

UPDATE ON AIR QUALITY WITHIN THE VALE

1. Purpose

- 1.1. To inform the committee on the status of air quality within the District.

2. Recommendations

- 2.1 Member are asked to note the contents of the report and consider the proposed Air Quality Action Plan to be produced as part of the Air Quality Strategy.

3. Executive summary

- 3.1 This report provides an update on air quality within Aylesbury Vale. It provides a brief background on the responsibility of local authorities in relation to air quality and outlines what pollutants are of concern, how these are monitored and the results of this monitoring. It also details what actions will be taken to improve air quality within Air Quality Management Areas (AQMAs) and generally across the Vale.

4. Supporting information

- 4.1 Records of nitrogen dioxide (NO₂) pollution published in the annual Air Quality Reports for Aylesbury from 2009 to 2015, are available on our website <https://www.aylesburyvalcdc.gov.uk/section/air-quality>.

5. Resource implications

- 5.1 Current service being delivered within existing budgets. Funding will be sought from Defra's Air Quality Grant programme for proposals to be included in the Air Quality Strategy and other service enhancements.

6. Introduction

- 6.1 The Clean Air Act 1956 was introduced as a direct response to the effects of the industrial and domestic combustion of solid fuels, and in particular to London's 'Great Smog' during December 1952. The key consequence of the Act was to reduce levels of air pollution, and in particular to reduce levels of sulphur dioxide and smoke by introducing smokeless zones and encouraging a model shift in the energy sources used for domestic heating.
- 6.2 Its effects were notably successful and led to improved air quality for a considerable period until the increased level of vehicle usage and the trend towards diesel engines introduced new air pollution challenges.
- 6.3 More recently the principal pollutant of concern has been nitrogen dioxide. In non-industrial areas such as Aylesbury Vale, vehicles (particularly diesel vehicles) are the main source of this pollutant. The government recognises that air pollution is now the second largest public health threat, after smoking, and a Commons Select Committee has recently estimated that nitrogen dioxide and particulates contribute to between 40,000 early deaths in the UK each year. The Environment Act 1995 and subsequent regulations provide the legislative framework to address this situation.

7. Requirement to Monitor Air Quality

- 7.1 Under the Environment Act 1995, local authorities have statutory duties relating to air quality. Working to the Local Air Quality Management (LAQM) regime, every local authority must review air quality within its area. If a local authority identifies non-compliance with national air quality objectives and there is relevant public exposure then action must be taken.
- 7.2 The national air quality objectives (NQOs) set limits for the permitted concentrations of pollutants depending on the duration of exposure, see Table 1.

Table 1 – National Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration ($\mu\text{g} = \text{microgram}$)	Measured as
Nitrogen Dioxide (NO_2)	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean
	40 $\mu\text{g}/\text{m}^3$	Annual mean
Particulate Matter (PM_{10})	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean
	40 $\mu\text{g}/\text{m}^3$	Annual mean
Sulphur Dioxide (SO_2)	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean

7.3 Aylesbury Vale District Council currently undertake monitoring for NO_2 and the exposure for this pollutant must not exceed $40\mu\text{g}/\text{m}^3$ averaged over one year, or $200\mu\text{g}/\text{m}^3$ averaged over one hour on more than 18 occasions in a year.

7.4 It is important to recognise the objectives apply only at locations where members of the public are likely to be present for the time period of the objective.

7.5 If air quality objectives are not achieved, or are not likely to be achieved, a local authority must designate the area of non-compliance as an Air Quality Management Area (AQMA). Once an area has been designated as an AQMA, the local authority must develop an action plan that details the remedial activities to address the problem.

7.6 Under the LAQM regime local authorities are also required to complete an Annual Status Report (ASR) outlining the strategies the local authority will employ to improve air quality and to report on any progress that has been made.

8. AQMA's within Aylesbury Vale

8.1 Aylesbury Vale currently has three Air Quality Management Areas (AQMA's). Maps showing the locations of the AQMA's are provided within Appendix 1.

Tring Road AQMA

This AQMA encompasses a section of the A41 Tring Road and properties bordering it between the Oakfield Road/King Edward Avenue Junction and Queen Street in Aylesbury. Declared July 2005.

Stoke Road AQMA

This AQMA encompasses the junction of the A413 Wendover Road, Walton St, and B4443 Stoke Road (the gyratory) in Aylesbury. Declared June 2008.

Friarage Road AQMA

This AQMA encompasses a number of properties along the A418 (Friarage Road and Oxford Road) in Aylesbury. Declared June 2008.

- 8.2 Monitoring data from 2014 until 2016 indicates that the air quality within the Tring Road AQMA has improved significantly. This can be attributed to improvements to the road network at the Oakfield Road/Tring Road and King Edward Avenue/Tring Road junctions improving the flow of traffic and a general increase in cleaner vehicles.
- 8.3 As a result of the improved air quality data and after recommendations received from the Department of Environment Food and Rural Affairs (Defra) the Environment Team propose to revoke the Tring Road AQMA.
- 8.4 In addition the air quality within the Friarage Road AQMA has also improved significantly due to a general increase in cleaner vehicles. The Environment Team have therefore made recommendations to Defra in the most recent Annual Status Report 2017 that if the air quality in the Friarage Road AQMA continues to improve there may be a case to revoke this AQMA.

9. Monitoring Air Quality - Passive Diffusion Tubes

- 9.1 Aylesbury Vale District Council currently monitor NO₂ levels within the district through the deployment of passive diffusion tubes.
- 9.2 Diffusion tubes are replaced at monthly intervals, mainly at residential sites, and are a useful tool for assessing whether a site has exceeded the annual objective of 40µg/m³. These are not capable of recording the hourly data required to verify if the 200µg/m³ objective has been exceeded.
- 9.3 We currently undertake monitoring at 27 sites across the district, predominately located within Aylesbury, Bierton, Buckingham, Winslow, Wendover and Wing, and are all locations potentially or reportedly affected by significant traffic congestion. The locations of the diffusion tubes can be found in Appendix 2.
- 9.4 A review of the results is conducted at the end of each calendar year and where results have consistently been below the national objective we will consider discontinuing monitoring in that location. The tube is then relocated to another location affected by traffic congestion or discontinued.

10. Monitoring Air Quality - Automatic Continuous Monitoring

- 10.1 Aylesbury Vale District Council also monitor NO₂ levels through the deployment of an automatic continuous monitor.
- 10.2 The automatic monitor records the level of air quality continuously and is capable of recording the hourly data required to verify if the 200µg/m³ objective has been exceeded.
- 10.3 There is currently one automatic continuous monitor operating within the district. This is located just outside the Walton Street AQMA on Walton Street outside the Walton Parish Hall and is shortly to be relocated within the Walton Street AQMA.

11. Results of Air Quality Monitoring - Passive Diffusion Tubes

- 11.1 Records of NO₂ pollution have been published in the annual Air Quality Reports for Aylesbury from 2009 until the end of 2015. These are available on our website <https://www.aylesburyvaledc.gov.uk/section/air-quality>.
- 11.2 The latest Annual Status Report 2017 includes the results from 2016 and is currently with Defra awaiting approval before it is published on our website. However, the monitoring results from this report are included in Appendix 3 for reference.
- 11.3 The results show that the majority of Aylesbury Vale meets the national air quality objectives for NO₂ (40 µg/m³) and the data for 2016 shows a reduction in overall levels across the district.
- 11.4 There is one location within the district where concentrations of NO₂ exceed the objective levels and this is located within the Stoke Road AQMA where an elevated level of 45.2 µg/m³ was recorded when bias adjusted and distance corrected. As a consequence this site was subjected to automated continuous monitoring.

12. Results of Air Quality Monitoring - Automatic Continuous Monitoring

- 12.1 The revised 2015 Updating and Screening Assessment recommended that it may be necessary to redefine the boundary of the Stoke Road AQMA. Therefore the monitoring network should be expanded in and around the Stoke Road AQMA to inform any future delineation changes to this AQMA.
- 12.2 In line with this recommendation an automatic continuous monitor was relocated from within the Stoke Road AQMA to a new site the north of the AQMA outside the Walton Street Parish Hall.
- 12.3 In 2015 the monitoring site measured level was 34.1 µg/m³ at the nearest relevant receptor based on 89% annual data capture and is below the annual mean objective of 40 µg/m³ for this pollutant. There were also no hourly exceedances of the 200 µg/m³ hourly objective.
- 12.4 In 2016 the measured level was 34.3 µg/m³ at the nearest relevant receptor based on 95% data capture. This again is below the annual mean objective of 40 µg/m³ for this pollutant and there were no hourly exceedances of the 200 µg/m³ hourly objective.
- 12.5 The continuous monitoring results from 2015 and 2016 indicate there have been no exceedances in the annual mean for the pollutant north of the Stoke Road AQMA. It is therefore proposed not to amend the boundary of the AQMA and instead move the monitoring site back into the boundary of the Stoke Road AQMA.
- 12.6 The results from the automatic continuous monitor are available at http://www.airqualityengland.co.uk/local-authority/?la_id=14.

13. Detailed Assessment in Buckingham

- 13.1 In 2016 it was identified there was a need for further analysis of the air quality within Buckingham Town Centre. The Environmental Health and Licensing Department therefore proposed to undertake an air modelling assessment of the area to determine whether there was a need to declare a new AQMA and if so where the boundaries should be drawn.
- 13.2 In line with this, a Detailed Assessment was completed in June 2017 which concluded there are no exceedances of the NO₂ annual mean objective at locations where relevant exposure is present. Consequently there is no requirement to declare an AQMA in Buckingham Town Centre at this time.
- 13.3 The Detailed Assessment did however indicate that annual mean NO₂ concentrations are close to the air quality objectives of 40 µg/m³ at locations where relevant exposure may be present. Diffusion tubes will continue to be deployed within Buckingham Town Centre to monitor any future trends in recorded levels.

14. Vale of Aylesbury Local Plan (VALP)

- 14.1 A significant amount of development is taking place throughout the Vale and these new developments have the potential to impact upon air quality. There is the opportunity to include air quality policies within the emerging Vale of Aylesbury Local Plan (VALP). This could encourage developments that require planning permission that may have an adverse impact on air quality to have regard to air quality impacts.
- 14.2 Where appropriate, planning conditions could be sought to minimise harmful air quality impacts arising from development e.g. provision of electric vehicle infrastructure (charging points) for some commercial and residential developments.

15. Plans for the Future - Aylesbury Vale's Air Quality Strategy

- 15.1 While there is no statutory obligation for the Council to have an Air Quality Strategy, the Council's existing Strategy dates from 2010 and requires updating.
- 15.2 The main priorities for air quality in the immediate future will be to work with internal and external partners, in particular Buckinghamshire County Council, to update this Strategy and to formulate action plans to work towards reducing the levels of pollution in the AQMAs and throughout the Vale to meet air quality objectives. The proposed new actions to be incorporated within the Air Quality Strategy include:

Revoke Tring Road AQMA

- 15.3 The 2016 Annual Screening Report recommended that the Tring Road AQMA should be revoked. This recommendation was endorsed by Defra and research is currently being completed on what action is needed to revoke an AQMA with the aim of revoking the AQMA by the end of 2017.

No Idling Campaign

- 15.4 Vehicles idling while stationary cause unnecessary use of fuel, an increase in emissions, and create a noisy environment especially for residents and businesses. The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 give discretionary powers to officers to issue fixed penalty notices of £20 to drivers (rising to £40 if unpaid) who allow their vehicle engines to run unnecessarily while the vehicle is stationary. We therefore propose to seek delegated powers for Officers to utilise this 'no idling' legislation to help improve local air quality and reduce possible nuisance complaints.
- 15.5 Funding will also be sought from a grant provided by Defra, through the Air Quality Grant programme for 2017/18, to undertake a publicity campaign to promote the adoption of the 'no idling' legislation and to encourage vehicle owners not to idle.
- 15.6 It is also proposed to consult with Licensing Committee on the possible inclusion of conditions within the Taxi and Private Hire Licensing Policy to discourage idling in taxi ranks.

Contact Officer

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Appendix 1
Locations of Air Quality Management Areas (AQMAs)

Tring Road Air Quality Management Area



0 12.5 50 Meters



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Stoke Road Air Quality Management Area



0 5 10 20 Meters



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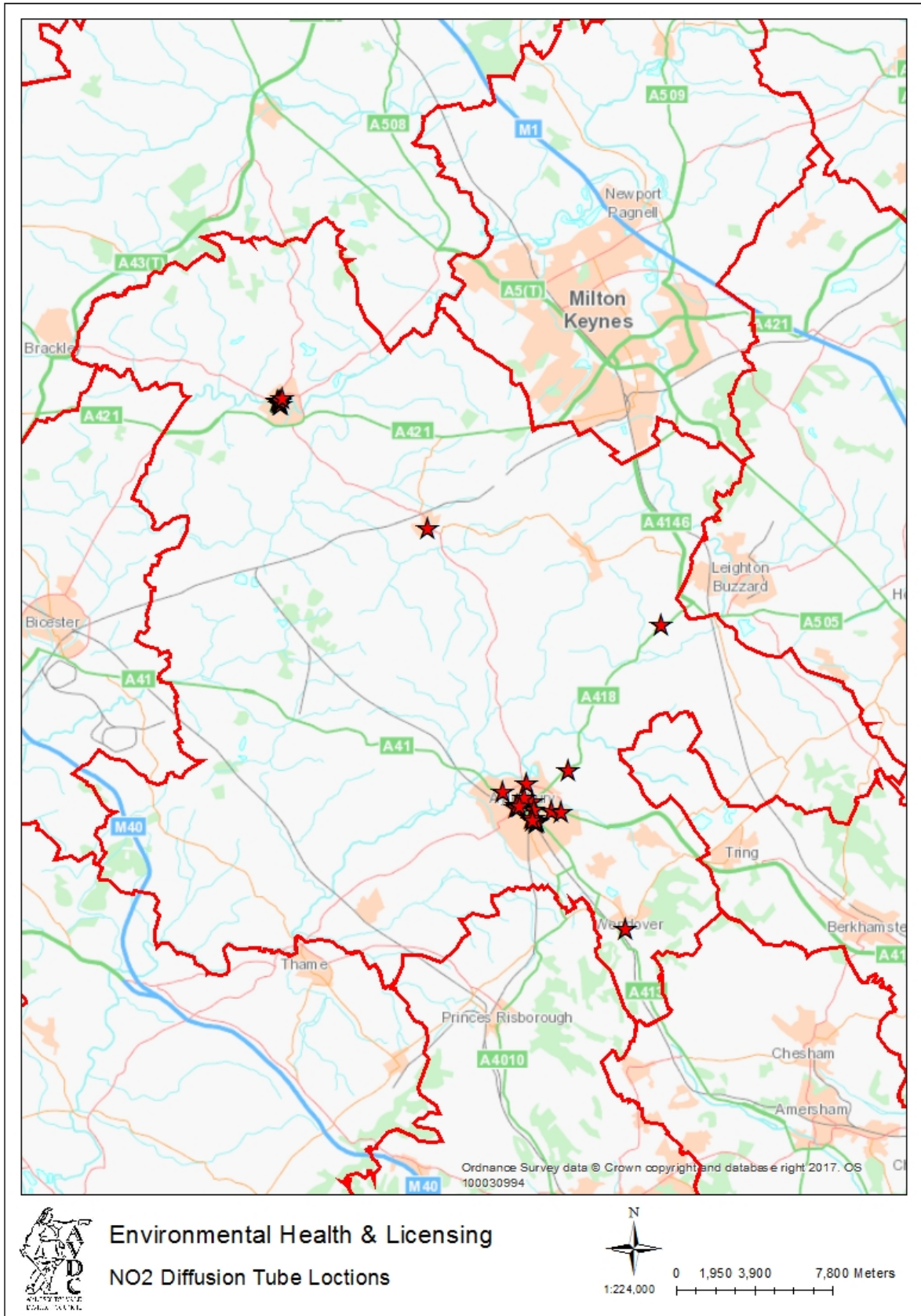
Friarage Road Air Quality Management Area



0 510 20 Meters

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Appendix 2
Location of NO₂ Diffusion Tube Monitoring Sites



Appendix 3

NO₂ Diffusion Tube Monitoring Results 2016

Site Name	Tube No	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Annual Average	Bias Adjusted	Adjusted annual mean
West Street, Buckingham	1	37.2	30.9	40.8	34.8	50.8	40.8	31.9	34.5	45.0	49.7	50.1	52.2		41.6	32.0	32.0
3 Bridge Street, Buckingham	2	50.3	37.9	39.9	35.3	48.7	37.4	40.9	37.1	52.7	M	57.3	59.3		45.2	34.8	34.8
Well Street, Buckingham	3	19.4	17.5	18.4	14.7	19.7	16.6	11.9	14.4	21.9	25.5	27.1	36.2		20.3	15.6	15.6
Candleford Court, Bridge Street, Buckingham	4	19.6	18.1	20.7	15.0	22.3	18.2	13.1	15.6	21.7	29.6	27.5	32.9		21.2	16.3	16.3
Oxfam, Market Square, Buckingham	5	35.3	30.7	28.0	20.8	43.8	30.1	24.6	24.1	36.2	40.4	45.0	48.4		34.0	26.2	26.2
16 Market Sq, Buckingham	6	52.8	40.5	39.7	38.7	52.5	49.4	46.9	43.3	52.7	51.6	62.3	62.6		49.4	38.1	38.1
6 High Street, Buckingham	7	45.4	29.6	32.1	31.5	47.0	35.3	35.2	35.9	M	42.1	48.0	54.2		39.7	30.5	30.5
29 High Street, Winslow	8	42.2	32.7	37.0	29.2	48.0	34.0	33.6	33.2	43.2	43.6	51.3	58.6		40.6	31.2	31.2
27 Elmhurst Road, Aylesbury	9	48.7	36.0	18.2	29.8	49.0	37.9	40.9	42.9	49.3	41.2	57.1	63.1		42.8	33.0	33.0
181 Aylesbury Road, Berton	10	33.6	29.1	24.9	23.2	31.8	28.0	24.8	24.1	36.2	34.0	45.2	53.3		32.4	24.9	24.9
Cambridge Street, Aylesbury	11	44.6	30.1	39.4	28.3	41.1	37.7	36.9	36.8	45.3	45.5	54.5	63.3		42.0	32.3	32.3
87 Tring Road, Aylesbury	12	38.3	34.1	35.4	M	42.9	34.5	24.6	32.0	35.8	46.5	54.0	56.9		39.5	30.5	30.5
183 Tring Road, Aylesbury	13	45.5	39.6	35.6	34.9	57.8	51.8	53.7	48.4	54.8	59.7	67.2	69.7		51.6	39.7	39.7
25 Wendover Road, Aylesbury	14	73.0	57.2	48.7	45.5	62.7	53.1	65.7	62.2	71.5	50.2	75.0	81.5		62.2	47.9	47.9
2 Stoke Road, Aylesbury	15	51.9	42.5	37.0	44.4	59.3	44.9	49.1	49.7	49.5	M	M	69.5		49.8	38.3	38.3
31 Stoke Road, Aylesbury	16	55.9	36.3	41.8	36.1	61.4	46.4	46.6	50.0	52.2	54.5	61.6	73.1		51.3	39.5	39.5

Site Name	Tube No	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Annual Average	Bias Adjusted	Adjusted annual mean
Viridian Square, Walton Street	17	69.4	48.6	45.3	43.3	58.2	49.1	61.0	53.3	67.2	52.0	74.2	80.1		58.5	45.0	45.0
1 -5 Wendover Road, Aylesbury	18	55.1	41.9	43.7	38.7	55.3	49.0	48.9	47.6	54.2	51.7	68.0	69.8		52.0	40.0	40.0
Exchange Street, Aylesbury	19	50.6	36.4	39.1	37.4	59.1	44.9	39.4	43.8	54.1	60.2	63.2	71.8		50.0	38.5	38.5
Friarage Road/Oxford Road Roundabout, Aylesbury	20	51.9	42.4	31.4	40.5	47.2	44.4	37.3	41.2	50.0	42.8	M	59		44.4	34.2	34.2
Oxford Road, Aylesbury	21	28.7	26.4	20.2	20.9	C	24.2	17.1	20.3	31.2	35.7	29.7	48.2		27.5	21.2	21.2
10 Gatehouse Road, Aylesbury	22	39.1	46.6	34.7	46.0	57.3	29.9	29.2	29.4	39.7	37.9	46.1	55.8		41.0	31.6	31.6
Moorlands House, Friarage Road, Aylesbury	23	44.9	34.8	22.6	23.6	31.0	57.0	37.0	43.4	57.5	67.9	M	72.5		44.7	34.5	34.5
Stonehaven Road/Bicester Road, Aylesbury	24	45.0	31.7	24.8	33.0	36.3	38.6	40.7	39.9	47.5	40.3	53.9	68.7		41.7	32.1	32.1
Buckingham Road, Aylesbury	25	44.5	27.9	30.8	24.0	39.6	32.3	23.5	28.2	36.8	35.3	37.3	57.8		34.8	26.8	26.8
High Street, Wendover	26	39.6	24.5	28.9	19.1	30.5	28.6	M	28.7	39.2	33.1	27.8	52.2		32.0	24.7	24.7
91 Leighton Road, Wing	27	47.9	38.0	35.8	C	41.1	44.4	40.5	42.2	51.6	51.3	45.7	61.4		45.4	35.0	35.0

Key

M	Tube missing on collection
C	Tube contaminated (spiders etc) - results may have been compromised
D	Tube damaged
N	Tube not deployed
G	Tube found on ground