8 months of data was recorded for 31N Outside 34 Oakley Road and this data has been annualised in accordance with Box 3.2 of TG(09) as shown in Table 2.4 below.

**Table 2.4 Annualisation calculations for 31N o/s 34 Oakley Road**

Site	Site Type	Annual Mean	Period Mean	Ratio
Birmingham Acocks Green	Background Urban	43.09658157	38.61677733	1.116006683
Birmingham Tyburn	Background Urban	29.84605318	26.40124221	1.130479124
Walsall Woodlands	Background Urban	25.2599895	21.2820568	1.18691486
			Average	<b>1.144467</b>
			31N result	30.62
			31N annualised	<b>35.04</b>

Following annualisation and calculation back to relevant exposure where applicable; the annual average results of all tubes in 2014 have been adjusted for bias using a

national correction factor derived from Defra of 0.89. The resulting adjusted data shown in Table 2.5 below indicates there have been no exceedances of nitrogen dioxide in Redditch Borough in 2014.

**Table 2.5 Results of Nitrogen Dioxide Diffusion Tubes in 2014**

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2014 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.89)
								2014 ( $\mu\text{g}/\text{m}^3$ )
12N	287 Birmingham Road	Roadside	N	N	12	N	N	19.93
OR1	Other Road Street Lamp 2237	Roadside	N	N	10	N	N	35.17
OR2 (26N)	14 Other Road	Roadside	N	N	12	N	N	37.56
OR3 (17N)	Other Road (roadsign)	Kerbside	N	N	12	N	Y	33.9
28N (OR4)	Other Road Misty Florist	Roadside	N	N	12	N	N	35.69
29N OR5	Other Road Misty Florist	Roadside	N	N	11	N	N	32.81
25N	41 The Slough	Roadside	N	N	10	N	N	25.05
30N	34 Oakly Road	Other	N	N	9	N	N	21.96
31N	o/s 34 Oakly Road	Roadside	N	N	8	Y	N	35.04

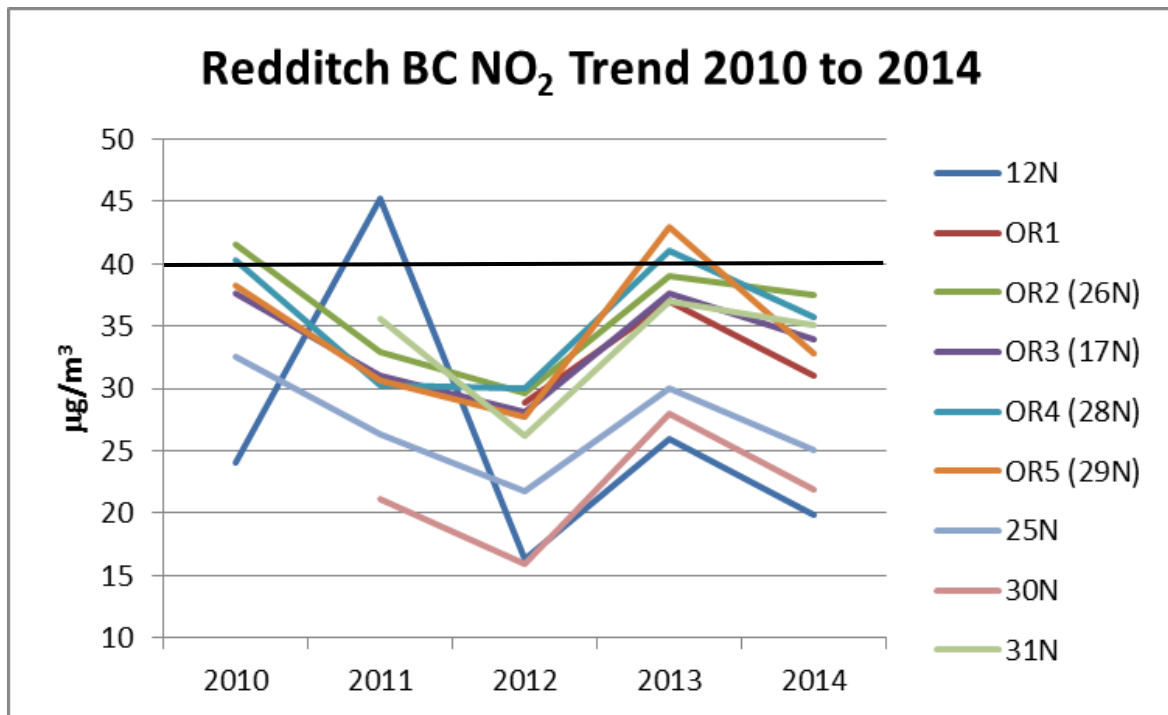
**Table 2.6 Results of Nitrogen Dioxide Diffusion Tubes (2010 to 2014)**

Site ID	Location	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
				2010 (Bias Adjustment Factor = 0.95)	2011 (Bias Adjustment Factor = 0.86)	2012 (Bias Adjustment Factor = 0.69)	2013 (Bias Adjustment Factor = 0.98)	2014 (Bias Adjustment Factor = 0.89)
12N	287 Birmingham Road	Roadside	N	24.1	<b>45.3</b>	16.3	26	19.93
OR1	Other Road Street Lamp 2237	Roadside	N	-	-	28.9*	37.0*	31.0*
OR2 (26N)	14 Other Road	Roadside	N	<b>41.6</b>	33	29.7	39	37.56
OR3 (17N)	Other Road (roadsign)	Kerbside	N	37.6*	31.0*	28.1*	37.7*	33.9*
OR4 (28N)	Other Road Misty Florist	Roadside	N	<b>40.3</b>	30.33	30.06	<b>41</b>	35.69
OR5 (29N)	Other Road Misty Florist	Roadside	N	38.3	30.62	27.79	<b>43</b>	32.81
25N	41 The Slough	Roadside	N	32.6	26.3	21.8	30	25.05
30N	34 Oakly Road	Other	N	-	21.1	16	28	21.96
31N	o/s 34 Oakly Road	Roadside	N	-	35.6	26.2	37	<b>35.04a</b>

\* Note these are bias adjusted concentration figures after adjustment back to relevant receptor

**a** Annualised in accordance with Box3.2 of TG(09)

**Figure 5 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites**



**Trends**

Generally nitrogen dioxide concentrations have reduced at all the monitoring locations between 2013 and 2014. Most of the monitoring locations have recorded concentrations well below the air quality objectives in the last 5 years. There have been occasional peaks above the objective in monitoring locations in Other Road, Redditch; however a detailed assessment of the vicinity in 2010 concluded an Air Quality Management Area was unnecessary. There has been one other exceedance outside Other Road recorded at 12N in 2011. This is considered to be an anomaly as all other results recorded by the local authority from 2005 record 26.7 µg/m<sup>3</sup> as a maximum, with an average of 23.15 µg/m<sup>3</sup> over a 10 year period with the anomalous concentration removed from the dataset.

**2.2.2 PM<sub>10</sub>**

Redditch Borough Council does not currently undertake any monitoring of PM<sub>10</sub>.

**2.2.3 Sulphur Dioxide**

Redditch Borough Council does not currently undertake any monitoring of sulphur dioxide.

**2.2.4 Benzene**

Redditch Borough Council does not currently undertake any monitoring of benzene.

**2.2.5 Other pollutants monitored**

Redditch Borough Council does not currently undertake any monitoring of any other pollutants.

**2.2.6 Summary of Compliance with AQS Objectives**

Redditch Borough Council has examined the results from monitoring in the borough. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

### **3 Road Traffic Sources**

#### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

Redditch Borough Council have reviewed available Department for Transport Traffic Count Point data for Worcestershire and confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

#### **3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

Redditch Borough Council have reviewed available Department for Transport Traffic Count Point data for Worcestershire and confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

#### **3.3 Roads with a High Flow of Buses and/or HGVs.**

Redditch Borough Council has monitored two localities (30N, 31N) since 2011 due to the proximity of the Redditch bus station.

Redditch Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.



### **3.4 Junctions**

Redditch Borough Council have reviewed available Department for Transport Traffic Count Point data for Worcestershire and confirms that there are no new/newly identified busy junctions/busy roads.

### **3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Redditch Borough Council confirms that there are no new/proposed roads meeting the criteria in Section A.5 of Box 5.3 in TG(09)

### **3.6 Roads with Significantly Changed Traffic Flows**

Redditch Borough Council has reviewed available Department for Transport Traffic Count Point data for Worcestershire and confirms that there are no new/newly identified roads with significantly changed traffic flows.

### **3.7 Bus and Coach Stations**

Redditch Borough Council confirms that there are no relevant bus stations, meeting the criteria in A.6 of Box 5.3, in the Local Authority area.

## **4 Other Transport Sources**

### **4.1 Airports**

Redditch Borough Council confirms that there are no airports in the Local Authority area.

### **4.2 Railways (Diesel and Steam Trains)**

#### **4.2.1 Stationary Trains**

Redditch Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

#### **4.2.2 Moving Trains**

Redditch Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

### **4.3 Ports (Shipping)**

Redditch Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

## 5 Industrial Sources

### 5.1 Industrial Installations

#### 5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Redditch Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

#### 5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Redditch Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

#### 5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Redditch Borough Council has identified a new type of development, recently granted permission for a standby generator compound comprising 10 diesel powered generators to provide emergency supply to the national grid in times of energy shortage. The development will be located at Howard Road, Redditch (coordinates 406155, 265767), situated on an industrial estate approximately 500m away from the nearest residential properties (in likely plume direction) to the northeast. Information on the likely number of hours of operation is limited but anticipated to be no more than a day per year. There is no official guidance on the impact of these new types of development on air quality, however the EPUK & IAQM 'Land-Use Planning & Development Control: Planning For Air Quality v1.1' (May 2015) suggests an air quality assessment should be considered where operations exceed >18 hours per

year. Based on the information available at this time it is considered that air quality impacts will not be significant and a detailed assessment is not required. However, given the potential for national energy shortages and greater reliance on such facilities to support the national grid system in the future Redditch Borough Council will keep a 'watching brief' on the operational hours of the facility when the development has been completed.

Redditch Borough Council has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment at this time.

## **5.2 Major Fuel (Petrol) Storage Depots**

There are no major fuel (petrol) storage depots within the Local Authority area.

## **5.3 Petrol Stations**

Redditch Borough Council confirms that there are no petrol stations meeting the specified criteria in C.3 of Box 5.5 TG.(09).

## **5.4 Poultry Farms**

Redditch Borough Council confirms that there are no poultry farms meeting the specified criteria.

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

Redditch Borough Council confirms that there are no biomass combustion plant in the Local Authority area meeting the specified criteria.

### **6.2 Biomass Combustion – Combined Impacts**

Redditch Borough Council confirms that there are no biomass combustion plant in the Local Authority area meeting the specified criteria.

### **6.3 Domestic Solid-Fuel Burning**

Redditch Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area meeting the specified criteria.

## 7 Fugitive or Uncontrolled Sources

Redditch Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area meeting the specified criteria.

## **8 Conclusions and Proposed Actions**

### **8.1 Conclusions from New Monitoring Data**

Following annualisation and calculation back to relevant exposure where applicable, the 2014 monitoring results (adjusted for bias) indicates there have been no exceedances of the annual mean air quality objective of  $40\mu\text{g}/\text{m}^3$  for nitrogen dioxide ( $\text{NO}_2$ ) in Redditch Borough and there is no requirement to move to detailed assessment. This includes Other Road, Redditch which indicated exceedances of the objective for nitrogen dioxide in the previous year.

Nitrogen dioxide concentrations have reduced at all monitoring locations between 2013 and 2014. With the exception of occasional peaks above the annual mean air quality objective in Other Road, monitoring locations in Redditch have recorded concentrations well below the objective in the last 5 years.

### **8.2 Conclusions from Assessment of Sources**

Redditch Borough Council's assessment of sources has not identified any likely exceedances from new or significantly changed local developments. The Council has identified a new Standby Diesel Generator compound which has the potential to impact on air quality if operations exceed a minimal number of hours per year. Redditch Borough Council will monitor operational activities at the development and consider whether any air quality assessment is required in future rounds of review and assessment.

### **8.3 Proposed Actions**

No requirement to proceed to Detailed Assessment for any pollutants has been identified. WRS, on behalf of Redditch Borough Council, have undertaken a rationalisation of tube locations at beginning of 2015 and replaced OR3 (17N) kerbside location with an additional tube at the relevant receptor position 'Misty

## **Redditch Borough Council**

Flowers' in Other Road to create a triplicate monitoring site. WRS continue to closely monitor Other Road, Redditch in 2015. An annual report on progress, as required, will be submitted to Defra in 2016.



## 9 References

1. Air Quality Consultants (2010) 'Detailed Assessment of Air Quality at Other Road, Redditch – Redditch Borough Council'
2. DEFRA (2009) 'Local Air Quality Management Technical Guidance LAQM TG.(09)'
3. DEFRA (2015) 'National Diffusion Tube Bias Adjustment Factor Spreadsheet v.03/15'
4. Department for Transport 'Traffic Count Points for Worcestershire' accessed 23<sup>rd</sup> November 2015
5. EPUK & IAQM (2015) 'Land-Use Planning & Development Control: Planning For Air Quality v1.1'
6. Office for National Statistics (ONS) (July 2012) 'Mid-year estimates of population 2011'
7. Redditch Borough Council (2010) '2010 Air Quality Progress Report for Redditch Borough Council'
8. Redditch Borough Council (2013) 'Borough of Redditch Local Plan No. 4 documents 11.Transport and 15.Strategic Sites' accessed 23<sup>rd</sup> November 2015
9. Worcestershire Regulatory Services (2011) '2011 Air Quality Progress Report for Redditch Borough Council'
10. Worcestershire Regulatory Services (2012) '2012 Air Quality Updating and  
11. Screening Assessment for Redditch Borough Council'
12. Worcestershire Regulatory Services (2013) '2013 Air Quality Progress Report for Redditch Borough Council'
13. Worcestershire Regulatory Services (2014) '2014 Air Quality Progress Report for Redditch Borough Council'

# Appendices

Appendix A: QA/QC Data

Appendix B: 2014 Full Diffusion Tube Results

## **Appendix A: QA/QC Data**

### **Factor from Local Co-location Studies (if available)**

No local co-location studies for nitrogen dioxide have been undertaken in 2014.

### **Diffusion Tube Bias Adjustment Factors**

The following UKAS accredited company provides Redditch Borough Council with nitrogen dioxide diffusion tubes and analysis:

Somerset Scientific Services,  
The Crescent  
County Hall  
Taunton  
TA1 4DY  
0300 123 2224  
somersetscientific@somerset.gov.uk

The 20% Triethanolamine (TEA) / De-ionised Water preparation method is used.

The bias adjustment factor applied to the results in 2014 was 0.89 (Spreadsheet Version No. 03/15) which were derived from the national studies.

### **Short-term to Long-term Data Adjustment**

Annualisation calculation for 31N are shown in Section 2.2.1.

### **QA/QC of Automatic Monitoring**

No Automatic Monitoring Data is available for 2014.

**QA/QC of Diffusion Tube Monitoring**

Under the WASP Scheme Somerset Scientific Services performed 100% satisfactory for all periods in 2014. Tube precision was generally 'Good' throughout 2014.

## Appendix B: 2014 Full Diffusion Tube Results

**Table B1 Monthly diffusion tube results for nitrogen dioxide in 2014**

Tube Ref	Location	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Average	Bias adj	Adj Average	No of Months
12N	287 Birmingham Road	25.03	24.19	28.58	15.53	18.95	23.40	18.34	15.69	25.48	17.71	31.37	24.42	22.4	0.89	19.93	12
OR1	Other Road, Street Light 2237	45.70	43.52	43.50	37.85	39.77	29.69	32.24	35.11			46.33	41.51	39.5	0.89	35.17	10
OR2 (26N)	14 Other Road (RWDP)	41.67	40.89	46.69	45.69	44.21	48.11	33.60	31.48	48.93	39.01	45.58	40.56	42.2	0.89	37.56	12
OR3 (17N)	Other Road - Traffic Signal lampost number 974	42.34	44.04	56.89	46.74	50.14	62.29	29.63	41.08	57.58	42.58	61.56	48.51	48.6	0.89	43.27	12
OR4 (28N)	Misty Flowers (Other Road Side)	34.54	35.98	45.80	39.77	40.94	50.44	40.55	29.34	46.45	34.21	47.72	35.39	40.1	0.89	35.69	12
OR5 (29N)	Misty Flowers (Other Road Side)	26.68	29.21		38.86	38.29	46.06	30.52	28.17	50.40	36.49	44.65	36.25	36.9	0.89	32.81	11
30N	34 Oakly Road				20.59	21.67	25.52	22.56	18.97	28.65	22.34	32.53	29.21	24.7	0.89	21.96	9
31N	Lampost outside 34 Oakly Road	35.33	36.10	44.50	33.35	30.93	32.46	31.05	31.47					34.4	0.89	30.62	8
25N	41 The Slough - drainpipe side of house	27.14	26.76	36.49	14.54		23.11	25.09	25.93	30.42		32.58	39.36	28.1	0.89	25.05	10