

South Derbyshire District Council

2016 Air Quality Annual Status Report (ASR)

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

April 2016

South Derbyshire District Council

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Executive Summary: Air Quality in Our Area

This report summarises recent air quality data in South Derbyshire.

We monitor air quality at 17 locations representative of the highest likely exposure to the main sources of air pollution.

All monitoring locations demonstrated that nitrogen dioxide (NO₂) levels in 2015 were below the annual average Air Quality Objective of 40 µg/m³. There is no evidence to suggest that any other air pollutants are exceeding or close to exceeding the Air Quality Objectives and therefore we do not currently propose to extend the monitoring network to include other pollutant species.

We are satisfied that air quality across South Derbyshire meets all health based statutory Objectives.

Local authorities have been given new duties to take measures to reduce fine particulates. This report contains some initial analysis of the predicted local sources of fine particulate and proposed measures to reduce particle emissions. We anticipate that work to control fine particulate will form an increasing part of our work in future years.

Air Quality in South Derbyshire

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

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

The main pollutant of concern in South Derbyshire is nitrogen dioxide (NO₂). This is a product of combustion, it's most dominant source being from road traffic.

Measured levels of nitrogen dioxide can vary quite significantly at each monitoring location from month to month and from year to year mainly due to fluctuations in weather, sunlight, traffic flows and compositions. Overall, the trends in measured levels of NO₂ in South Derbyshire are showing a reduction over the last five years;

- The High Street (A511) in Woodville continues to provide the most concern about a potential exceedence of the annual average Objective for NO₂. We have four monitoring locations near to the clock island junction (High Street / Moira Road). Over the last five years air quality has marginally improved at two of these and marginally deteriorated at two. Overall air quality on High Street, Woodville has marginally improved over the last five years
- We have three monitoring locations in Repton. All three show an improving trend in air quality since we started monitoring in 2012.
- The average of the two monitoring locations in Overseal show a slight improvement over the last 5 years.
- The two monitoring locations in Church Gresley both show small improvements in air quality over the last 5 years.

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

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

- Of the remaining monitoring locations, air quality has shown an improving trend in Hatton, Burnaston and Willington. Along the A444 there has been a slight deterioration in air quality over the last five years, although levels are still well below the air quality objectives.

Table 1 summarises the trends in air quality across all of our monitoring locations.

Table 1 – Long Term Air Quality Monitoring Trends by Location

Location	5 Year Air Quality Trend	Compliant with AQ Objectives?
High Street, Woodville	Improving	Yes
Church Gresley	Improving	Yes
Station Road, Hatton	Improving	Yes
Overseal	Improving	Yes
A444	Deteriorating	Yes
Repton	Improving	Yes
A38	Improving	Yes
Willington	Improving	Yes

Actions to Improve Air Quality

Because air quality in South Derbyshire has never exceeded the Air Quality Objectives, the Council has not developed a specific programme or targets of air quality improvements. Currently the main interventions to improve air quality are based around;

- Making a positive contribution through the planning and development control process by requiring air quality mitigation appropriate to the impact of the development;
- Making a positive contribution through the Councils regulation of industrial emissions;

- Reducing our own emissions through a programme of continued environmental improvements to an accredited environmental management standard (ISO14001);
- Investigation and intervention of air pollution incidents;
- Utilising social media to promote predicted high air quality pollution episodes and enable sensitive individuals to manage the impact on them.

Local Priorities and Challenges

The two main challenges over the next few years are to;

1. Start taking action to reduce emissions and exposure to PM_{2.5} in accordance with the national priorities.

Statutory guidance issued by DEFRA in April 2016 gives local authorities a “*new role to work towards reducing emissions and concentrations of PM_{2.5}, which is a very important area of focus due to the well-documented health impacts.*” (LAQM TG(16) para 1.22). Quite what this role will involve is as yet unclear and therefore we propose to develop this over the next reporting period of the next Annual Status Report. Therefore, over the next nine months we propose to utilise the guidance in the recently published LAQM TG(16) and the toolkit for public health professionals, published by DEFRA to evaluate and understand the local magnitude of PM_{2.5}; identify key sources and identify in collaboration with partners identify the opportunities for exposure reduction.

2. Ensure that the anticipated high level of development across the District does not result in any exceedence of the air quality objectives, and;

The importance of giving appropriate consideration to air quality during the planning process has been recognised by the Derbyshire Health and Wellbeing Board who resolved on 11th March 2016 to “*Recommend to local planning authorities in Derbyshire that they adopt a joint Supplementary Planning Document on air quality*”. We propose to issue local guidance on planning and air quality to help give due weight to air quality issues within planning application determinations.

How to Get Involved

The main contributions that our community can make to improving air quality are around minimising emissions from traffic and other sources and limiting exposure at times of poor air quality. Specifically that means avoiding unnecessary car use for short journeys, utilising public transport where possible, buying and maintaining low emissions vehicles and being linked in to the national alert system for predicted episodes of poor air quality. Full details are contained in the reference section.

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1 Local Air Quality Management

This report provides an overview of air quality in South Derbyshire during the 2015 calendar year. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by South Derbyshire District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

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

South Derbyshire District Council currently does not have any AQMAs.

We have previously completed Detailed Assessments of air quality in both Repton and Overseal to investigate whether traffic emissions are causing breaches of EU Limit Values. The outcome of both assessments was that air quality in both of the villages was meeting, and was predicted to continue to meet, all of the relevant standards. Copies of these Detailed Assessments along with other recent air quality reports are on our [website](#).

2.2 Progress and Impact of Measures to address Air Quality in South Derbyshire

Despite the fact that there are no AQMAs in South Derbyshire, the Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Key completed measures are:

- A total of 340 planning applications have been assessed for their impact on air quality and, where appropriate, mitigation has been implemented through the imposition of planning conditions.
- The Council, in collaboration with colleagues working in Public Health took a report to the Derbyshire Health and Wellbeing Board to get approval for various strategic measures to increase the profile of air quality including the production of supplementary planning guidance; the development of a multi-discipline air quality working group and annual reports on air quality progress to the Health Protection Board.
- The Council subscribes to the governments [Air Quality Bulletin](#) website in order to receive notification of predicted episodes of poor air quality. We utilise

our Facebook account <https://www.facebook.com/southderbys> to advise our local residents of any predicted high air pollution episodes.

- We use our regulatory powers to limit the amount of pollution being generated from industrial sites which we issue with environmental permits. Permit variations issued during 2014 and 2015 are anticipated to result in significant reductions in the total mass of particulate emitted from regulated sites.

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The Public Health Outcomes Framework (PHOF) is a Department of Health data tool for England, intended to focus public health action on increasing healthy life expectancy and reducing differences in life expectancy between communities. The tool uses indicators to assess improvements. Recognising the significant impact that poor air quality can have on health, the PHOF includes an indicator relating to fine particulate matter (PM_{2.5}).

The indicator in the PHOF reports the estimates fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter). Based on the latest available figures the position in South Derbyshire can be compared to the situation across the rest of England. This comparison is summarised in Table 2.1

Table 2.1 Fraction of mortality attributable to particulate air pollution

England Average	England Lowest	England Highest	East Midlands Average	Derbyshire Average	South Derbyshire
5.3%	3.5%	7.9%	5.6%	5.4%	5.4%

The estimated sources of PM_{2.5} in South Derbyshire have been calculated from background air quality data published by DEFRA. The DEFRA data consists of

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estimated background concentrations of PM_{2.5} in each 1×1km grid square across all of South Derbyshire attributable to all of the main sources. The estimated average concentration across all 340km² and the maximum estimated concentration (expressed in milligrammes per cubic metre, µg/m³) from each of the main sources of are presented in Table 2.2.

Table 2.2 Summary of the Average and Maximum Concentrations of PM_{2.5} in South Derbyshire by 1×1km squares

Source	Average Concentration µgm ³	Proportion of the total PM2.5	Maximum Concentration µgm ³
Motorway	0.00	0.0%	0.06
Trunk A	0.04	0.3%	0.23
Primary A	0.01	0.1%	0.05
Minor	0.03	0.3%	0.10
Brake and Tyre	0.11	1.1%	0.38
Road Abrasion	0.05	0.5%	0.19
Industry	0.25	2.4%	1.05
Domestic	0.08	0.7%	0.89
Rail	0.01	0.1%	0.07
Other	0.21	2.1%	1.49
Secondary	4.92	47.7%	5.07
Residual and salt	4.53	43.9%	5.51
Point sources	0.07	0.7%	1.26
TOTAL	10.31		

South Derbyshire is not currently taking any specific measures to address PM_{2.5} beyond those already described in this report. The Council's newly published Corporate Plan 2016-21 contains under the 'Place' theme a commitment to "*Deliver services that keep the District clean and healthy*". Due consideration will be given to the need to specifically address PM_{2.5} as part of the Council's annual review of the Action Plan to support the Corporate Plan in early 2017.

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

South Derbyshire District Council does not undertake any continuous air quality monitoring.

3.1.2 Non-Automatic Monitoring Sites

South Derbyshire District Council undertook non- automatic (passive) monitoring of NO₂ at seventeen (17) sites during 2015. Table A.1 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for “annualisation” and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A. in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full dataset of monthly mean values is provided in Appendix B.

3.2.2 Particulate Matter (PM₁₀)

We do not carry out any routine monitoring of ambient particulate matter in South Derbyshire.

3.2.3 Particulate Matter (PM_{2.5})

We do not carry out any routine monitoring of PM_{2.5} in South Derbyshire.

3.2.4 Sulphur Dioxide (SO₂)

We do not carry out any routine monitoring of SO₂ in South Derbyshire

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
1	Findern Lane, Burnaston	Roadside	430056	331100	NO2	No	N	<1m	No	
2	27 High Street, Woodville	Roadside	431567	319138	NO2	No	Y 0.5m	4m	No	
3	Community Centre, Church Gresley	Urban background	429302	318628	NO2	No	Y 0m	20m	No	
4	Castle Hotel, Station Road, Hatton	Roadside	421480	329623	NO2	No	Y 10m	4m	No	
5	26 High Street, Woodville	Kerbside	431588	319085	NO2	No	Y 1.5m	1m	No	
6	8 High Street, Woodville	Roadside	431538	319150	NO2	No	Y <1m	4m	No	
7	Lullington Road, Overseal	Roadside	429454	315403	NO2	No	Y <1m	2m	No	
8	Lullington Road, Overseal	Roadside	429463	315389	NO2	No	Y <1m	30m	No	
9	97 Woodland Road, Stanton	Roadside	427002	319850	NO2	No	Y<1m	3m	No	

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA ?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?	Height (m)
10	160 Burton Road, Castle Gresley	Kerbside	427618	318884	NO2	No	Y 5 m	1 m	No	
11	Library, Hartshorne Road, Woodville	Roadside	431501	319259	NO2	No	N	15m	No	
12	32 High Street Repton	Roadside	430507	326783	NO2	No	Y <1m	3m	No	
13	37 & 35 High Street Repton	Roadside	430506	326812	NO2	No	Y <1m	1.5m	No	
14	The Priory, High St, Repton,	Kerbside	430441	326897	NO2	No	Y <1m	1m	No	
17	210 High Street, Woodville	Roadside	432094	318761	NO2	No	Y 2m	2m	No	
18	2a Repton Road, Willington	Roadside	429394	328445	NO2	No	Y 1m (on opposite side of road)	1m	No	
19	9 Church Street, Church Gresley	Roadside	429702	318343	NO2	No	Y <1m	2m	No	

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Annual Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³) ⁽³⁾				
					2011	2012	2013	2014	2015
SDDC1	Roadside	Diffusion Tube	100%	100%	28.2	27.3	30.6	25.7	24.5
SDDC2	Roadside	Diffusion Tube	92%	92%	29.6	35.6	34.6	37.3	29.1
SDDC3	Urban background	Diffusion Tube	100%	100%	18.3	15.1	20.0	17.1	13.4
SDDC4	Roadside	Diffusion Tube	100%	100%	25.5	27.5	26.5	24.9	23.7
SDDC5	Roadside	Diffusion Tube	100%	100%	32.1	38.3	32.4	27.3	28.5
SDDC6	Roadside	Diffusion Tube	100%	100%	35.8	43.5	38.4	34.9	39.3
SDDC7	Roadside	Diffusion Tube	100%	100%	24.7	27.4	29.4	26.1	27.8
SDDC8	Roadside	Diffusion Tube	76%	76%	32.2	30.2	30.3	28.3	30.0
SDDC9	Roadside	Diffusion Tube	92%	92%	24.5	30.3	31.2	30.3	31.3
SDDC10	Kerbside	Diffusion Tube	84%	84%	30.8	31.5	32.8	29.1	32.9
SDDC11	Roadside	Diffusion Tube	42%	42%	26.2	30.2	33.7	26.0	33.2
SDDC12	Roadside	Diffusion Tube	100%	100%	-	31.2	30.0	21.3	21.8
SDDC13	Roadside	Diffusion Tube	93%	93%	-	30.9	27.1	20.5	21.0
SDDC14	Roadside	Diffusion Tube	84%	84%	-	46.4	42.7	30.7	33.4
SDDC17	Roadside	Diffusion Tube	92%	92%	-	51.9	35.7	30.3	33.2
SDDC18	Roadside	Diffusion Tube	92%	92%	-	40.0	35.0	29.1	33.0
SDDC19	Roadside	Diffusion Tube	100%	100%	-	31.9	26.9	24.4	25.5

Notes: Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO₂ Monthly Diffusion Tube Results - 2015

Site ID	NO ₂ Mean Concentrations (µg/m³)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted ⁽¹⁾
SDDC1	34.3	36.1	28.1	23.6	20.5	19.2	23.9	27.9	29.7	38.4	35.7	46.1	30.3	24.5
SDDC2	67.4	36	43.5	43.7	32.2	26	Missing	30.9	6.3	53.2	27.7	28	35.9	29.1
SDDC3	22.4	19.7	19.4	17.5	12.4	10.3	11.6	11.7	16.6	23.8	17.5	16.3	16.6	13.4
SDDC4	44.4	32.9	17.6	24.9	23.8	22.1	27.9	23.1	33.2	41.5	28.1	32.2	29.3	23.7
SDDC5	51	39.8	40.5	38.8	31.4	31.1	31.8	32.2	34.5	22.7	34	34.7	35.2	28.5
SDDC6	67.8	59.7	43.4	55.9	47.5	41.1	37.1	43.5	42.7	44.8	51.6	47.6	48.6	39.3
SDDC7	45.2	35.1	37.7	37.7	27.1	29.5	26.4	29.2	39.5	45.8	28.5	30.1	34.3	27.8
SDDC8	Missing	40.3	35.6	Missing	Missing	28.9	34	36.9	36.4	52.8	30.2	38.6	37.1	30.0
SDDC9	Missing	40.5	41.6	41.8	29.5	30.4	35.8	40.2	41.3	50.4	34.9	38.9	38.7	31.3
SDDC10	53.1	41.4	Missing	39.2	37.8	37.9	37.1	Missing	45	51	35.1	28.1	40.6	32.9
SDDC11	Missing	36.4	Missing	Missing	Missing	39.1	40.2	Missing	Missing	47.2	42.3	Missing	41.0	33.2
SDDC12	38.4	26.9	30.3	25.4	20.5	18.9	18.8	21.7	27.3	34	31.9	29.1	26.9	21.8
SDDC13	35	22.6	29.8	24.7	21.9	19.7	21.1	20.5	30.7	33.5	Missing	25.1	25.9	21.0
SDDC14	61.3	44.3	46.4	Missing	27.4	30.8	37.6	33.9	48.9	45.4	Missing	35.9	41.2	33.4
SDDC17	53.7	35.5	Missing	46.5	32.7	28	32.9	36.6	46.2	55.3	43.6	40.1	41.0	33.2
SDDC18	50.3	30.9	Missing	45.5	40.4	37.6	39.9	40.5	47.8	46	35.1	34.2	40.7	33.0
SDDC19	44.2	33.9	47.7	32.2	26.5	20.5	26.3	24.7	29.5	37.6	31.2	23.6	31.5	25.5

(1) See Appendix C for details on bias adjustment

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

Diffusion Tube Bias Adjustment Factors

The bias adjustment factor for 2014 is based on the equivalent national studies reported on the DEFRA website for ESG Didcot 50% TEA diffusion tube surveys across the UK for 2014. These are summarised below;

Analysed By ¹	Method ² <small>To undo your selection, choose (All) from the pop-up list</small>	Year ³ <small>To undo your selection, choose (All)</small>	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 ⁴	Bias Adjustment Factor (A) (Cm/Dm)
ESG Didcot	50% TEA in acetone	2015	R	Dumfries and Galloway Council	12	35	30	14.6%	G	0.87
ESG Didcot	50% TEA in acetone	2015	B	Gravesham Borough Council	12	40	30	34.1%	G	0.75
ESG Didcot	50% TEA in acetone	2015	B	Gravesham Borough Council	12	30	23	29.8%	P	0.77
ESG Didcot	50% TEA in acetone	2015	UI	North Lincolnshire	11	24	18	36.5%	P	0.73
ESG Didcot	50% TEA in acetone	2015	R	Swale BC	11	38	32	19.3%	P	0.84
ESG Didcot	50% TEA in acetone	2015	R	Swale BC	10	48	39	21.0%	G	0.83
ESG Didcot	50% TEA in acetone	2015	R	Swale Borough Council	11	40	34	19.7%	P	0.84
ESG Didcot	50% TEA in acetone	2015	R	Wrexham County Borough Council	12	19	19	0.6%	G	0.99
ESG Didcot	50% TEA in acetone	2015	UC	Cardiff Council	10	26	26	1.6%	G	0.98
ESG Didcot	50% TEA in acetone	2015	KS	Manylebone Road Intercomparison	12	104	81	27.9%	G	0.78
ESG Didcot	50% TEA in acetone	2015	R	Vale of White Horse District Council	11	34	29	15.7%	G	0.86
ESG Didcot	50% TEA in acetone	2015	UI	Stockton on Tees	12	24	18	29.4%	G	0.77
ESG Didcot	50% TEA in acetone	2015	R	Stockton on Tees	12	17	14	21.5%	G	0.82
ESG Didcot	50% TEA in acetone	2015	KS	Suffolk Coastal DC	12	44	35	26.0%	P	0.79
ESG Didcot	50% TEA in acetone	2015	SU	Thanet District Council	9	17	15	10.6%	G	0.90
ESG Didcot	50% TEA in acetone	2015	R	Thanet District Council	12	27	23	17.8%	G	0.85
ESG Didcot	50% TEA in acetone	2015	B	Medway Council	12	21	12	77.3%	G	0.56
ESG Didcot	50% TEA in acetone	2015	R	Medway Council	11	32	23	42.6%	G	0.70
ESG Didcot	50% TEA in acetone	2015	R	North East Lincolnshire Council	10	34	28	21.2%	P	0.83
ESG Didcot	50% TEA in acetone	2015	R	North East Lincolnshire Council	11	39	28	38.6%	G	0.72
ESG Didcot	50% TEA in acetone	2015	R	North East Lincolnshire Council	11	55	47	16.2%	G	0.86
ESG Didcot	50% TEA in acetone	2015		Overall Factor ⁵ (21 studies)					Use	0.81

Summary of Lab Performance in AIR Proficiency Testing (AIR PT)

The following table summarises the results from the lab we use for our air quality monitoring analysis based on their participation in recent AIR NO₂ PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of $\leq \pm 2$ as defined above.

Air PT Round	AR001	AR003	AR004	AR006	AR007	AR009	AR010	AR012
	100%	100%	100%	100%	100%	87.5%	100%	100%

Appendix D: Map(s) of Monitoring Locations

Figure 2.2a Map of Non-Automatic Monitoring Sites in Castle Gresley



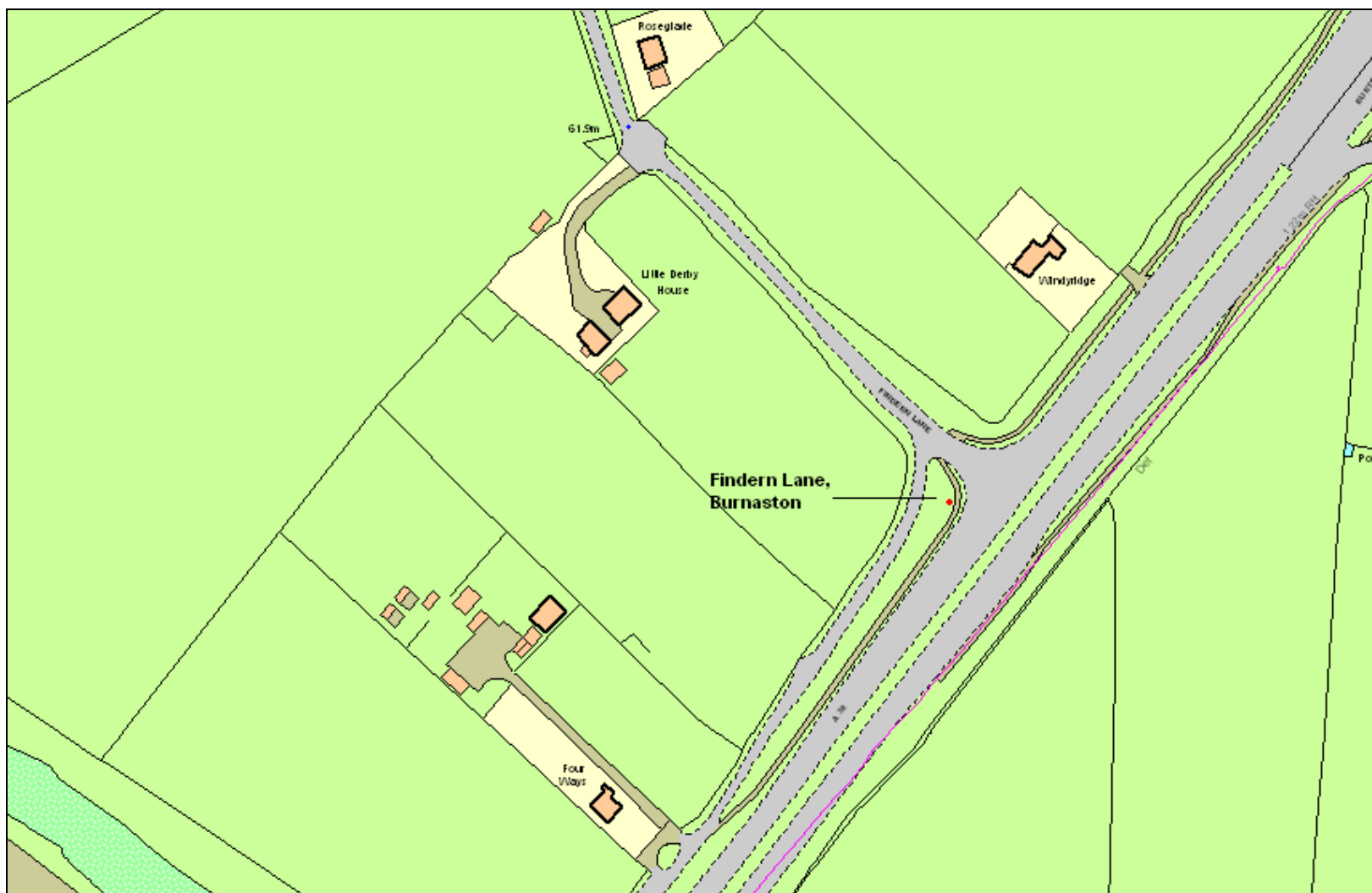
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Figure 2.2b Map of Non-Automatic Monitoring Sites on High Street, Woodville



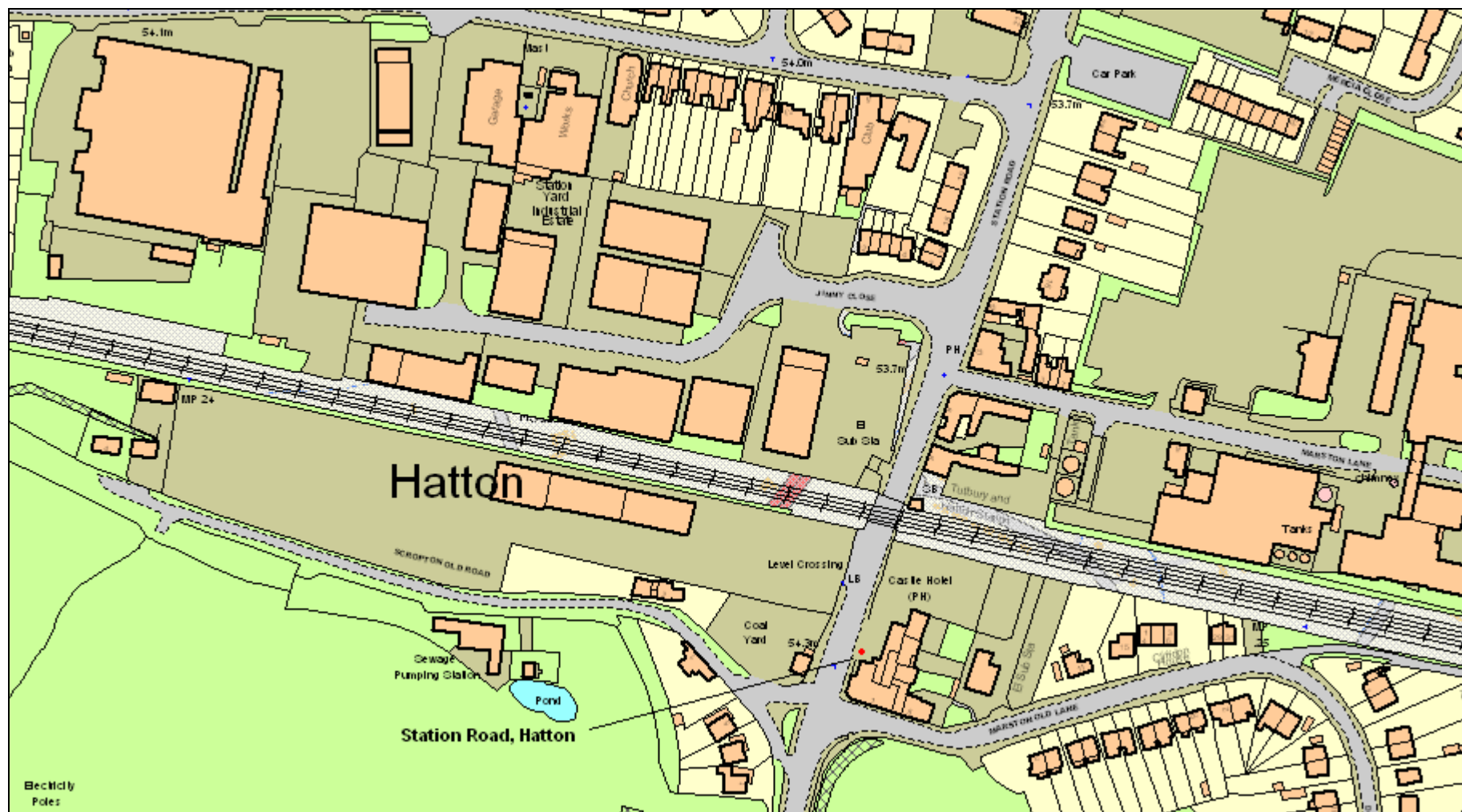
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Figure 2.2c Map of Non-Automatic Monitoring Site in Burnaston (A38)



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Figure 2.2d Map of Non-Automatic Monitoring Site in Hatton



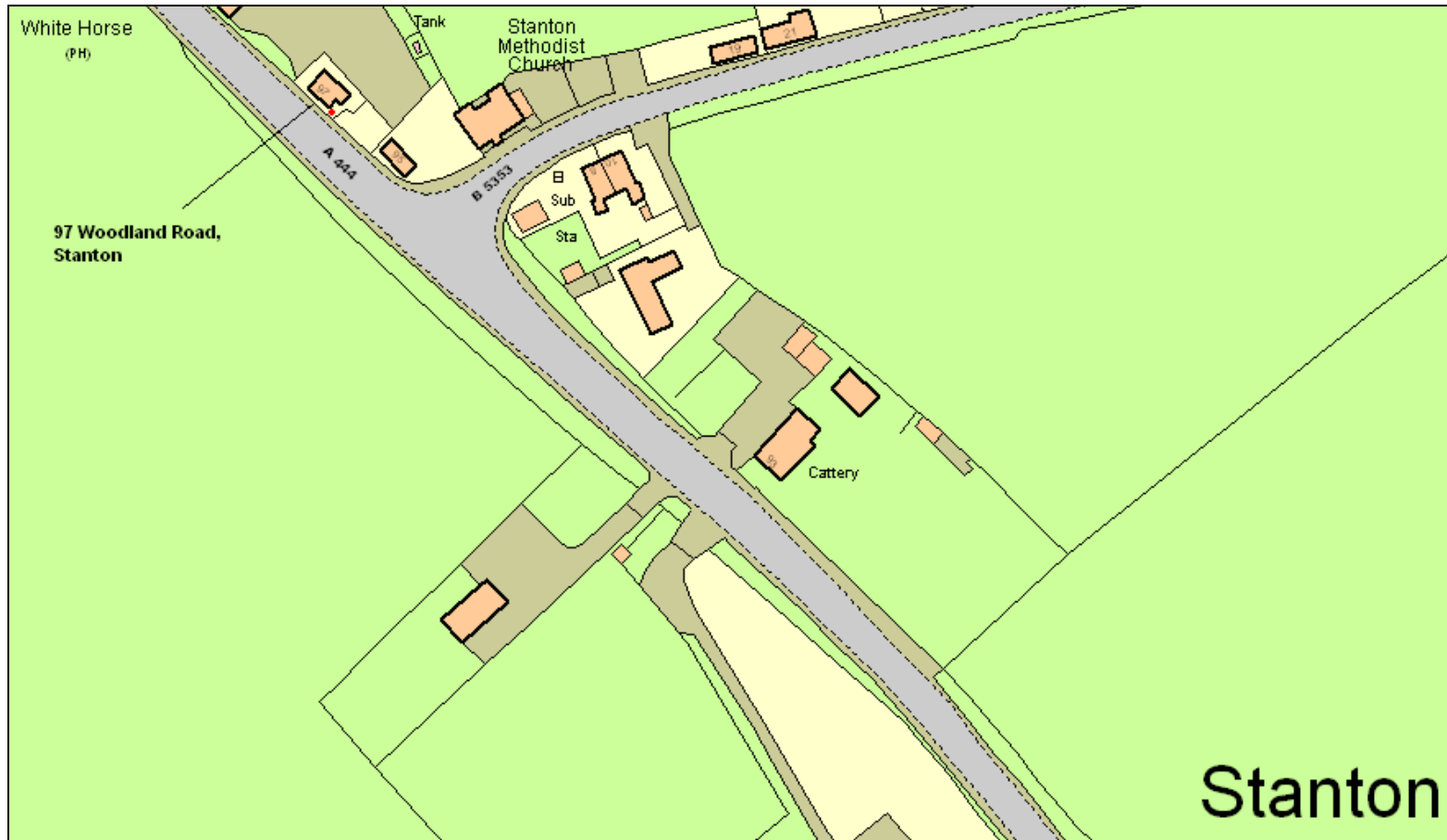
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Figure 2.2e Map of Non-Automatic Monitoring Sites in Overseal



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Figure 2.2f Map of Non-Automatic Monitoring Site in Stanton (A444)



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Figure 2.2g Map of Non-Automatic Monitoring Sites in Repton (Sites 20 & 21 were discontinued from December 2014)



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Figure 2.2h Map of Non-Automatic Monitoring Sites in Church Gresley (from October 2012)



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Figure 2.2i Map of Non-Automatic Monitoring Site in Willington



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Figure 2.2j Map of Additional Non-Automatic Monitoring Site in Woodville



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Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References