
High Speed Rail (London-West Midlands)

Air Quality and Dust Monitoring
Monthly Report - February 2018

London Borough of Camden

March 2018



Department for Transport

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Non-technical summary

This Air Quality and Dust Monitoring Report is published in fulfilment of commitments detailed in the High Speed Rail (London-West Midlands) Environmental Minimum Requirements (EMRs), Annex 1: Code of Construction Practice, for the nominated undertaker to present the results of air quality and dust monitoring carried out within the London Borough of Camden (LBC).

The report presents data during February 2018 from two dust monitoring locations installed around the recently established DB Cargo worksite where demolition works are underway.

The report also presents data from sixty-four nitrogen dioxide (NO₂) diffusion tube monitoring locations around highways within the borough during January 2018 as part of the management of air quality where significant effects may occur due to the scheme.

Dust and NO₂ monitoring results can be found in Section 4 of the report. NO₂ concentrations from diffusion tube monitoring over the course of 2018 and running mean can be found in Appendix C.

Whilst this report is limited to data informing pre-demolition conditions, future reports will present this and data collected from monitoring around active work sites as they are established within LBC. Future LBC monthly reports will include a summary of the construction activities occurring; any complaints received; the data recorded over the monitoring period; any periods in exceedance of the agreed trigger levels; the results of any investigations; and, where the works have been found to be the source, any action taken to immediately resolve the issue and to prevent a recurrence.

Abbreviations and descriptions

AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BPM	Best practicable means
CFA	Community Forum Area
CoCP	Code of Construction Practice
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EA	Environment Agency
EPUK	Environmental Protection UK
ES	Environmental Statement
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
IPPC	Integrated Pollution Prevention and Control
LAPPC	Local Authority Pollution Prevention and Control
LDV	Light Duty Vehicle
LEMP	Local Environmental Management Plan
LGV	Light Goods Vehicle
NO _x	Oxides of nitrogen
NO ₂	Nitrogen dioxide
PM ₁₀	Particulate matter with an average aerodynamic diameter not exceeding 10 micrometres
SPG	Supplementary Planning Guidance
ULEV	Ultra Low Emission Vehicle

1 Introduction

- 1.1.1 The nominated undertaker is required to undertake air quality and dust monitoring as necessary to comply with the requirements of the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, including specifically Annex 1: Code of Construction Practice. Monitoring will fulfil the following aims:
- monitoring the effectiveness of mitigation measures;
 - monitoring the impact of construction works; and
 - inform taking other actions as may be necessary to enable compliance.
- 1.1.2 Monitoring data and interpretive reports are to be provided to each relevant local authority monthly and shall include a summary of the construction activities occurring, any complaints received, the data recorded over the monitoring period, any periods in exceedance of agreed trigger levels, the results of any investigations; and where the works have been found to be the source, any action taken to immediately resolve the issue and to prevent a recurrence.
- 1.1.3 The report presents data from Nitrogen Dioxide (NO₂) Diffusion Tube monitoring carried out around highway locations within the London Borough of Camden (LBC) during January 2018. It also presents continuous dust monitoring data installed around the recently established DB Cargo worksite where demolition works are underway during February 2018.
- 1.1.4 Current worksites located within LBC are detailed in Figure 1, Appendix A and include:
- DB Cargo shed and adjacent land on Granby Terrace, *worksite ref. Soo1-WS01*
 - Works activities include soft strip and demolition of former accommodation block and shed
 - St James' Gardens, *worksite ref. Soo3-WS01*
 - Works activities include archaeological surveys and tree felling.
 - National Temperance Hospital, Insull Wing, *worksite ref. Soo3-WS02*
 - Works activities include pre-demolition surveys.
 - Walkden House, 67-75 & 77-79 Euston Street, *worksite ref. Soo3-WS03*
 - Works activities include pre-demolition surveys.
 - Thistle Hotel, Cardington Street, *worksite ref. Soo3-WS04*
 - Works activities include pre-demolition surveys
 - Ibis Hotel, 3 Cardington Street & 1-3 Cobourg Street, *worksite ref. Soo3-WS05*
 - Works activities include pre-demolition surveys .
 - Former National Temperance Hospital, 110-122 Hampstead Road, *worksite ref. Soo3-WS06*

- Staff accommodation and deliveries.
- Euston Street, Melton Street, Drummond Street block, *worksite ref: Soo3-WS07*
 - Works activities include securing of the site and pre-demolition surveys.
- Euston Square Gardens, *worksite ref: Soo3-WS08*
 - Works activities include securing of the site and tree felling.
- One Euston Square, 40 Melton Street and Grant Thornton House, 22 Melton Street, *worksite ref: Soo3-WS09*
 - Works activities include securing site and pre-demolition surveys
- 132 and 140 Hampstead Road and Petrol Station, *worksite ref: Soo1-WS02*
 - Staff accommodation and pre-demolition surveys

2 Applicable standards and guidance

2.1 Relevant legislation

High Speed Rail (London - West Midlands) Act 2017

- 2.1.1 On 23 February 2017, Royal Assent was granted for Phase One of HS2. The High Speed Two Bill is now an Act of Parliament (law) i.e. High Speed Rail (London - West Midlands) Act 2017.
- 2.1.2 The Act is accompanied by the Environmental Minimum Requirements (EMRs). The EMRs set out the high level environmental and sustainability commitments and are contained in the EMR General Principles document supported by a series of annexes:
- Annex 1: Code of Construction Practice;
 - Annex 2: Planning Memorandum;
 - Annex 3: Heritage Memorandum; and
 - Annex 4: Environmental Memorandum

Environmental Minimum Requirements: General Principles

- 2.1.3 The EMR - General Principles require that the controls to be implemented in delivering the scheme (including the EMRs, powers contained in the Act and Undertakings) will ensure that impacts which have been assessed in the ES will not be exceeded. If the significant adverse impacts identified in the ES are likely to be exceeded, all reasonable steps will be taken to minimise or eliminate those additional impacts.
- 2.1.1 The EMRs also require compliance with the undertakings and assurances.
- 2.1.2 Annex 1 to the EMRs comprises a Code of Construction Practice (CoCP), which shall be adopted and implemented by the nominated undertaker in delivering the works, the high level requirements of which are set out below.

Code of Construction Practice (CoCP)

- 2.1.3 The CoCP details a range of control measures and the standards to be implemented during construction works across Area South (and all of Phase 1 Areas) to protect communities and the environment.
- 2.1.4 Section 7 of the CoCP stipulates the air quality management controls including monitoring to be implemented. The key requirement is for BPM to be employed to limit dust, odour, and exhaust emissions during construction work.

Construction dust

Environmental Protection Act 1990

- 2.1.5 Under Part III of the Environmental Protection Act 1990 (EPA), a local authority has a duty to inspect its area from time to time to detect any statutory nuisances and to take such steps as are reasonably practicable to investigate any complaint of a statutory nuisance made by a person living within its area. Relevant statutory nuisances (under relevant conditions) include dust, odour, smoke, and fumes or gases which are prejudicial to health or a nuisance.
- 2.1.6 Work sites have the potential to give rise to dust, fumes, and odour during demolition and construction works and need to be managed in accordance with Best Practicable Means (BPM). BPM is defined in Section 79 of the Environmental Protection Act 1990 as those measures which are 'reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications'.

Pollution Prevention and Control Act 1999

- 2.1.7 The Pollution Prevention & Control Act 1999 and Environmental Permitting (England and Wales Regulations) 2010 which together govern the Environment Agency (EA) Integrated Pollution Prevention and Control (IPPC) and Local Authority Pollution Prevention and Control (LAPPC).
- 2.1.8 Future air quality related construction operations that may fall within the environmental permitting regime include crushing operations, batching plant and on site waste operations.
- 2.1.9 Operations such as these will have stringent dust control requirements including monitoring and inspections as conditions of their permit.

Air quality around highways

EU and UK Air Quality Management Legislation

- 2.1.10 In 1996 the European Commission published the Air Quality Framework Directive on ambient air quality assessment and management (96/62/EC). This directive defined the policy framework for 12 air pollutants known to have harmful effects on human health and the environment. Limit values (pollutant concentrations not to be exceeded by a certain date) for each specified pollutant were set through a series of Daughter Directives. Directive 1999/30/EC (the 1st Daughter Directive) sets limit values for NO₂ and PM₁₀ (amongst other pollutants) in ambient air.
- 2.1.11 In May 2008 the Directive 2008/50/EC on ambient air quality and cleaner air for Europe came into force. This Directive consolidates the above (apart from the 4th Daughter Directive),

makes provision for extended compliance deadlines and sets new limit values for fine particulate matter (PM_{2.5}).

- 2.1.12 The Directive 2008/50/EC was transposed into national legislation in England by the Air Quality Standards Regulations 2010 (as amended). The Secretary of State for the Environment has the duty of ensuring the air quality limit values are complied with.
- 2.1.13 The air quality limit values and objectives for England for the pollutants relevant to this project are detailed in Table 1 below.

Table 1 – UK air quality objectives relevant to construction dust and highways

Pollutant	Averaging period	Limit value / objective
<i>Human health</i>		
Nitrogen dioxide (NO ₂)	Annual mean	40 µg/m ³
	1-hour mean	200 µg/m ³ [not to be exceeded more than 18 times a year (99.8th percentile)]
Particulate matter (PM ₁₀)	Annual mean	40 µg/m ³
	24-hour mean	50 µg/m ³ not to be exceeded more than 35 times a year (90.4th percentile)
Fine particulate matter (PM _{2.5})	Annual mean	25 µg/m ³
<i>Vegetation</i>		
Oxides of nitrogen (NO _x)	Annual mean	30 µg/m ³

2.2 Relevant guidance

Construction dust

IAQM Guidance

- 2.2.1 The Institute of Air Quality Management (IAQM) has published guidance on air quality monitoring in the vicinity of demolition and construction sites, which sets up to date monitoring protocols and techniques (*IAQM (2012) Guidance on air quality monitoring in the vicinity of demolition and construction sites*). The approach to monitoring is based on the risk rating for the demolition / construction site, derived from an assessment of construction dust emissions as described in the *IAQM (2014) Guidance on the assessment of dust from demolition and construction*.
- 2.2.2 The IAQM guidance proposes that visual inspections for dust emissions are undertaken at least once on each working day and the results clearly recorded in the site log for all construction / demolition sites (regardless of the risk rating).
- 2.2.3 The IAQM guidance also suggests where dust monitoring is required based on the level of risk of dust emissions.
- 2.2.4 In the Area South priority will be given to using near real time measurements of airborne dust, to provide information for active dust management.

- 2.2.5 The guidance recommends the use of a real-time measurement site action level of 250 µg/m³ (15min) unless other information becomes available, at which point a more appropriate level can be set.

GLA Guidance

- 2.2.6 The Mayor's Supplementary Planning Guidance (SPG) on the control of dust and emissions during construction and demolition includes site monitoring protocols depending on the risk category of the site. The GLA guidance replicates the IAQM 2014 risk assessment matrix and associated control measures and monitoring requirements based on the level of risk of dust emissions.

Air quality around highways

Local Air Quality Management: Technical Guidance LAQM.TG(16)

- 2.2.7 Defra's *Technical Guidance (TG16)*¹ sets the requirements and considerations to be taken when monitoring concentrations of NO₂ associated with highways. It provides recommendations for the selection of appropriate locations and the duration of the monitoring surveys and it specifies minimum requirements for quality assurance and quality control, laboratory performance, precision and bias.

3 Monitoring methodology

3.1 Construction dust

- 3.1.1 Monitoring of dust during construction of the project will be undertaken in accordance with Section 7 of the CoCP. The CoCP refers to the best practice in the IAQM and the GLA guidance documents as detailed in section 2.
- 3.1.2 Future visual inspections for dust emissions will be undertaken at least once on each working day and the results recorded in the site log for all construction / demolition sites (regardless of the risk rating)
- 3.1.3 Dust will be measured at appropriate locations at the site boundary and/or at sensitive receptors using instruments that provide continuous measurements of particulate matter as PM₁₀. As a minimum standard of measurement uncertainty, these instruments shall be certified through MCERTS as being indicative ambient particulate monitors.

Risk rating

- 3.1.4 The risk rating for future demolition / construction work sites will be based on IAQM 2014 construction dust assessment guidance. Each detailed assessment will follow the methodology provided in the aforementioned IAQM, guidance. The risk assessment for each demolition/construction work site will assess:
- Potential magnitude of dust emissions.

¹ See also: London Local Air Quality Management Technical Guidance LLAQM(TG.16)

- Sensitivity of the area.
- Risk of dust impacts.
- Assessment of cumulative effects.
- Mitigation measures to be considered.
- Monitoring requirements.

3.1.5 The risk rating for DB Cargo is 'High' and therefore requires real time dust monitoring.

3.1.6 The risk rating for the former National Temperance Hospital, Insull Wing, Walkden House, 67-75 & 77-79 Euston Street, Thistle Hotel, IBIS Hotel, Euston Street / Melton Street / Drummond Street block, One Euston Square, 40 Melton Street and Grant Thornton House, 22 Melton Street; 132 and 140 Hampstead Road and Petrol Station, are 'High' and real time dust monitoring will be installed in the coming months in advance of the commencement of demolition works.

3.1.7 Given the nature of the future archaeological works at St James' Garden and works at Euston Square Gardens the level of risk of dust being generated by the works is not considered sufficient to require monitoring.

Monitoring locations

3.1.8 Current dust monitoring locations have been established at locations near sensitive receptors around DB Cargo shed where demolition works are currently underway. These monitoring locations are detailed in Table 2 below and in Figure 2 in Appendix B.

Table 2 – Monitoring locations – construction dust

Worksite reference	Monitoring site ID	Grid reference (x,y)	Location description	Area of works	Dust risk rating for site	Monitoring site active during period (Y/N)	Change to site since previous period report (Y/N)
S001-WS01	AQ001	529016, 183049	Junction of Park Village East, Stanhope Street and Granby Terrace	DB Cargo	H	Yes	Y
S001-WS01	AQ002	528924, 183130	Park Village East	DB Cargo	H	Yes	Y

3.2 Air quality around highways

- 3.2.1 The locations, duration and standard of air quality monitoring around highways is being undertaken in accordance with Defra's TG16 guidance and any future revisions of it.

Monitoring locations

- 3.2.2 Table 3 lists the HS2 diffusion tube locations in Camden. Figure 3 in Appendix B shows the location of the diffusion tubes.

Table 3 – Monitoring locations for Camden – air quality around highways

Monitoring site ID	Grid reference (x,y)	Location description
HS2-000020BM5	530436, 182929	Junction of St Chad's Street and Grays Inn Road
HS2-000020BM6	530321, 182268	Brunswick Square
HS2-000020BM7	529894, 182702	Chalton Street
HS2-000020BM8	529737, 182641	Junction of Euston Square and Grafton Place
HS2-000020BM9	529785, 182529	Junction of Endsleigh Gardens and Upper Woburn Place
HS2-000020BMA	529429, 182375	Junction of Euston Road and Gower Street
HS2-000020BMB	529273, 182114	Whitfield Street
HS2-000020BMC	529232, 182511	Hampstead Road
HS2-000020BMF	529715, 183123	Junction of Polygon Road and Ossulston Street
HS2-000020BMH	528861, 182717	Nash Street
HS2-000020BMJ	529080, 182698	Junction on Robert Street and Stanhope Street
HS2-000020BMK	529196, 183546	Junction of Plender Street and Bayham Street
HS2-000020BML	529093, 183356	Junction of Arlington Road and Mornington Crescent
HS2-000020BMM	529084, 183722	Junction of Bayham Street and Pratt Street

Monitoring site ID	Grid reference (x,y)	Location description
HS2-000020BMN	528850, 183573	Junction of Delancey Street and Albert Street
HS2-000020BMQ	528662, 183604	Junction of Parkway and Delancey Street
HS2-000020BMR	528548, 183967	Junction of Oval Road and Jamestown Road
HS2-000020BMS	528685, 184188	Junction of Chalk Farm Road and Castlehaven Road
HS2-000020BMT	529079, 184043	Junction of Camden Road and Camden Street
HS2-000020BMU	527783, 185407	Junction of Southampton Road and Fleet Road
HS2-000020BMV	527538, 184250	Primrose Hill Road
HS2-000020BMW	526619, 184081	Junction of Finchley Road and Hilgrove Road
HS2-000020BMZ	525102, 186042	Junction of Finchley Road and Hendon Way
HS2-000020BNA	527884, 183980	Junction of Regent's Park Road and Rothwell Street
HS2-000020BNB	528639, 183518	Junction of Gloucester Gate Bridge and Park Village East
HS2-000020BNC	528528, 183443	Junction of Outer Circle and Gloucester Gate
HS2-000020BNH	528763, 183720	Junction of Parkway and Albert Street
HS2-000020BNN	530744, 181308	Lincoln's Inn Fields
HS2-000020BNQ	529735, 183737	Camley Street
HS2-000020BNY	524839, 185136	Junction of Mill Lane and Hillfield Road
HS2-000020BNZ	528050, 185508	Mansfield Road
HS2-000020BPo	529708, 184871	Junction of Camden Road and Torriano Avenue
HS2-000020BP2	531149, 181616	Junction of Grays Inn Road and Holborn
HS2-000020BPB	528966, 183735	Camden High Street
HS2-000020BPC	528788, 184591	Castlehaven Road
HS2-000020BPD	528571, 184683	Prince of Wales Road
HS2-000020BPE	527710, 184749	Haverstock Hill
HS2-000020BPF	527549, 184640	Junction of Primrose Gardens and England's Lane
HS2-000020BPU	529476, 182267	Junction of Gower Street and Grafton Way
HS2-000020BPV	529653, 182958	Phoenix Road
HS2-000020BPW	528939, 183637	Junction of Delancey Street and Arlington Road
HS2-000020BPX	529177, 182625	Netley Street
HS2-000020BPY	529060, 182947	Stanhope Street
HS2-000020BPZ	528790, 182923	Albany Street
HS2-000020BQo	529493, 183113	Werrington Street

Monitoring site ID	Grid reference (x,y)	Location description
HS2-000020BQ1	529574, 183045	Polygon Road
HS2-000020BQ2	526320, 183980	Alexandra Place
HS2-000020BQ3	529228, 183172	Harrington Square
HS2-000020BQ4	529290, 182572	Junction of North Gower Street and Starcross Street
HS2-000020BQ5	527713, 184392	Adelaide Road
HS2-000020BQ6	528836, 183474	Mornington Terrace
HS2-000020BQ7	529009, 183479	Arlington Road
HS2-000020BQ8	529024, 183213	Clarkson Row
HS2-000020BQ9	528923, 183121	Park Village East
HS2-000020BQA	529386, 183132	Eversholt Street
HS2-000020BQB	529147, 182816	Junction of Harrington Street and Varndell Street
HS2-000020BQC	529199, 182704	Junction of Robert Street and Hampstead Road
HS2-000020BQD	529648, 182856	Drummond Crescent
HS2-000020BQJ	529380, 182225	Grafton Way (installed at end of August)
HS2-000020BQK	529398, 182593	Junction of Drummond Street and Cobourg Street (installed at end of August)
HS2-000020BQL	528768, 183581	Delancey Street (installed at end of August)
HS2-000020BP4	526633, 184392	Triplicate site on Finchley Road next to Swiss Cottage kerbside automatic monitoring station
HS2-000020BP5	529895, 182657	Triplicate site next to the Euston Road roadside automatic monitoring stations
HS2-000020BP9	530120, 182034	Triplicate site in Russell Square next to Bloomsbury urban background automatic monitoring station

4 Monitoring results

4.1 Construction dust

Data summary

- 4.1.1 For construction and demolition sites with low risk of dust impacts commentary text on visual inspections will be provided in future reports.
- 4.1.2 For construction and demolition sites with medium or high risk of dust impacts future reports will provide:
- Commentary text on any visual inspections undertaken.
 - Commentary text on the relevant trigger level; currently 250 µg/m³ as a 15 minute

mean.

- A table of summary statistics for each monitoring site – max, min, mean concentrations of PM₁₀, number of exceedances of the trigger level. For the monitors around DB Cargo, these statistics are presented in Table 4 below.
- Line charts of monthly data from each monitor relevant to each site, with trigger level line. The data for monitors around DB Cargo is included in Appendix C.

Table 4 – Summary statistics – construction dust 15-minute indicative PM₁₀ concentrations for February 2018

Worksite reference	Monitoring site ID	Mean 15-minute PM ₁₀ concentration (µg/m ³)	Minimum 15-minute PM ₁₀ concentration (µg/m ³)	Maximum 15-minute PM ₁₀ concentration (µg/m ³)	Number of 15-minute periods exceeding trigger level of 250 µg/m ³	15-minute data capture (%)
S001-WS01	AQ001	12.5	0.8	263.7	1	100.0
S001-WS01	AQ002	9.9	0.8	47.3	0	100.0

Exceedances of dust trigger level

- 4.1.4 Table 5 below presents a summary of exceedance of dust trigger levels including dates/time periods and an explanation.

Table 5 – Summary of exceedances of trigger level – construction dust

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
12/02/2018 14:46 – 12/02/2018 15:00	S001-WS01	AQ001	n/a	Unknown reason for Trigger No dusty activities programmed or being undertaken at the time. Not related to HS2 site activity.	n/a

4.2 Air quality around highways

Data summary

- 4.2.1 Table 6 below details the monitoring results from the NO₂ diffusion tube monitoring survey in LBC for the month of January 2018. This data is two months in arrears due to the time required for lab analysis.
- 4.2.2 Table 7 in Appendix C details NO₂ concentrations from diffusion tube monitoring for all previous months in 2018 and running mean (µg/m³).

Table 6 – Monitoring results - air quality around highways

Monitoring Site ID	Location description	Provisional NO ₂ concentration for January 2018 (µg/m ³)
HS2-000020BM5	Junction of St Chad's Street and Grays Inn Road	52
HS2-000020BM6	Brunswick Square	60
HS2-000020BM7	Chalton Street	62
HS2-000020BM8	Junction of Euston Square and Grafton Place	66
HS2-000020BM9	Junction of Endsleigh Gardens and Upper Woburn Place	74
HS2-000020BMA	Junction of Euston Road and Gower Street	71
HS2-000020BMB	Whitfield Street	56
HS2-000020BMC	Hampstead Road	59
HS2-000020BMF	Junction of Polygon Road and Ossulston Street	37
HS2-000020BMH	Nash Street	42
HS2-000020BMJ	Junction on Robert Street and Stanhope Street	48

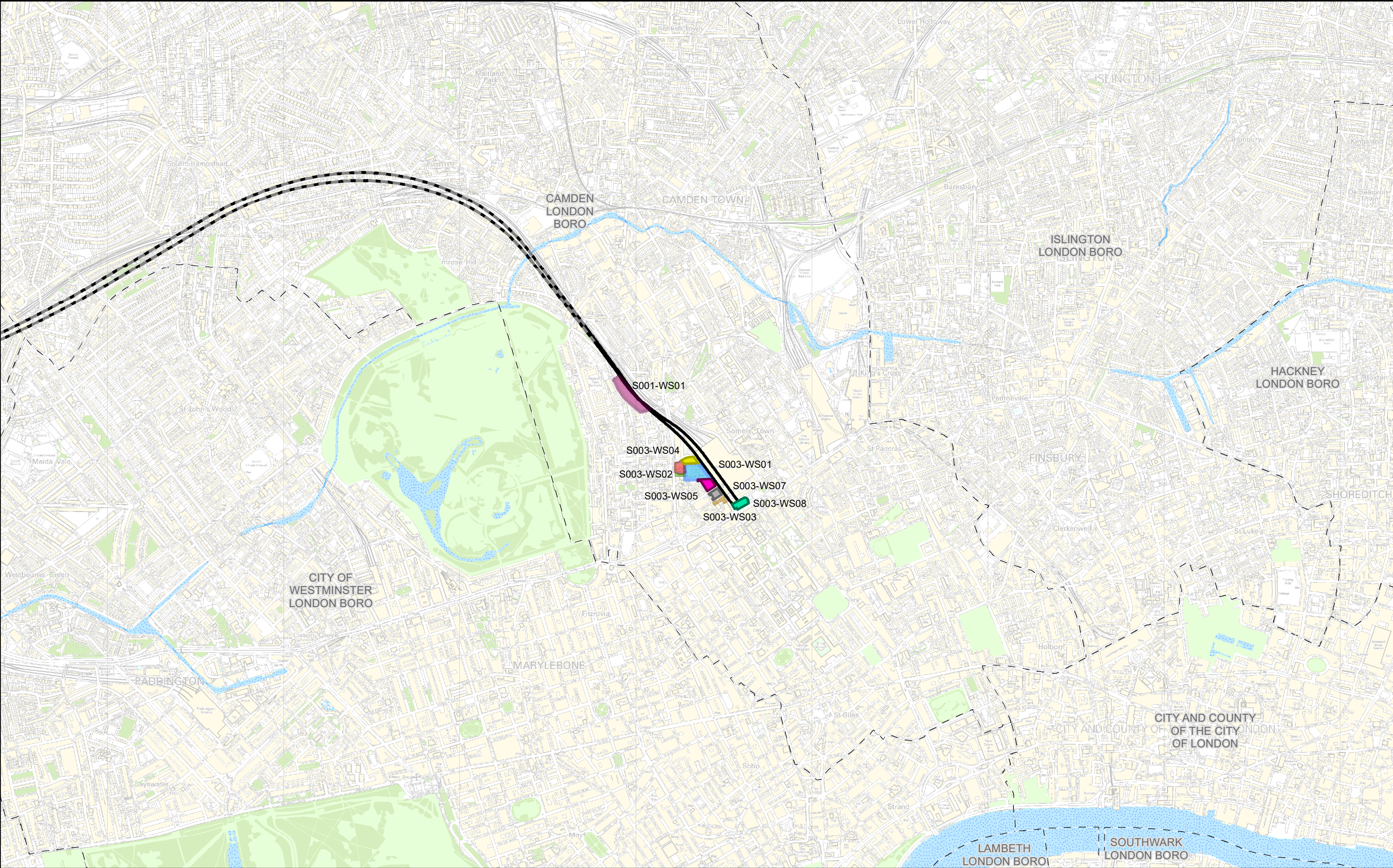
Monitoring Site ID	Location description	Provisional NO ₂ concentration for January 2018 (µg/m ³)
HS2-000020BMK	Junction of Plender Street and Bayham Street	61
HS2-000020BML	Junction of Arlington Road and Mornington Crescent	47
HS2-000020BMM	Junction of Bayham Street and Pratt Street	85
HS2-000020BMN	Junction of Delancey Street and Albert Street	50
HS2-000020BMQ	Junction of Parkway and Delancey Street	Tube missing
HS2-000020BMR	Junction of Oval Road and Jamestown Road	47
HS2-000020BMS	Junction of Chalk Farm Road and Castlehaven Road	57
HS2-000020BMT	Junction of Camden Road and Camden Street	63
HS2-000020BMU	Junction of Southampton Road and Fleet Road	51
HS2-000020BMV	Primrose Hill Road	49
HS2-000020BMW	Junction of Finchley Road and Hilgrove Road	55
HS2-000020BMZ	Junction of Finchley Road and Hendon Way	99
HS2-000020BNA	Junction of Regent's Park Road and Rothwell Street	50
HS2-000020BNB	Junction of Gloucester Gate Bridge and Park Village East	56
HS2-000020BNC	Junction of Outer Circle and Gloucester Gate	36
HS2-000020BNH	Junction of Parkway and Albert Street	56
HS2-000020BNN	Lincoln's Inn Fields	Tube Missing
HS2-000020BNQ	Camley Street	Tube Missing
HS2-000020BNY	Junction of Mill Lane and Hillfield Road	52
HS2-000020BNZ	Mansfield Road	46
HS2-000020BP0	Junction of Camden Road and Torriano Avenue	68
HS2-000020BP2	Junction of Grays Inn Road and Holborn	Tube missing
HS2-000020BPB	Camden High Street	87
HS2-000020BPC	Castlehaven Road	41
HS2-000020BPD	Prince of Wales Road	40
HS2-000020BPE	Haverstock Hill	49
HS2-000020BPF	Junction of Primrose Gardens and England's Lane	42
HS2-000020BPU	Junction of Gower Street and Grafton Way	53
HS2-000020BPV	Phoenix Road	45
HS2-000020BPW	Junction of Delancey Street and Arlington Road	48
HS2-000020BPX	Netley Street	43

Monitoring Site ID	Location description	Provisional NO ₂ concentration for January 2018 (µg/m ³)
HS2-000020BPY	Stanhope Street	50
HS2-000020BPZ	Albany Street	49
HS2-000020BQ0	Werrington Street	42
HS2-000020BQ1	Polygon Road	42
HS2-000020BQ2	Alexandra Place	37
HS2-000020BQ3	Harrington Square	59
HS2-000020BQ4	Junction of North Gower Street and Starcross Street	50
HS2-000020BQ5	Adelaide Road	53
HS2-000020BQ6	Mornington Terrace	47
HS2-000020BQ7	Arlington Road	42
HS2-000020BQ8	Clarkson Row	50
HS2-000020BQ9	Park Village East	44
HS2-000020BQA	Eversholt Street	63
HS2-000020BQB	Junction of Harrington Street and Varndell Street	51
HS2-000020BQC	Junction of Robert Street and Hampstead Road	53
HS2-000020BQD	Drummond Crescent	53
HS2-000020BQJ	Grafton Way (installed at end of August)	72
HS2-000020BQK	Junction of Drummond Street and Cobourg Street (installed at end of August)	49
HS2-000020BQL	Delancey Street (installed at end of August)	60
HS2-000020BP4	Triplicate site on Finchley Road next to Swiss Cottage kerbside automatic monitoring station	Tube missing
HS2-000020BP5	Triplicate site next to the Euston Road roadside automatic monitoring stations	95
HS2-000020BP9	Triplicate site in Russell Square next to Bloomsbury urban background automatic monitoring station	47

4.3 Complaints

4.3.1 There are no complaints relating to dust or air quality in this period.

Appendix A – Site locations



Legend

Route in tunnel

Route on surface

DB Cargo Shed worksite

St. James' Gardens worksite

National Temperance Hospital worksite

Ibis Hotel, 3 Cardington Street & 1-3 Cobourg Street

National Temperance Hospital, Insull Wing

Walkden House, 65-75 & 77-79 Euston Street

Thistle Hotel, Cardington Street

Euston Street, Melton Street, Drummond Street block

Euston Square Gardens

Figure Number

Figure Name

Work Site Locations

London Borough of Camden

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Scale at A3: 20,000

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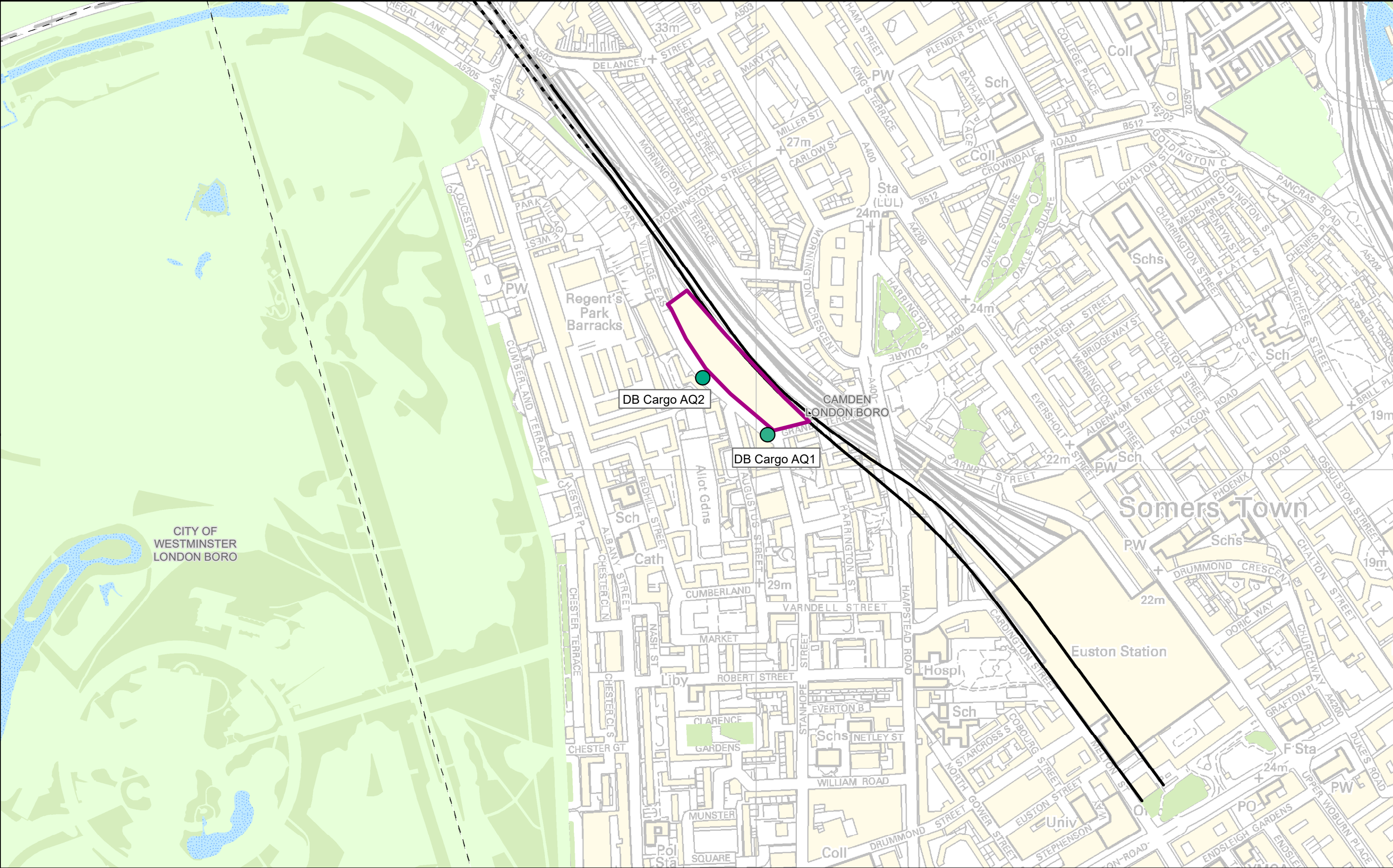
Metres

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1EW02-CSJ-EV-REP-S000-000013_appA_fig1

Date: 08/02/18

Appendix B – Monitoring locations

Construction dust



Legend

- Route in tunnel
- Route on surface
- Construction Dust Monitoring Locations
- DB Cargo Shed worksite

Figure Number

Figure Name

Construction dust monitoring site locations

London Borough of Camden

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Scale at A3: 5,000

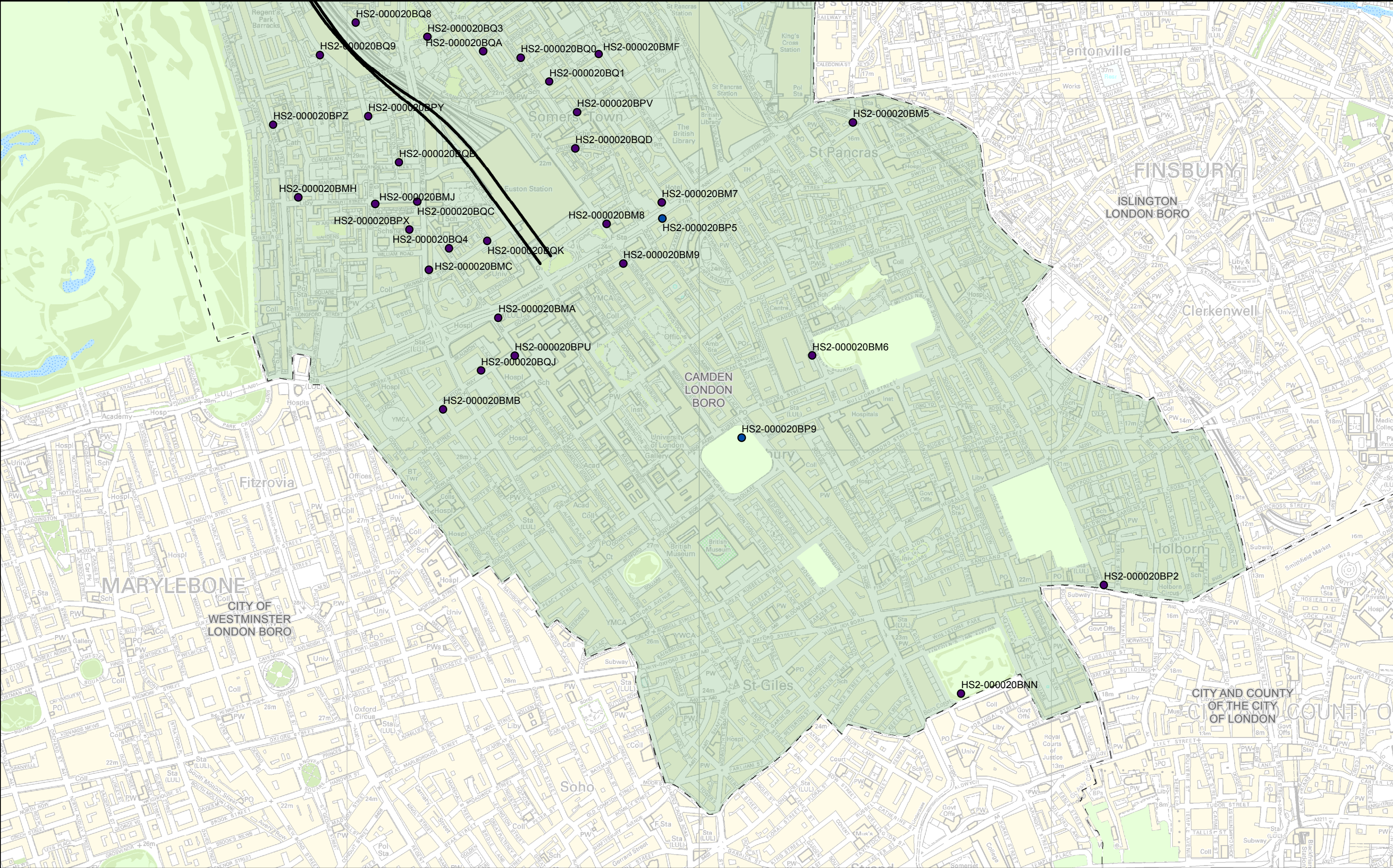
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1EW02-CSJ-EV-REP-S000-000013_appB_fig2

Date: 26/10/17

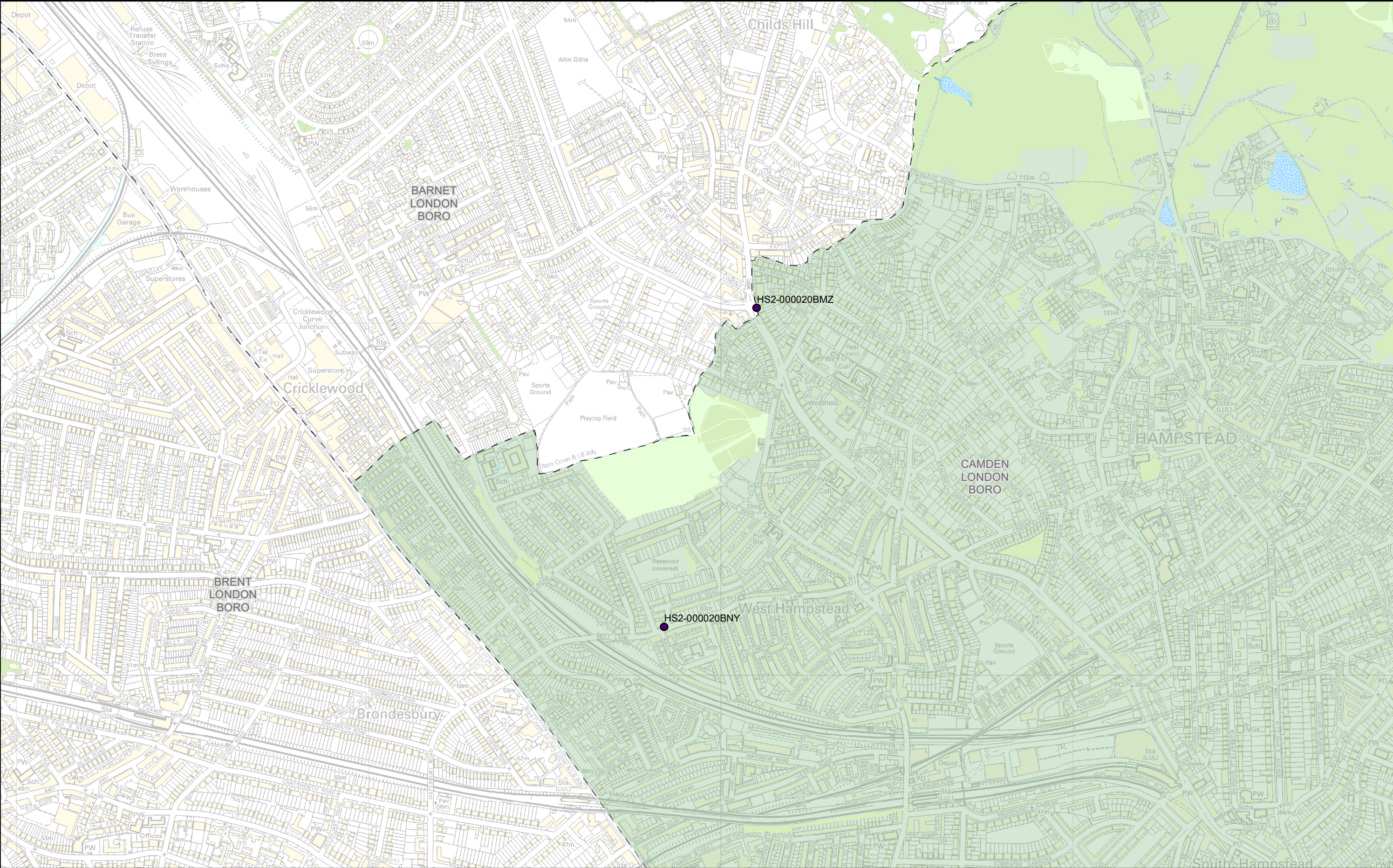
Air quality around highways



Legend <ul style="list-style-type: none">Route in tunnelRoute on surfaceDiffusion tubeDiffusion tube (co-located)London Borough of Camden	Figure Number	 <div>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</div> <div>Scale at A3: 10,000</div> <div><div>0100200300400</div><div>Metres</div></div>
	Figure Name	
	London Borough of Camden	<div>© Crown copyright and database rights 2016. Ordnance Survey Licence Number 100049190. 1EW02-CSJ-EV-REP-S000-000013_appA_fig1</div> <div>Date: 11/12/17</div>



Legend <ul style="list-style-type: none">Route in tunnelRoute on surfaceDiffusion tubeDiffusion tube (co-located)London Borough of Camden	Figure Number Figure Name Nitrogen dioxide tube monitoring site locations (sheet 2) London Borough of Camden	<p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</p> <p>Scale at A3: 10,000</p> <p>0 100 200 300 400 Metres</p> <p>© Crown copyright and database rights 2016. Ordnance Survey Licence Number 100049190. 1EW02-CSJ-EV-REP-S000-000013_appA_fig1</p> <p>Date: 11/12/17</p>
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Legend <ul style="list-style-type: none">Route in tunnelRoute on surfaceDiffusion tubeDiffusion tube (co-located)London Borough of Camden	Figure Number	 <div>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</div> <div>Scale at A3: 10,000</div> <div><div>0100200300400</div><div>Metres</div></div>
	Figure Name	
	London Borough of Camden	<div>© Crown copyright and database rights 2016. Ordnance Survey Licence Number 100049190. 1EW02-CSJ-EV-REP-S000-000013_appA_fig1</div> <div>Date: 11/12/17</div>

Appendix C – Monitoring data

Construction dust

Figure 6 – Construction dust 15-minute mean indicative PM₁₀ concentration for monitor AQ001.

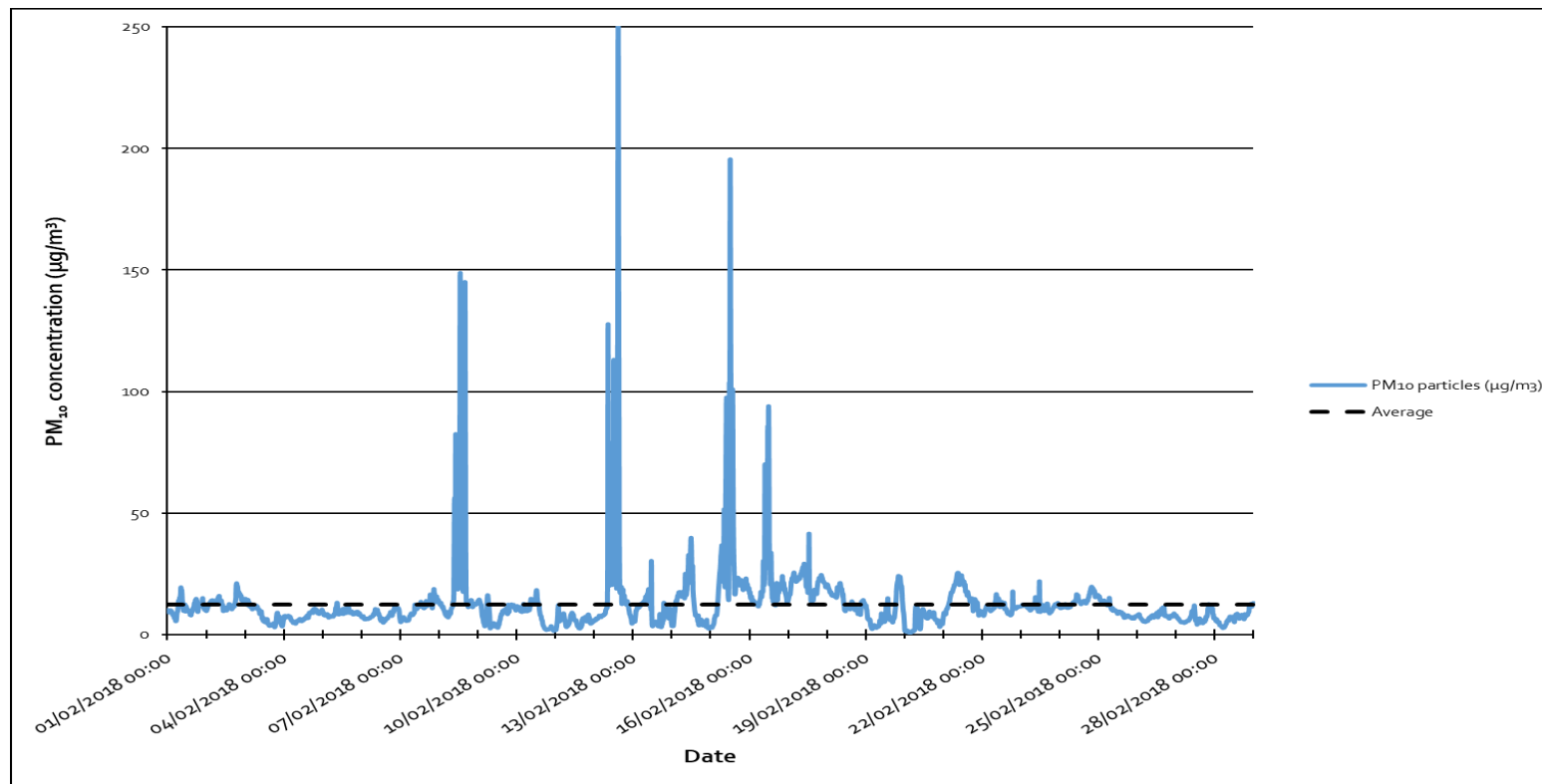
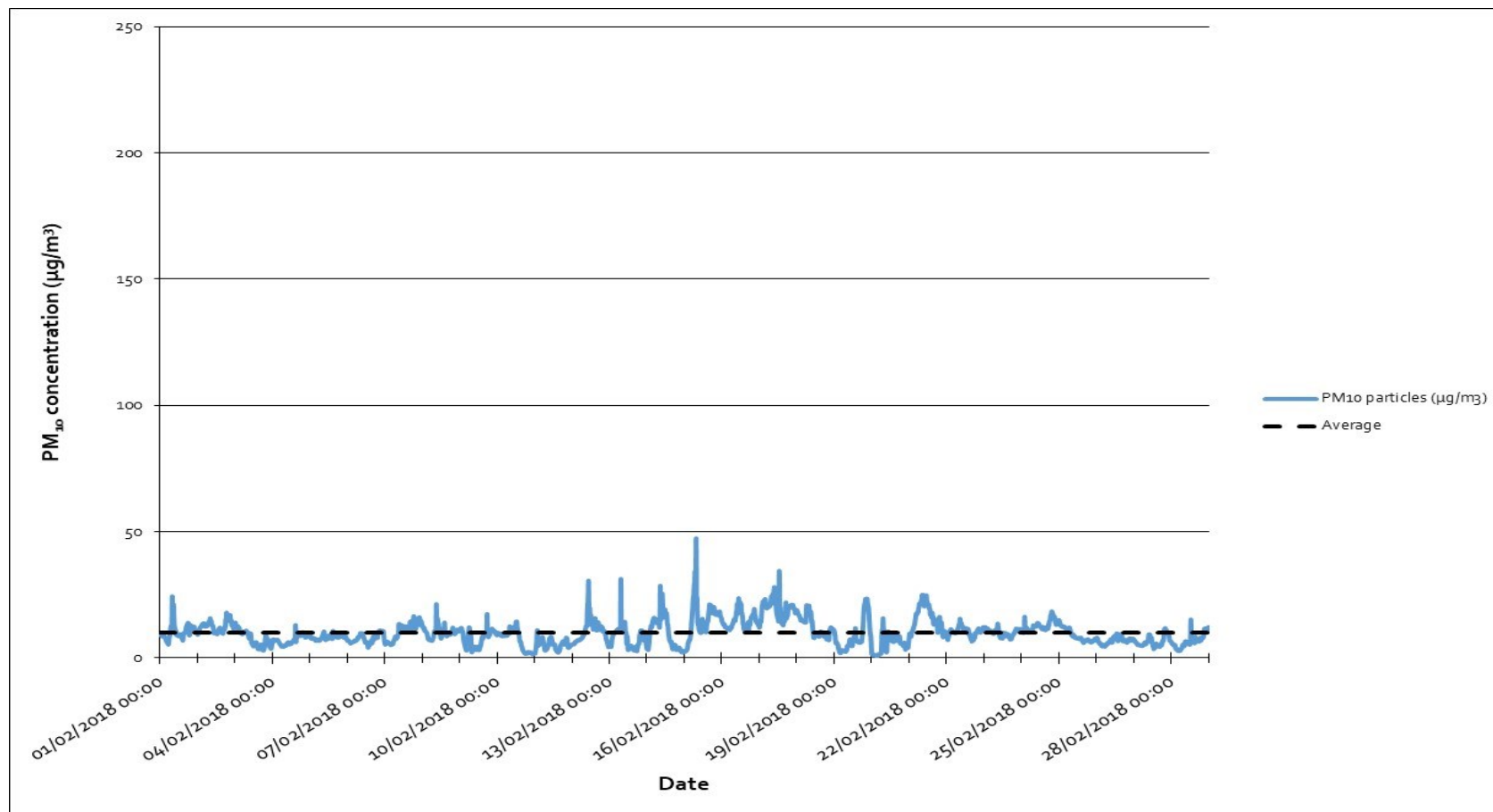


Figure 5– Construction dust 15-minute mean indicative PM₁₀ concentration for monitor AQ002.



Air quality around highways

Table 7 - Air quality around highways NO₂ concentrations from diffusion tube monitoring all months and running mean (µg/m³) within LB Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BM5	Junction of St Chad's Street and Grays Inn Road	52												52
HS2-000020BM6	Brunswick Square	60												60
HS2-000020BM7	Chalton Street	62												62
HS2-000020BM8	Junction of Euston Square and Grafton Place	66												66
HS2-000020BM9	Junction of Endsleigh Gardens and Upper Woburn Place	74												74
HS2-000020BMA	Junction of Euston Road and Gower Street	71												71
HS2-000020BMB	Whitfield Street	56												56

² Note: to aid interpretation and conform with best practice, the monthly measurements in this table are reported rounded to the nearest whole number. The annual mean presented here is calculated based on laboratory data to 4 significant figures, rounded to a whole number, and therefore may differ slightly to a mean derived from averaging the rounded monthly measurements in the table.

Air Quality and Dust Monitoring Monthly Report February 2018,
London Borough of Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BMC	Hampstead Road	59												59
HS2-000020BMF	Junction of Polygon Road and Ossulston Street	37												37
HS2-000020BMH	Nash Street	42												42
HS2-000020BMJ	Junction on Robert Street and Stanhope Street	48												48
HS2-000020BMK	Junction of Plender Street and Bayham Street	61												61
HS2-000020BML	Junction of Arlington Road and Mornington Crescent	47												47
HS2-000020BMM	Junction of Bayham Street and Pratt Street	85												85
HS2-000020BMN	Junction of Delancey Street and Albert Street	50												50
HS2-000020BMQ	Junction of Parkway and Delancey Street	Tube Missing												No data

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London Borough of Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BMR	Junction of Oval Road and Jamestown Road	47												47
HS2-000020BMS	Junction of Chalk Farm Road and Castlehaven Road	57												57
HS2-000020BMT	Junction of Camden Road and Camden Street	63												63
HS2-000020BMU	Junction of Southampton Road and Fleet Road	51												51
HS2-000020BMV	Primrose Hill Road	49												49
HS2-000020BMW	Junction of Finchley Road and Hilgrove Road	55												55
HS2-000020BMZ	Junction of Finchley Road and Hendon Way	99												99
HS2-000020BNA	Junction of Regent's Park Road and Rothwell Street	50												50
HS2-000020BNB	Junction of Gloucester Gate Bridge and Park Village East	56												56

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London Borough of Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BNC	Junction of Outer Circle and Gloucester Gate	36												36
HS2-000020BNH	Junction of Parkway and Albert Street	56												56
HS2-000020BNN	Lincoln's Inn Fields	Tube Missing												No data
HS2-000020BNQ	Camley Street	Tube missing												No data
HS2-000020BNY	Junction of Mill Lane and Hillfield Road	52												52
HS2-000020BNZ	Mansfield Road	46												46
HS2-000020BPo	Junction of Camden Road and Torriano Avenue	68												68
HS2-000020BP2	Junction of Grays Inn Road and Holborn	Tube missing												No data
HS2-000020BPB	Camden High Street	87												87
HS2-000020BPC	Castlehaven Road	41												41

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London Borough of Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BPD	Prince of Wales Road	40												40
HS2-000020BPE	Haverstock Hill	49												49
HS2-000020BPF	Junction of Primrose Gardens and England's Lane	42												42
HS2-000020BPU	Junction of Gower Street and Grafton Way	53												53
HS2-000020BPV	Phoenix Road	45												45
HS2-000020BPW	Junction of Delancey Street and Arlington Road	48												48
HS2-000020BPX	Netley Street	43												43
HS2-000020BPY	Stanhope Street	50												50
HS2-000020BPZ	Albany Street	49												49
HS2-000020BQ0	Werrington Street	42												42
HS2-000020BQ1	Polygon Road	42												42

Air Quality and Dust Monitoring Monthly Report February 2018,
London Borough of Camden

Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BQ2	Alexandra Place	37												37
HS2-000020BQ3	Harrington Square	59												59
HS2-000020BQ4	Junction of North Gower Street and Starcross Street	50												50
HS2-000020BQ5	Adelaide Road	53												53
HS2-000020BQ6	Mornington Terrace	47												47
HS2-000020BQ7	Arlington Road	42												42
HS2-000020BQ8	Clarkson Row	50												50
HS2-000020BQ9	Park Village East	44												44
HS2-000020BQA	Eversholt Street	63												63
HS2-000020BQB	Junction of Harrington Street and Varndell Street	51												51
HS2-000020BQC	Junction of Robert Street and Hampstead Road	53												53

Air Quality and Dust Monitoring Monthly Report February 2018,
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Monitoring Site ID	Location description	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	June 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Mean ²
HS2-000020BQD	Drummond Crescent	53												53
HS2-000020BQJ	Grafton Way (installed at end of August)	72												72
HS2-000020BQK	Junction of Drummond Street and Cobourg Street (installed at end of August)	49												49
HS2-000020BQL	Delancey Street (installed at end of August)	60												60
HS2-000020BP ₄	Triplicate site on Finchley Road next to Swiss Cottage kerbside automatic monitoring station	Tubes missing												No data
HS2-000020BP ₅	Triplicate site next to the Euston Road roadside automatic monitoring stations	95												95
HS2-000020BP ₉	Triplicate site in Russell Square next to Bloomsbury urban background automatic monitoring station	47												47

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