

Air Quality and Dust Monitoring Monthly Report – November 2022 London Borough of Hillingdon



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

A report prepared by EWCs and MWCCs on behalf of HS2 Ltd.

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.

© High Speed Two (HS2) Limited, 2021, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v2.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2 **OGI** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



Printed in Great Britain on paper containing at least 75% recycled fibre.

Monthly Summary

- 1.1.1 This Summary Report is published in fulfilment of commitments detailed in the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, Annex 1: Code of Construction Practice, for the nominated undertaker to present the results of air quality and dust monitoring undertaken in the London Borough of Hillingdon (LBH) during October and November 2022 respectively.
- 1.1.2 Figure 1 to Figure 4 in Appendix A indicate the current worksites, together with air quality monitoring locations.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2, which highlights: the applicable standards and guidance, as well as the air quality and dust monitoring methodologies to be implemented by nominated undertakers throughout construction.
- 1.1.4 The current phase of works commenced in November 2019 and is expected to be completed by 2025. The current worksites, as presented in Appendix A, Figure 1 to Figure 4, include:

Gatemead and West Ruislip Embankment

- Piling operations;
- Concreting;
- Groundworks;
- Materials management; and
- Conveyor construction.

Copthall North and South

- Groundworks;
- Piling;
- Materials management;
- Concreting; and
- Shuttering works. ;

West Ruislip Portal

- Groundworks;
- Concreting;
- Tunnel portal construction;
- Materials management; and
- Conveyor construction.

South Ruislip

- Ground works;
- Piling operations;

- Concrete works; and
- Materials management.

Northern Sustainable Placement Area (NSPA)

- Materials movements; and
- Groundworks.

Southern Sustainable Placement Area (SSPA)

- Site mobilisation and set-up;
- Spoil treatment area construction;
- Materials movements; and
- Groundworks.

CVV Dews Lane

- Jetty piling: piling platform relocation works;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups, maintenance plant and clean up around piles;
- HOAC Compound: operation and de-sanding;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation Works: GI works;
- Pier Construction: arch from deck for FRC works for pile cap and pier and standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- Core Drilling of Concrete;
- South Abutment: earthworks/stabilisation, FRC early works on SE and drainage works;
- Pile Trimming;
- Grand Union Canal Work: operation and maintenance;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farm; demolition of bentonite farm RC slabs;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;
- RC Crossing: the emergency dismantling of obstruction;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling, external PT and an internal PT stressing & grouting; and
- Deck Finishes: preparation and operation of storage yards, installation of below deck access provision, traffic management on the deck surface delivery of parapets, noise

barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within the deck.

CVV Moorhall Road

- Jetty piling: piling platform relocation works;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, grout curtain around viaduct pile groups, maintenance plant and clean up around piles;
- North and South Moorhall Road: compound operation and de-sanding compound;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation Works: GI works;
- NYGB Re-alignment;
- Pier Construction: arch from deck, standard piers FRC works for pile cap and pier, post tensioning of AFD legs and tower crane mob / demob;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- Core Drilling of Concrete;
- Pile Trimming;
- Harefield Lake No.2: compensation pond;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- Cofferdam Excavation;
- Bentonite Farm; demolition of bentonite farm RC slabs;
- RC Crossing: the emergency dismantling of obstruction;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling, internal PT stressing & grouting and external PT; and
- Deck Finishes: preparation and operation of storage yards, installation of below deck access provision, traffic management on the deck surface delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within the deck.

1.1.5 Fourteen (14) dust monitors are installed around worksites. The sites returned a low to high risk dust risk rating.

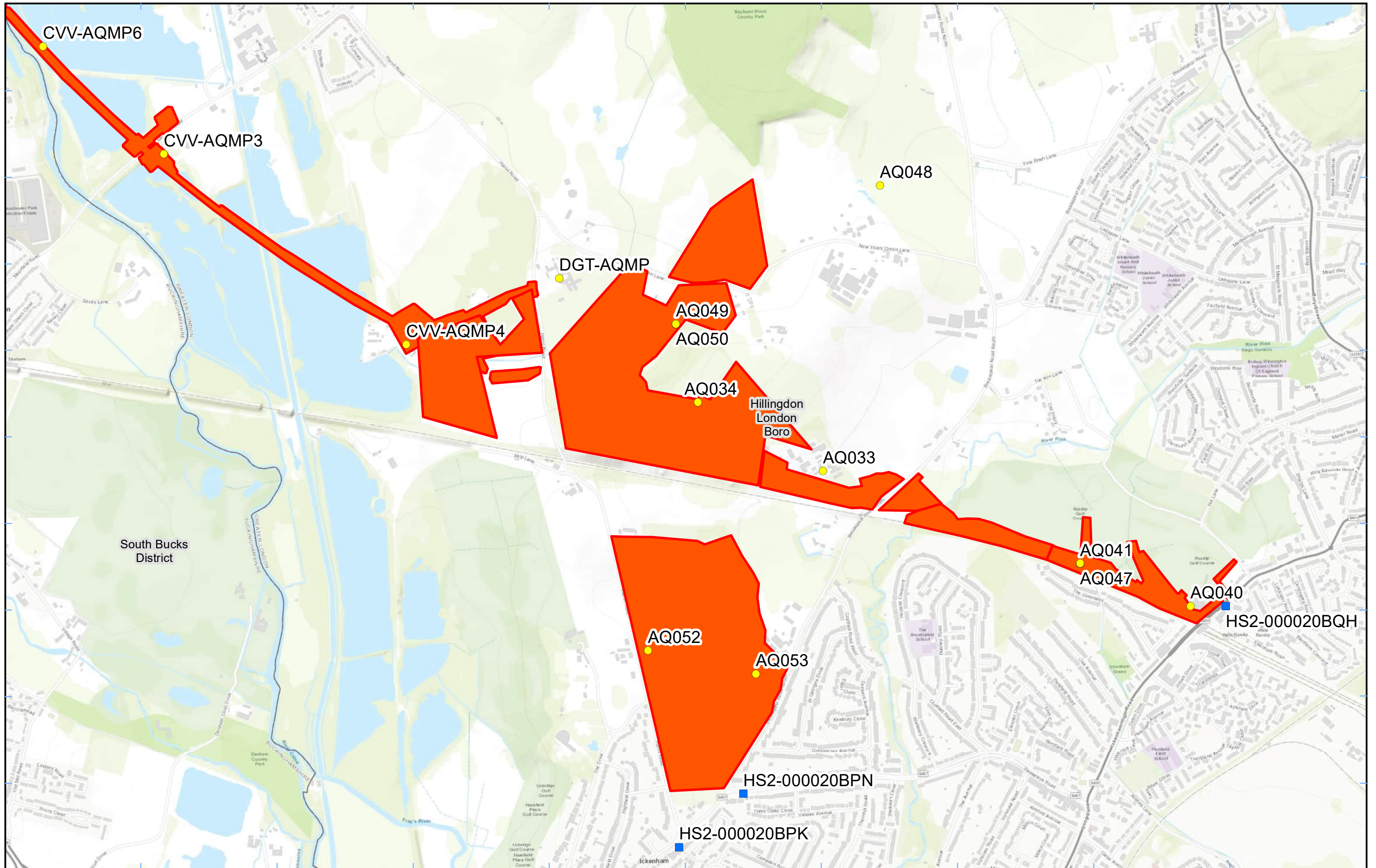
1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor in Figure 5. All continuous dust monitoring is undertaken using indicative monitors. Despite being Environment Agency (MCERTS) certified, indicative monitors carry a higher level of uncertainty than reference

monitors, and therefore cannot be strictly compared with Air Quality Standards for human health and the environment. The purpose of the monitoring undertaken is to ensure the effectiveness of the on-site mitigation.

- 1.1.7 The trigger level for PM₁₀ concentrations of 190µg/m³, over a 1-hour period, in accordance with the updated guidance document '*Guidance on Monitoring in the Vicinity of Demolition and Construction Sites - (October 2018)*' has been applied.
- 1.1.8 Dust trigger alerts were recorded during the monitoring period (November 2022) and are reported in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in November 2022 due to power supply issues, monitor relocation, access issues to monitors and monitor faults that have since been resolved.
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects occur as a result of the scheme.
- 1.1.11 Diffusion tube monitoring results are as provided from the laboratory analysis, and therefore still require various analysis and adjustments to be undertaken. Final corrected results will be presented and described in the annual report. However, based on the results to date, no unexpected values were recorded during the monitoring period.
- 1.1.12 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2022 running mean.
- 1.1.13 There were no (0) complaints received during this reporting period.

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 4: Current monitoring locations within the LBH



Legend
■ Diffusion Tube ■ Worksite
● Dust Monitor District Borough Unitary Boundaries

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

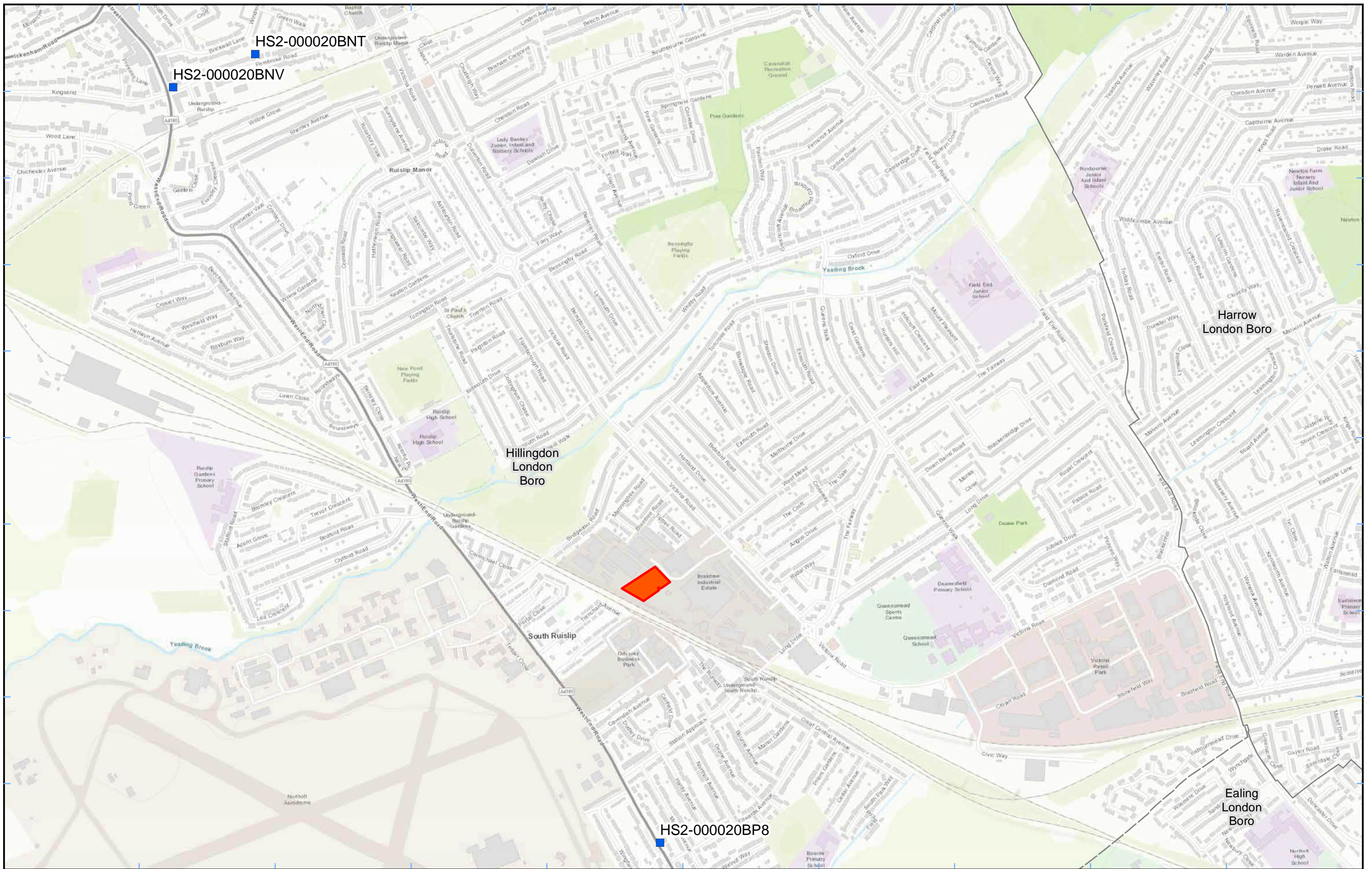
Map Number
 Map Name
**Worksite & Monitoring Locations
 in LBH (Sheet 1)**
 London Borough of Hillingdon

hs2
 Registered in England. Registration number 06791686.
 Registered office: 2 Snowhill, Queensway,
 Birmingham B4 6GA.

Scale at A3: 1:12,000
 0 120 240 360 480
 Metres

© Crown copyright and database rights 2022.
 Ordnance Survey Licence Number 100049190.

Doc Number: Date: 30/11/22



Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

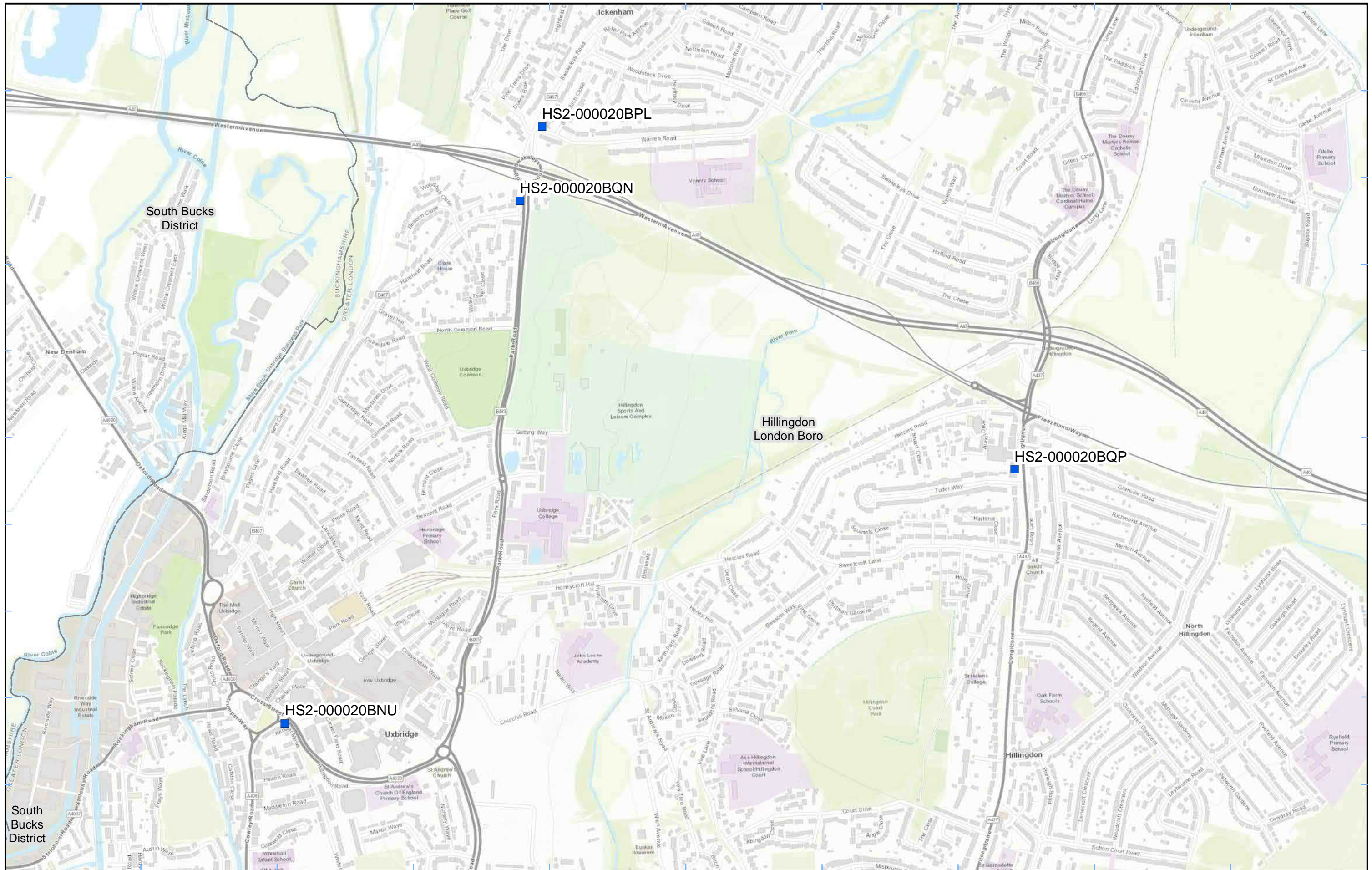
Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
 London Borough of Hillingdon

hs2
 Registered in England. Registration number 06791686.
 Registered office: 2 Snowhill, Queensway,
 Birmingham B4 6GA.

Scale at A3: 1:10,000

© Crown copyright and database rights 2020.
 Ordnance Survey Licence Number 100049190.


Doc Number: **Date:** 08/12/20



- Legend**
- Diffusion Tube
 - District Borough Unitary Boundaries

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community


Map Number	
Map Name	Monitoring Locations In LBH (Sheet 3)
London Borough of Hillingdon	



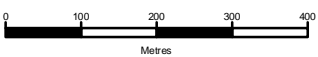
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

© Crown copyright and database rights 2020.
Ordnance Survey Licence Number 100049190.

Doc Number:

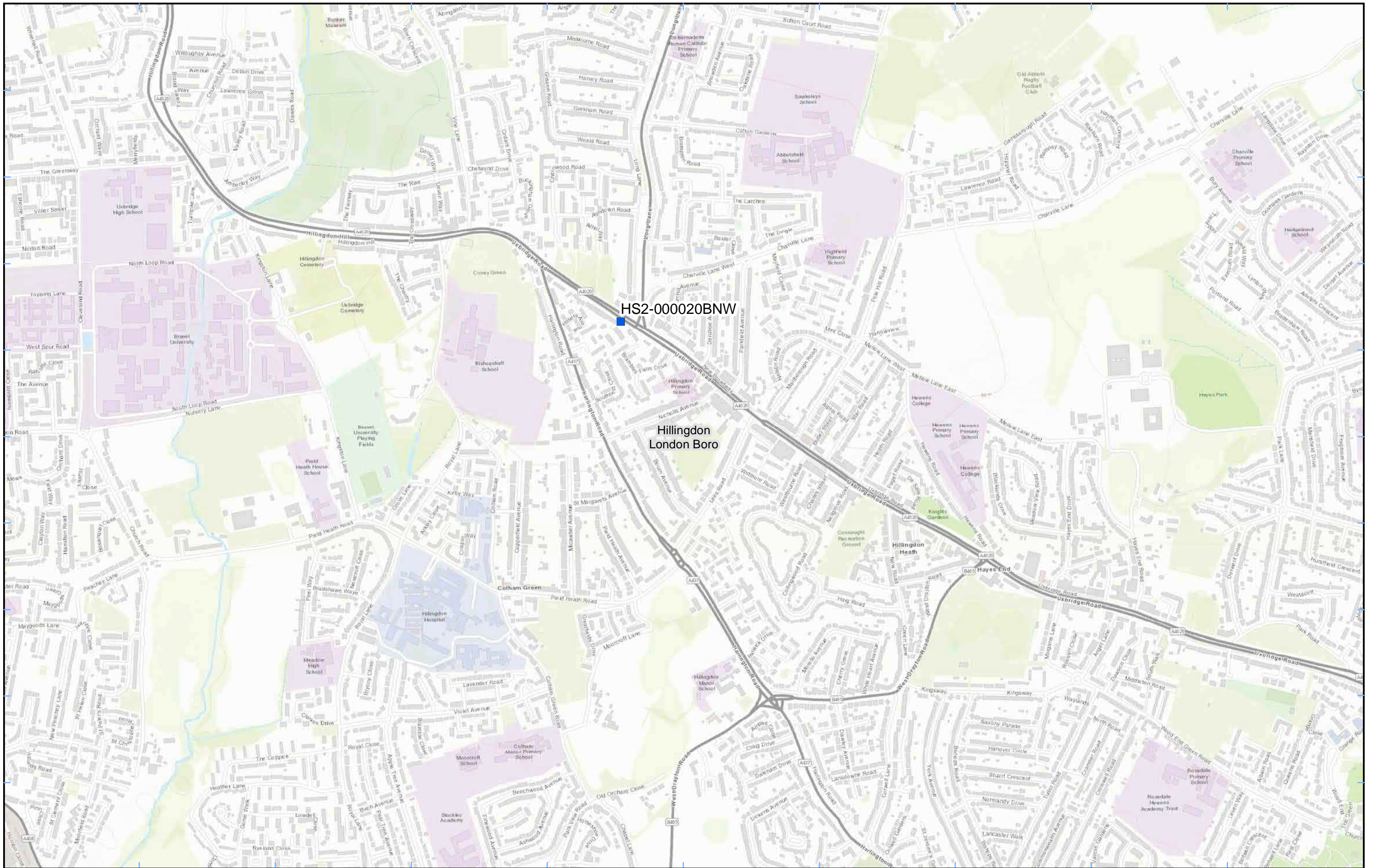


Scale at A3: 1:10,000



Metres


Date: 08/12/20



- Legend**
- Diffusion Tube
 - District Borough Unitary Boundaries

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community


Map Number	
Map Name	Monitoring Locations In LBH (Sheet 4)
London Borough of Hillingdon	



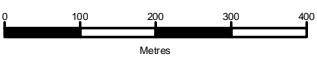
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway,
Birmingham B4 6GA.

© Crown copyright and database rights 2020.
Ordnance Survey Licence Number 100049190.

Doc Number:



Scale at A3: 1:10,000



Metres

Date: 08/12/20

Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and November 2022 Results

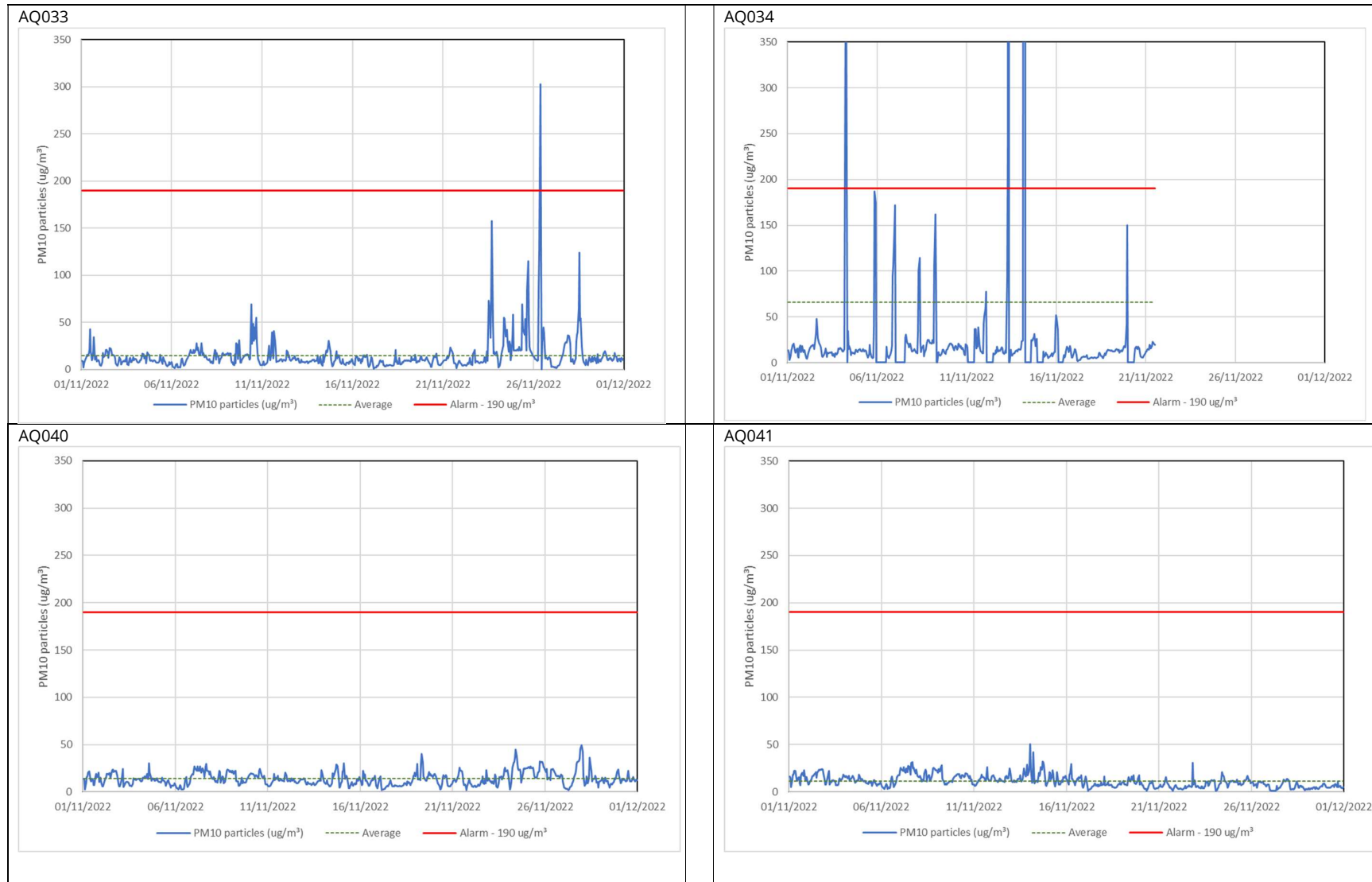
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	14.7	0.7	302.5	1	99.9
AQ034	506608, 187592	Copthall Cutting	L	Yes	N	66.2	1.9	6527.9	8	57.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	14.0	1.7	49.3	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	11.2	0.8	50.4	0	100.0
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	12.3	1.1	35.7	0	100.0
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	12.0	1.3	43.9	0	100.0
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	9.9	0.7	32.7	0	100.0
AQ050	506531, 187865	Copthall South Compound	H	Yes	N	11.8	0.8	46.6	0	78.4
AQ052	506433, 186725	Southern Sustainable Placement Area	H	Yes	N	10.4	0.7	49.2	0	85.4

Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ053	506811, 186643	Southern Sustainable Placement Area	H	Yes	N	12.9	2.7	21.0	0	7.8
CVV-AQMP3	504773, 188419	Moorhall Road	M	Yes	Y	8.9	1.0	65.0	0	80
CVV-AQMP4	505589, 187793	Dews Lane	M	Yes	Y	8.0	1.0	48.0	0	100
DGT-AQMP	506124, 188025	Harvil Road.	M	Yes	Y	8.2	1.0	44.0	0	100
CVV-AQMP6	504321, 188835	Korda Lake Compound	M	Yes	Y	7.3	1.0	28.0	0	34

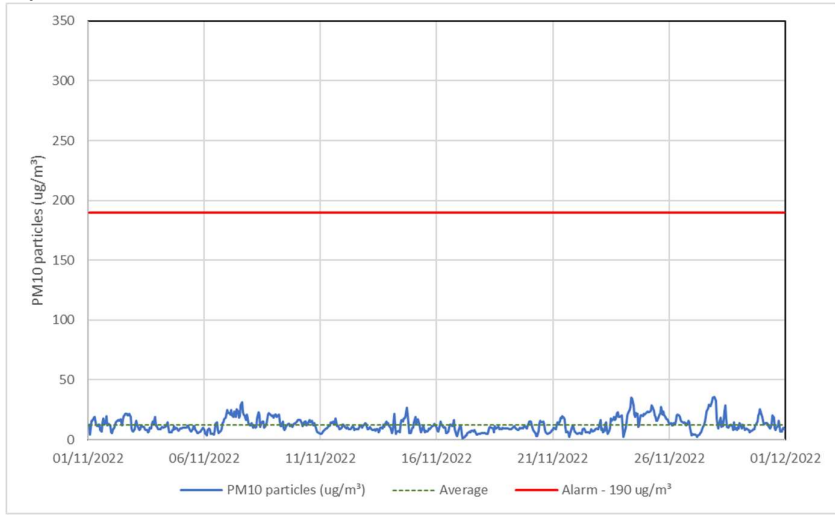
Table 2: Summary of exceedances of trigger level in November 2022

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	04/11/2022 04:01 – 05:00; 218.7 µg/m ³ 05:01 – 06:00; 385.6 µg/m ³ 06:01 – 07:00; 419.9 µg/m ³	The triggers were received during the early hours of the morning before site works started and were due to reduced power to the monitor, not dust. This monitor is powered by solar panels / wind turbine and the power generated is sometimes insufficient during the winter months. As the power drops, the pump slows and heater powers down, sending false readings. The monitors sometimes send a false reading when they power back up also.	The proposal is to transfer the monitor temporarily over to a small hydrogen generator for the winter months to provide a more reliable power source.
AQ034	13/11/2022 06:01 – 07:00; 234.5 µg/m ³ 07:01 – 08:00; 4807.3 µg/m ³		
AQ034	14/11/2022 03:01 – 04:00; 1010.4 µg/m ³ 04:01 – 05:00; 6274.6 µg/m ³ 05:01 – 06:00; 6527.9 µg/m ³		
AQ033	26/11/2022 08:01 – 09:00; 302.5 µg/m ³	The trigger was due to power loss to the monitor during the morning (restored in the afternoon) and a trigger sent as the pump / heater ran out of power giving a false reading.	n/a

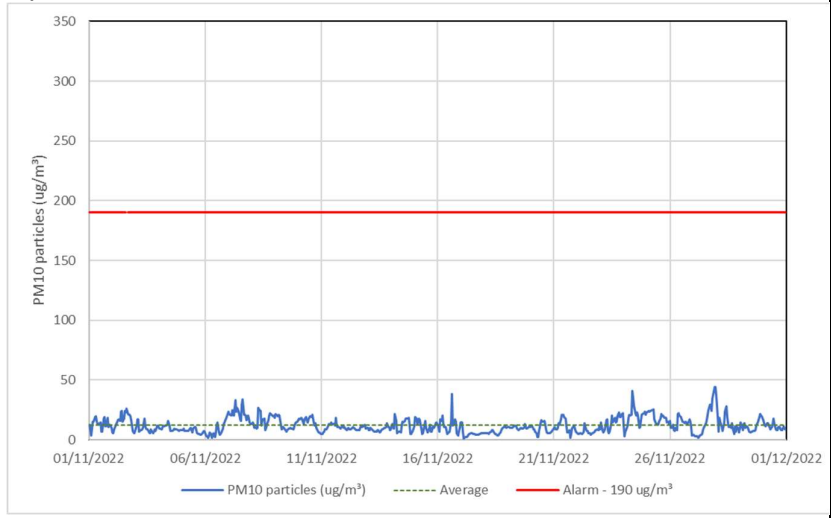
Figure 5: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors



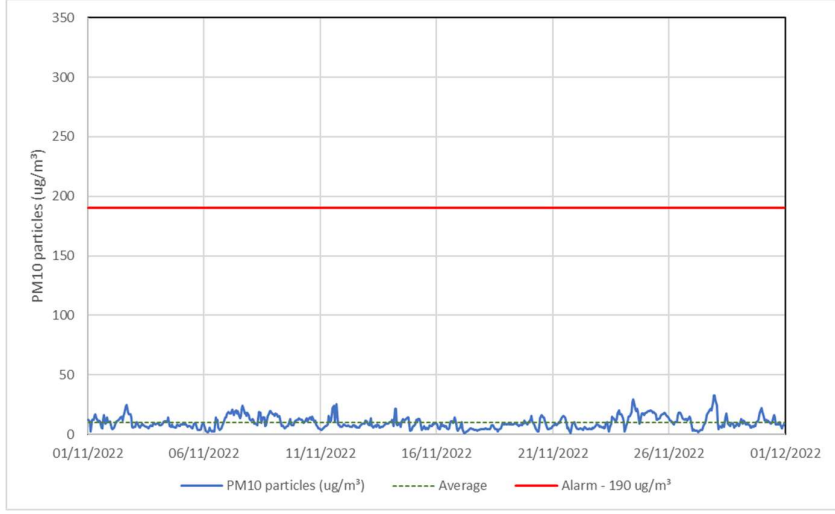
AQ047



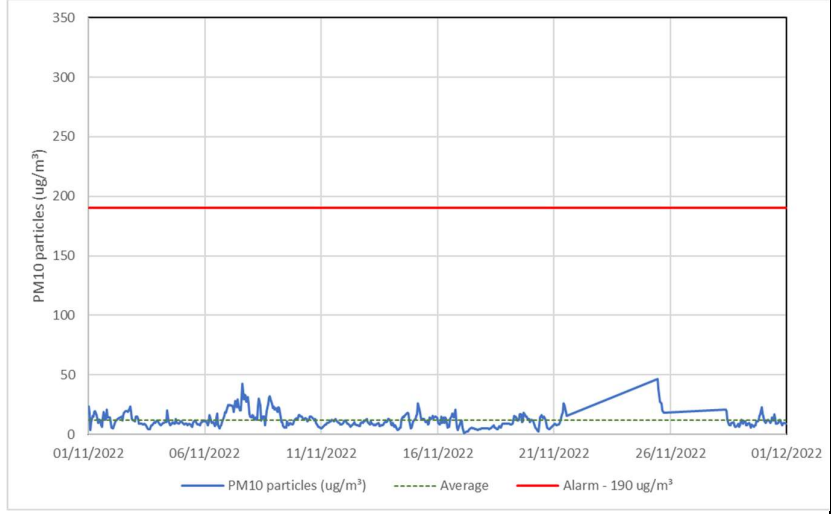
AQ048



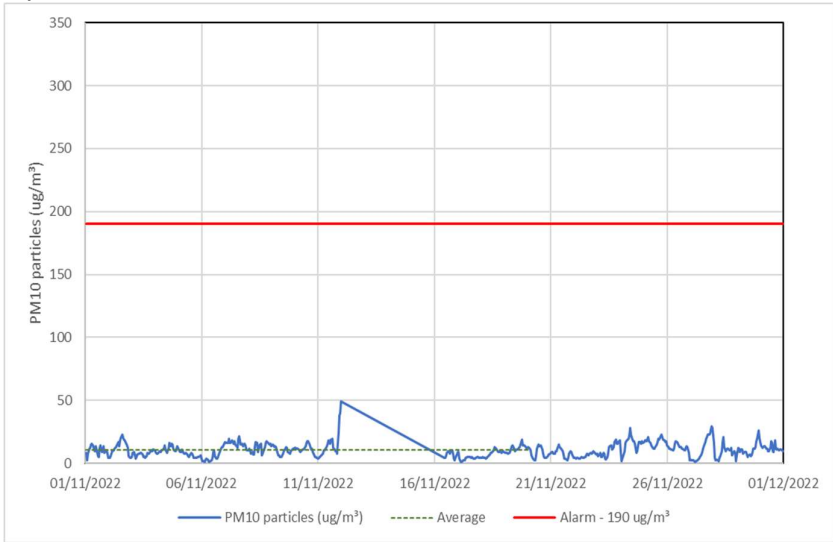
AQ049



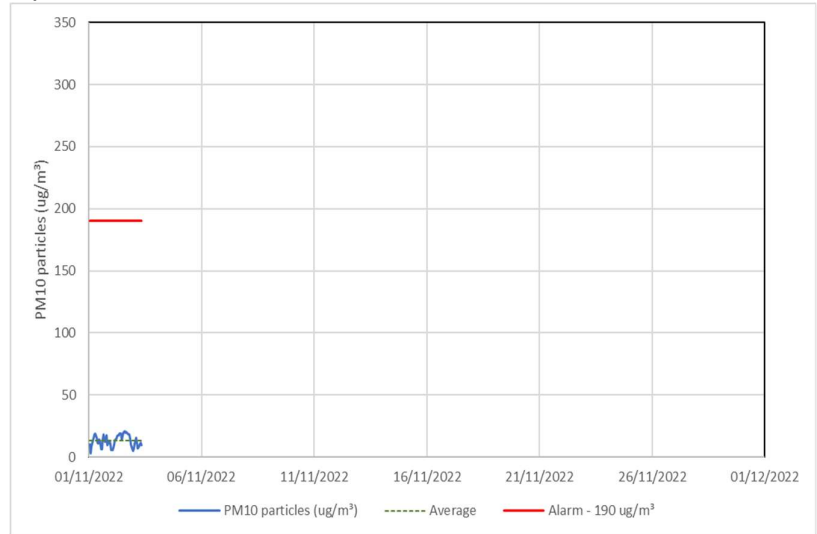
AQ050



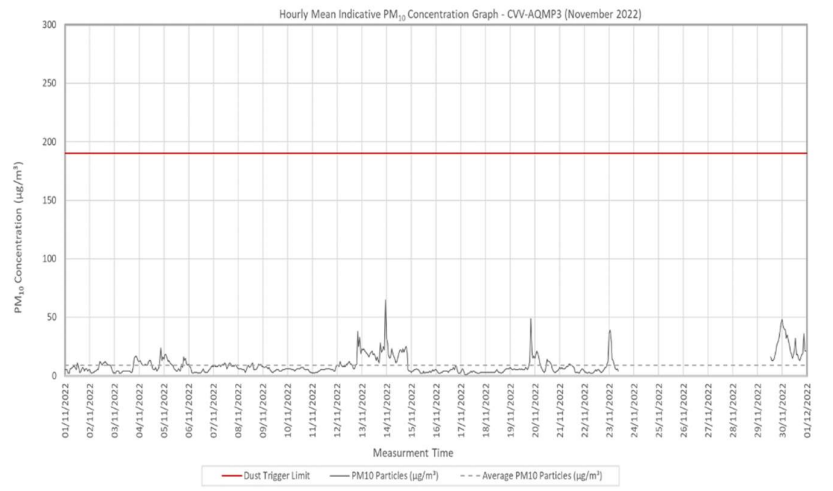
AQ052



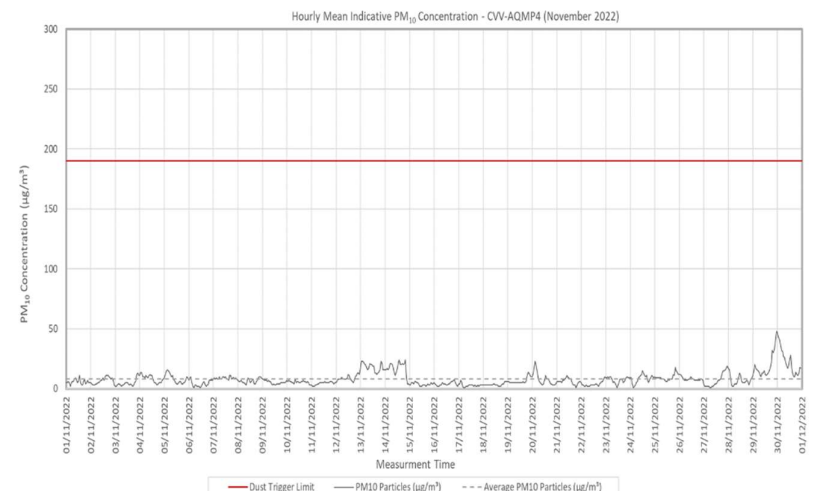
AQ053



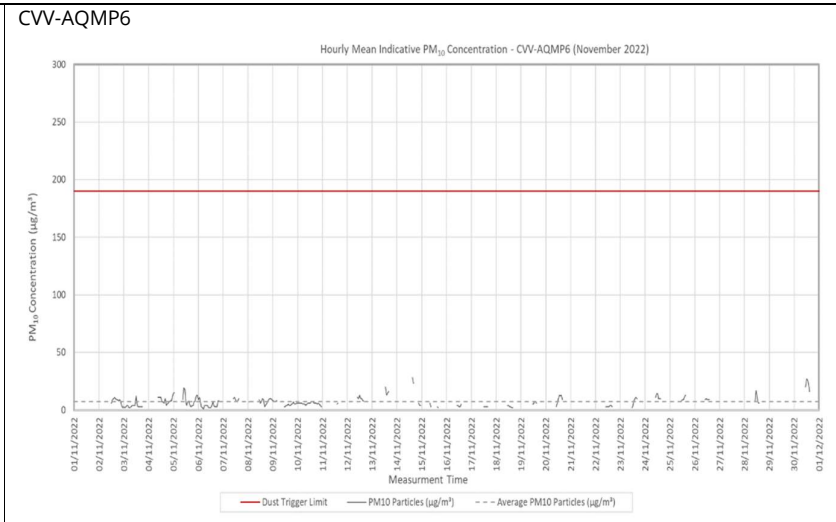
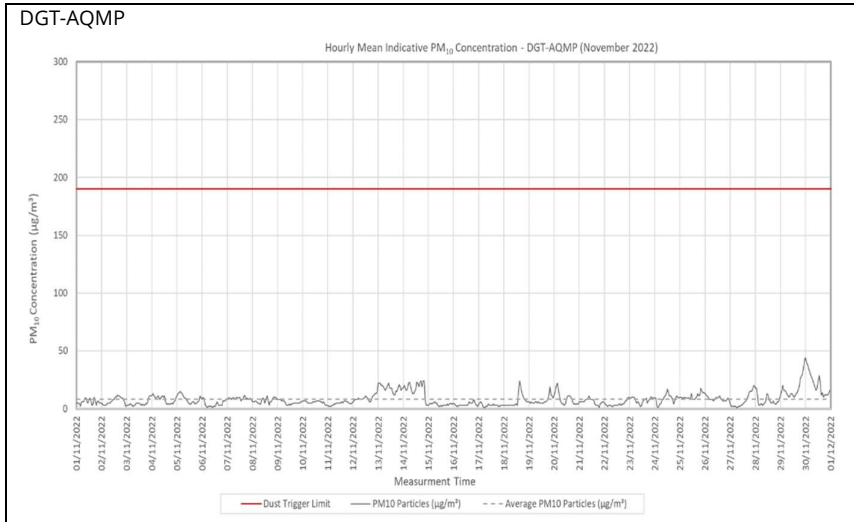
CVV-AQMP3



CVV-AQMP4



Air Quality and Dust Monitoring Summary Report, November 2022
 London Borough of Hillingdon



Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2022 (µg/m³)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	39	25	33	19	16	Tube Missing	13	17	23	26			23
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	60	47	49	41	36	39	39	40	44	46			44
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	51	Tube Missing	48	35	27	28	35	36	40	42			38
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	53	29	60	41	28	33	36	47	48	44			42
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	46	30	40	33	27	25	29	34	37	32			33
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40	37	28	31	33	33	28	Tube Missing	45			36

¹ 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 Summary Report, November 2022
 London Borough of Hillingdon

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BPN	Lamp post on B467	506767, 186224	47	34	43	30	Tube Missing	19	29	28	36	38			34
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	61	41	40	Tube Missing	No data	No Access	43	40	47	Tube Missing			45
HS2-000020BQN	Lamp post on Park Road	506176, 185444	53	36	56	40	No data	33	36	38	47	36			37
HS2-000020BQP	Sign post on Long Lane	507614, 184663	50	36	56	37	32	33	36	40	43	42			41
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	42	32	45	33	27	26	31	32	33	34			33