HS2

December 2020

Air Quality and Dust Monitoring Monthly Report – December 2020

London Borough of Hillingdon

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Department for Transport

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

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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 November and December 2020 respectively.

1.1.2 Figure 1 to Figure 5 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 which commenced within the LBH in May 2018 and are expected to be completed in early 2021. The next phase of construction 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 5, include:

- Gatemead Embankment, Breakspear Road South and River Pinn Underbridge site set up and haul road creation;
- Utility diversions, haul road creation and groundworks at Copthall North and Copthall South;
- West Ruislip Portal haul road creation and groundworks and utilities works;
- South Ruislip, site set up and ground works;
- Northern Sustainable Placement Area (NSPA) site mobilisation, set- up and archaeological dig; and
- Southern Sustainable Placement Area (SSPA) site mobilisation, set- up and archaeological dig.

1.1.5 The Colne Valley Viaduct (CVV) and Dews Lane worksites also fall within the administrative boundary of LBH. The Dews Lane phase of works commenced in July 2017 and is expected to be completed by the end of April 2021. The current phase of works at the CVV South Moorhall Road worksite commenced within LBH in September 2020 and is ongoing. Activities for each worksite within December 2020, as presented in Appendix A, Figure 1 to Figure 5, include:

Dews Lane site:

- HOAC Compound: preparation works; and
- ground investigation and overwater ground investigation works.

CVV South Moorhall Road worksite:

- North Moorhall Road Junction preparation and main works;
- ground investigation works; and
- overwater ground investigation works.

1.1.6 Six (6) dust monitors are installed around worksites, where demolition, earthworks, construction and trackout activities are underway. The sites returned a low to medium dust risk rating.

1.1.7 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 6. 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.

1.1.8 The trigger level for PM_{10} concentrations of 190 µg/m^3, 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.

1.1.9 There were dust trigger alerts recorded during the monitoring period (December 2020) – during site closure over the festive period, therefore not believed to be liked to HS2 activities. Triggers are presented in Appendix B, Table 2. All other results were in line with expected ranges.

1.1.10 Data capture for monitor HOAC-AQMP1-HC and CVV-AQMP1-HC was below 90% for the month of December 2020 due to loss of power to the monitors. CVV-AQMP1-HC lost solar and battery power due to the lack of sunlight.

1.1.11 Diffusion tube monitoring of Nitrogen Dioxide (NO_2) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects may occur as a result of the scheme.

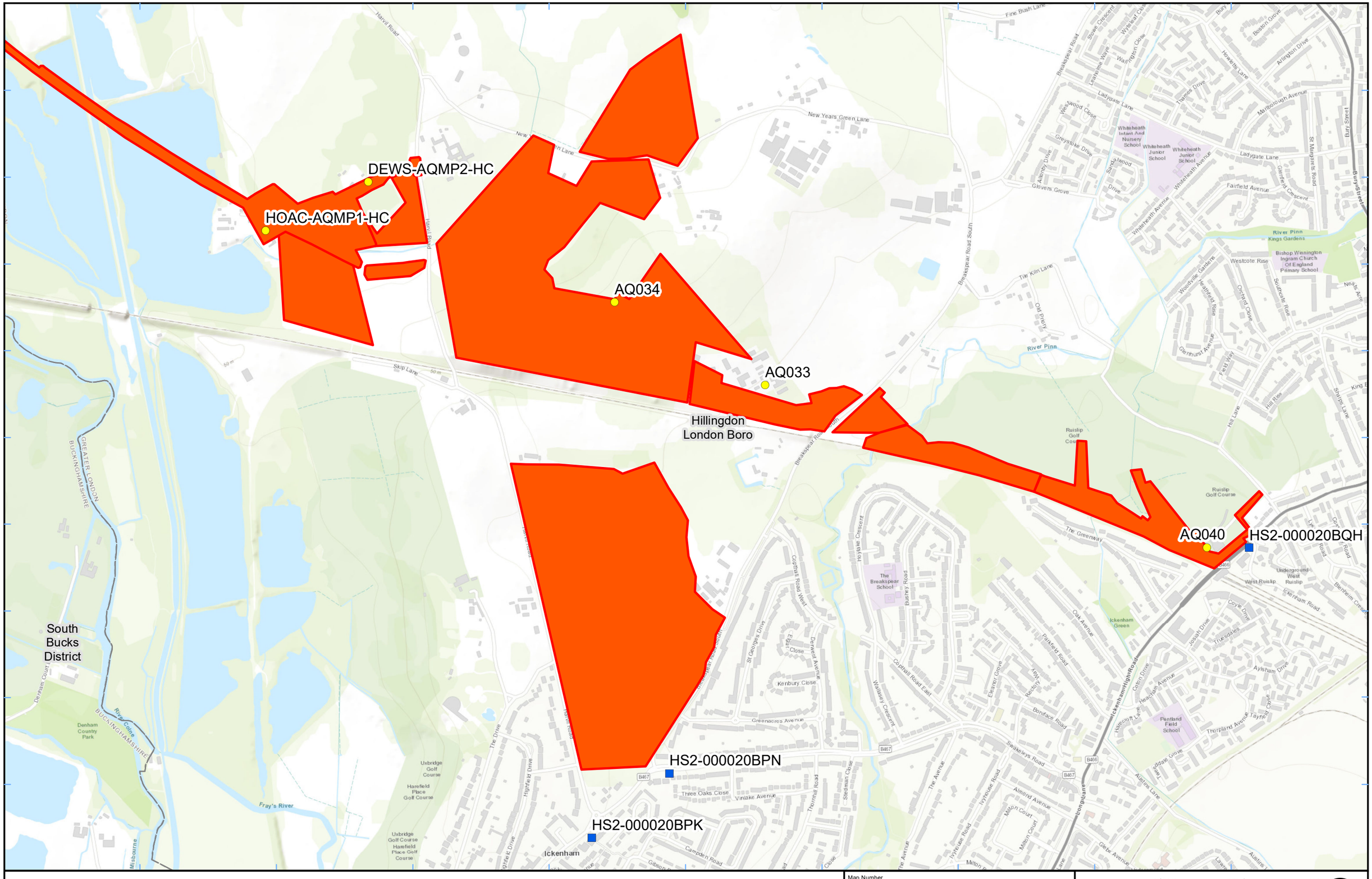
1.1.12 Diffusion tube monitoring results are provided from the laboratory analysis, and therefore still require various analysis and adjustments to be undertaken. Final corrected results will be presented and described in the annual report. However, based on the results to date, no unexpected values were recorded during the monitoring period.

1.1.13 NO_2 monitoring locations and results are presented in Appendix C, Table 3, together with the 2020 running mean.

1.1.14 There were no (0) complaints received, relating to air quality, during this reporting period (December 2020).

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 5: Current monitoring locations within the LBH



Legend

- Diffusion Tube
- Dust Monitor
- Worksite
- District Borough Unitary Boundaries

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Map Number

Map Name

Worksite and Monitoring Locations In LBH (Sheet 1)

London Borough of Hillingdon

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Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number:

Date: 27/01/21

HS2-000020BNT

HS2-000020BNV

HS2-000020BP8

Harrow
London Boro

Hillingdon
London
Boro

Ealing
London
Boro

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

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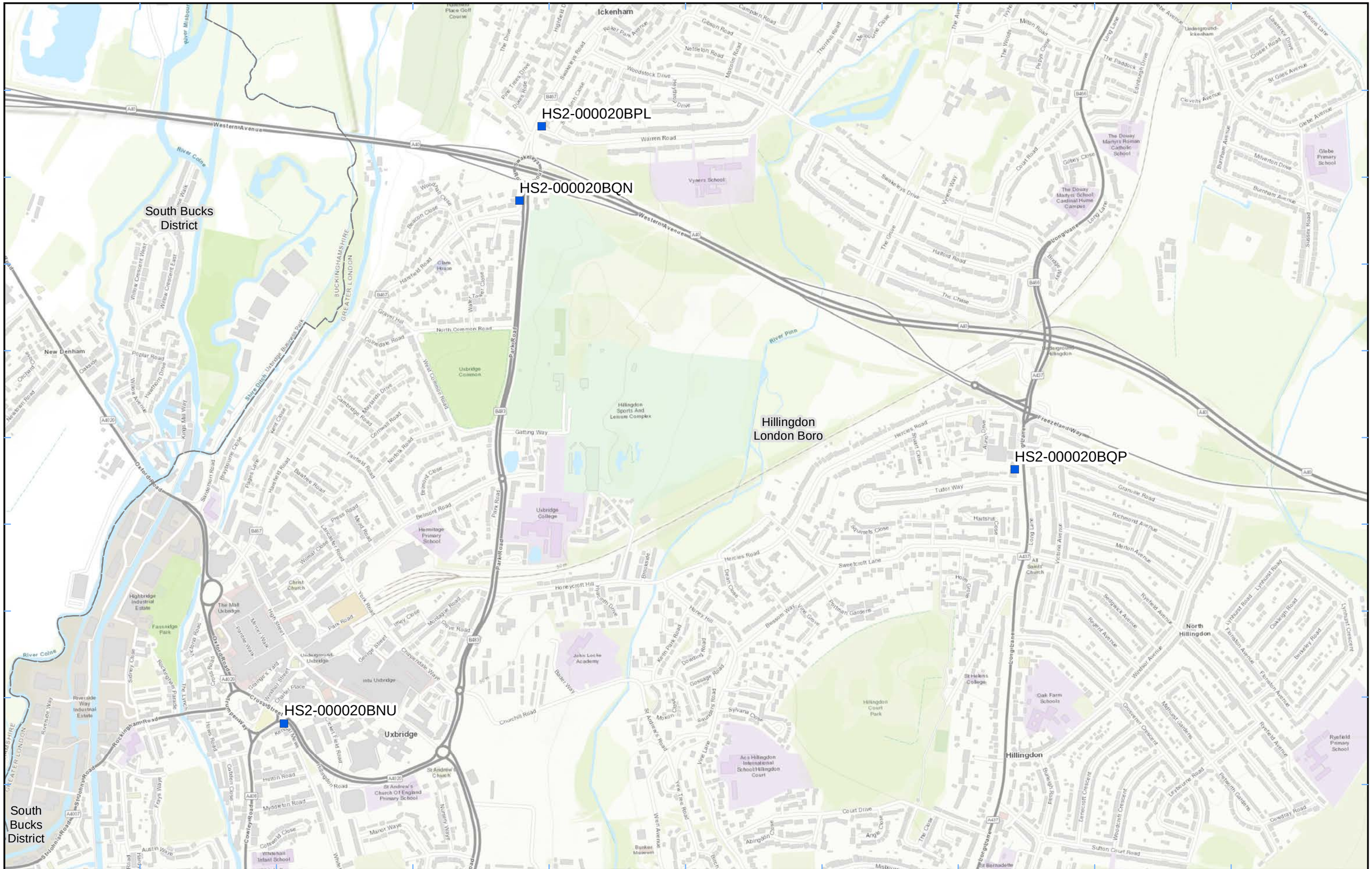
Metres

Doc Number:

Date: 08/12/20



Legend

- Diffusion Tube
- District Borough Unitary Boundaries

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Map Number

Map Name

Monitoring Locations In LBH (Sheet 3)

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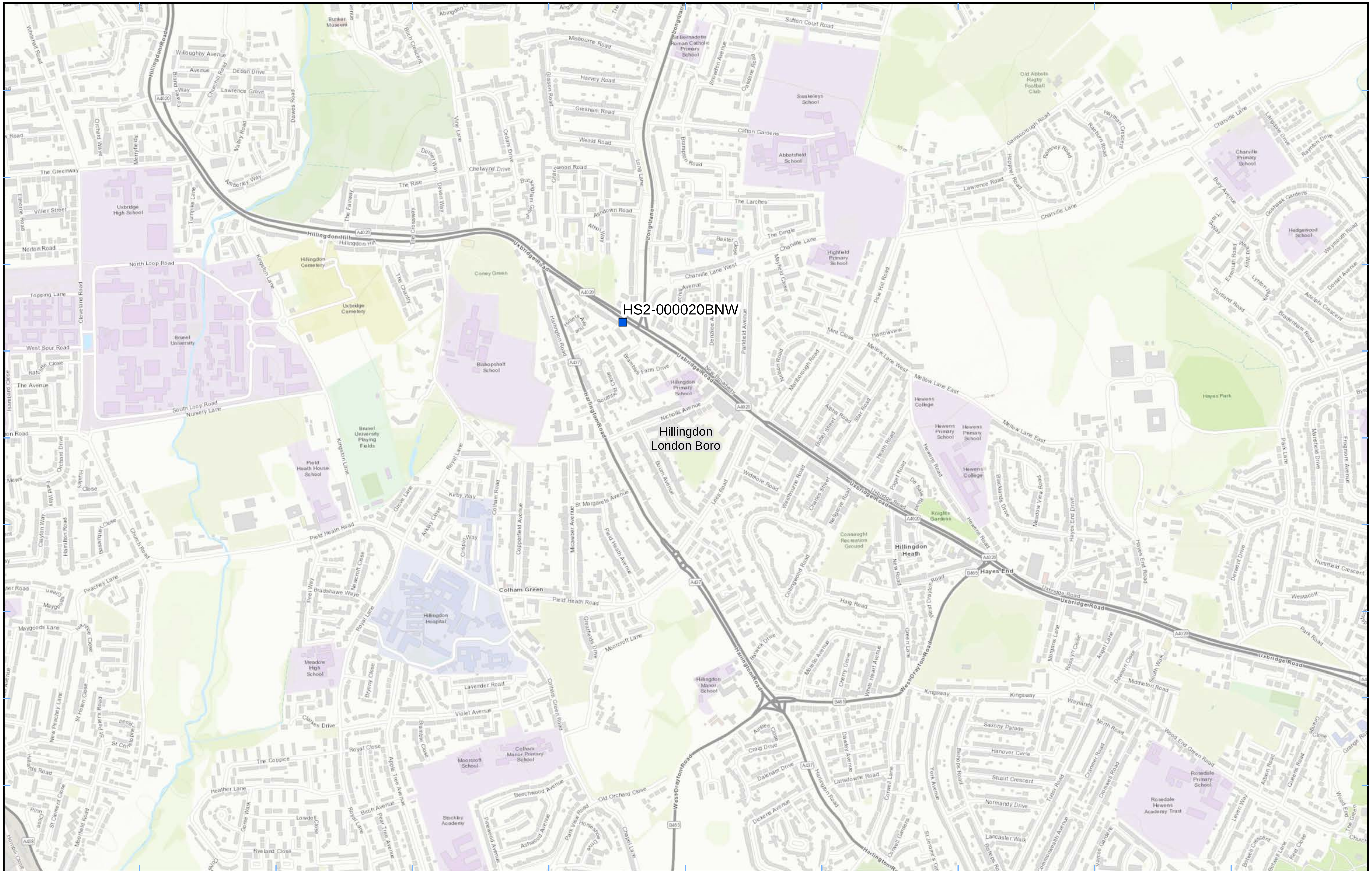
Metres

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 4)

London Borough of Hillingdon

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Scale at A3: 1:10,000

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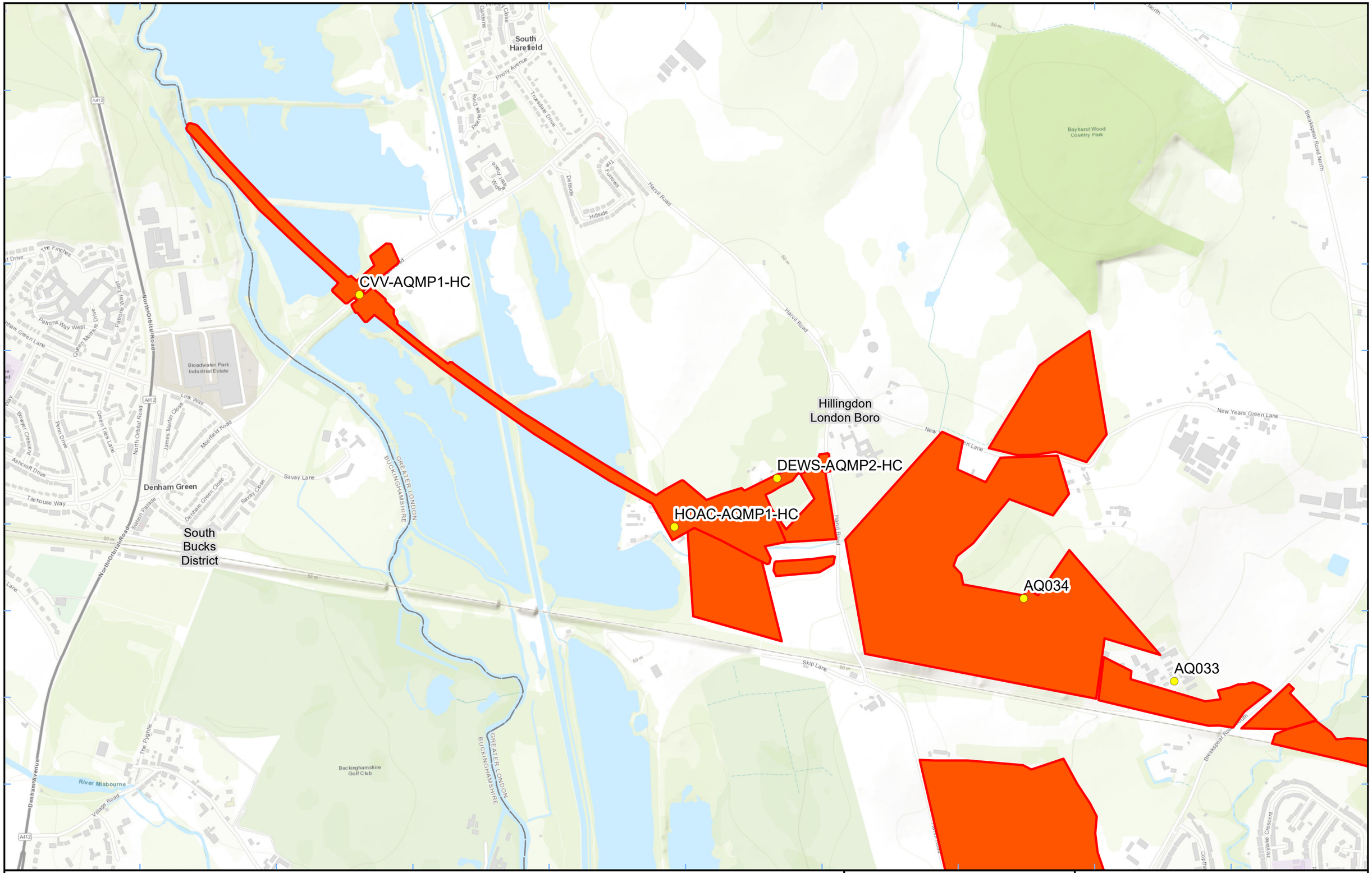
Doc Number:

Date: 08/12/20



Legend

Dust Monitor
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 5)

London Borough of Hillingdon

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

Scale at A3: 1:10,000

0 100 200 300 400
Metres

Doc Number:

Date: 27/01/21

Appendix B – Dust Monitoring Results

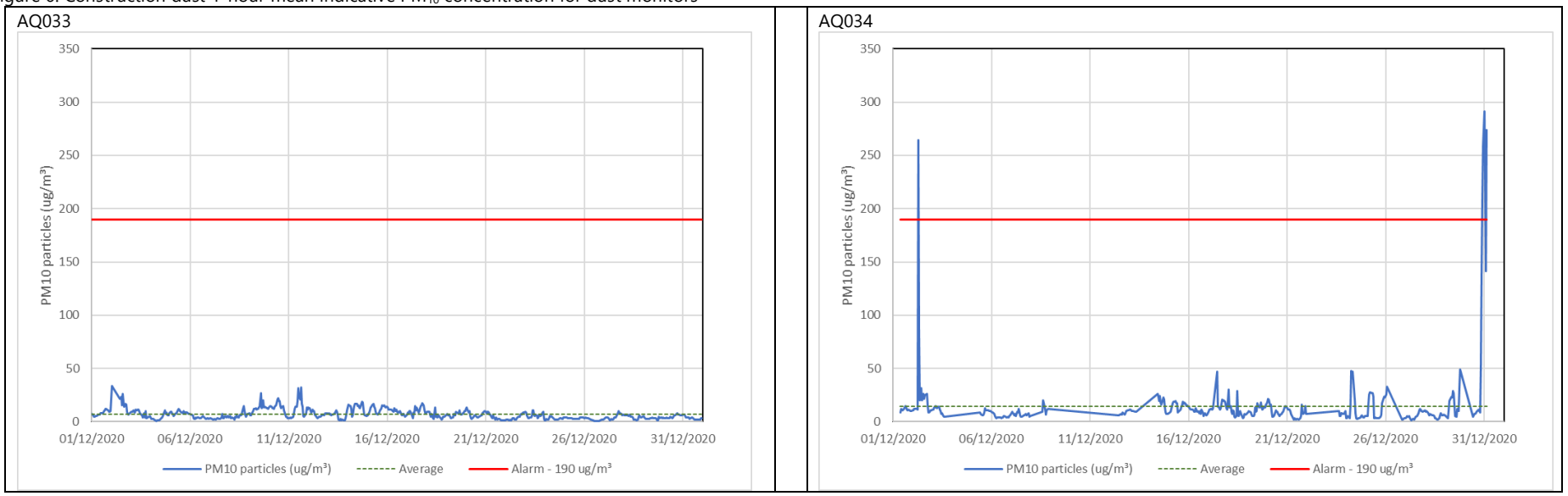
Table 1: Dust monitoring locations and December 2020 Results

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 ($\mu g/m^3$)	Minimum 1-hour PM_{10} concentration ($\mu g/m^3$)	Maximum 1-hour PM_{10} concentration ($\mu g/m^3$)	Number of 1- hour periods exceeding trigger level of 190 $\mu g/m^3$	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	6.9	0.6	33.3	0	98.9
AQ034	506608, 187592	Copthall Cutting	L	Yes	N	14.6	1.4	291.5	6	62.8
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	10.0	1	125.4	0	99.2
HOAC-AQMP1-HC	505594, 187801	On the western boundary of HOAC at Dews Lane	M	Yes	Yes	16.3	1.7	61.5	0	43.0
DEWS-AQMP2-HC	505892, 187942	Adjacent to Dew's Farm Cottages on Dews Lane.	M	Yes	Yes	10.1	1.2	168.6	0	100.0
CVV-AQMP1-HC	504679, 188475	On the roadworks boundary along north side of Moorhall Road	M	Yes	Yes	-	-	-	-	0.0

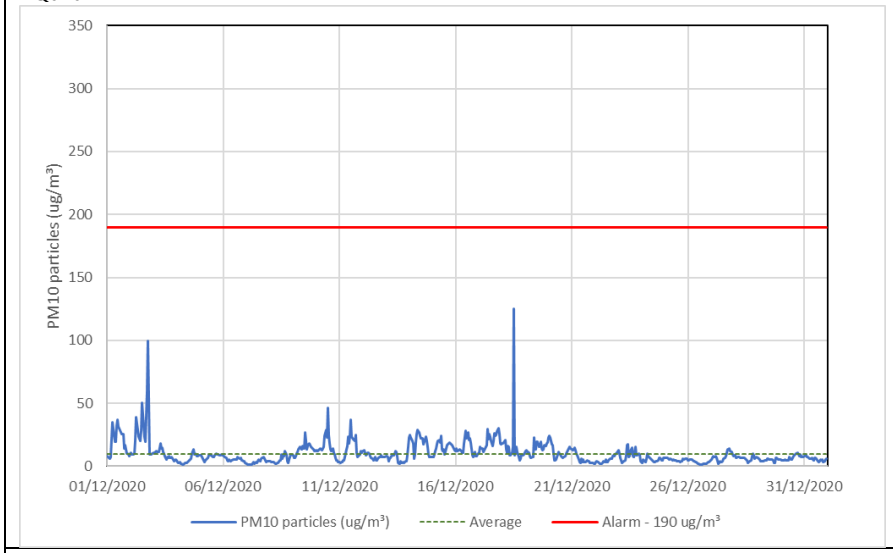
Table 2: Summary of exceedances of trigger level in December 2020

Monitoring Site ID		Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	02/12/2020 06:00 - 07:00: 264.2 µg/m³	Due to the site being closed on both occasions (night-time and early hours of the morning), inclement weather conditions during November/December and an intermittent power supply to the monitors from the solar panels and wind turbine; it is considered that the triggers were not associated with high dust levels on site. A lack of power to both the internal pump and heater meant a steady, dry air flow drawn through the monitor was not possible. Moisture within the monitor inlet which can cause false readings is considered to be the most likely cause of the triggers and has been evident in other monitors during the months of November and December.	The monitor is due its quarterly service and maintenance. An additional alternative supplementary power supply is to be considered during winter months if issue persists.
	30/12/2020 22:00-23:00: 208.3 µg/m³ 30/12/2020 23:00-00:00: 259 µg/m³ 31/12/2020 00:00-01:00: 291.5 µg/m³ 31/12/2020 01:00-02:00: 227.7 µg/m³ 31/12/2020 01:00-03:00: 273.7 µg/m³		

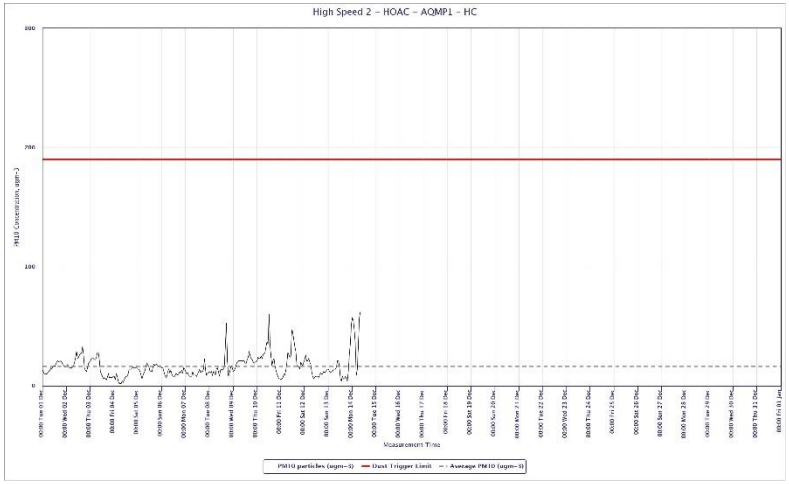
Figure 6: Construction dust 1-hour mean indicative PM_{10} concentration for dust monitors



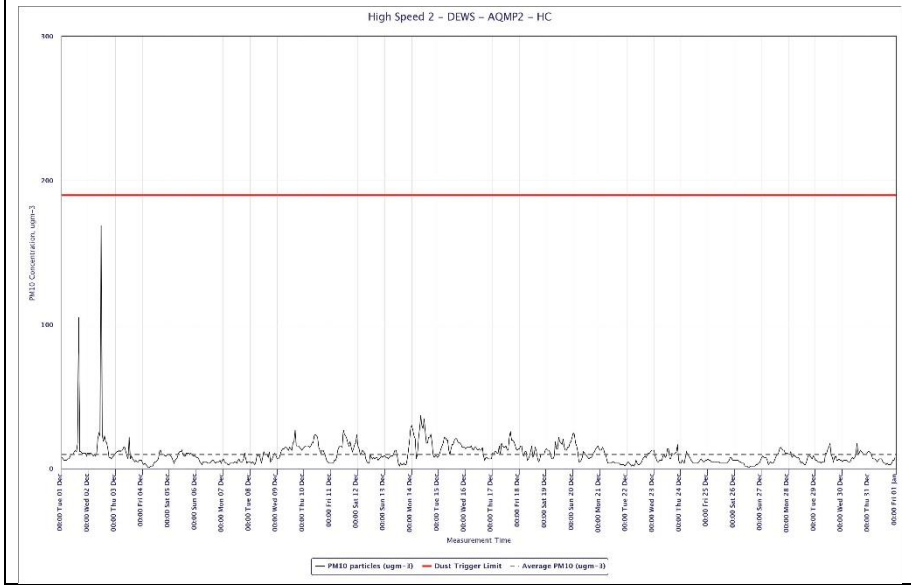
AQ040



HOAC–AQMP1-HC



DEWS-AQMP2-HC



Appendix C – Air Quality Monitoring Results

Table 3: NO_2 monitoring locations around highways, NO_2 concentrations and monthly monitoring results with running mean for 2020 (µg/m^3)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar[1]	Apr[1]	May[1]	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean[2]
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	35	26	No data			19	14	18	22	24	34		24
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	49	46	No data			33	31	33	37	37	51		40
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	45	33	No data			32	26	30	32	31	49		35
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	43	32	No data			35	22	36	36	35	53		37
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40	34	No data			27	28	29	35	31	42		33
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	51	40	No data			28	28	30	33	35	49		37
HS2-000020BPN	Lamp post on B467	506767, 186224	41	30	No data			24	21	Tube missing	30	29	38		31
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	44	37	No data			27	24	29	39	30	44		34

[1] *Note: Due to the Covid-19 pandemic and government lockdown it was not possible to conduct diffusion tube air quality monitoring in March, April and May 2020.*

[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.*

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar[1]	Apr[1]	May[1]	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean[2]
HS2-000020BQN	Lamp post on Park Road	506176, 185444	47	34	No data			34	26	35	39	36	Tube missing		36
HS2-000020BQP	Sign post on Long Lane	507614, 184663	45	33	No data			30	24	34	38	32	48		36
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39	32	No data			29	22	28	31	22	44		32