

Air Quality and Dust Monitoring Monthly Report – September 2021

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.

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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 August and September 2021 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 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 4, include:
- Gatemead Embankment, Breakspear Road South and River Pinn Underbridge groundworks and materials management;
 - Groundworks, piling and materials management at Copthall North and South;
 - West Ruislip Portal piling and groundworks and materials management;
 - South Ruislip ground works, piling operations and materials management;
 - Northern Sustainable Placement Area (NSPA) site mobilisation, set- up and groundworks; and
 - Southern Sustainable Placement Area (SSPA) site mobilisation and set- up.
- 1.1.5 The Clone Valley Viaduct (CVV), Dews Lane and CVV Moorhall Road worksites fall within the administrative boundary of the LBH. The Dews Lane phase of works commenced in July 2017 and are ongoing. Activities within September 2021 included:
- Jetty piling: piling plant, support plant, platform and compound;
 - HOAC Compound: compound operation and de-sanding compound;
 - Cofferdam Sheet Piling: piling plant and support plant;
 - Causeway Piling: sheet pile installation and support plant;
 - Permanent main piling works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pile break-down to prepare the pile surface, grout curtain around viaduct pile groups maintenance plant;
 - Construction of Harefield Compensation Pond;
 - Haul Route: civil works, earthworks, and drainage; and
 - Ground Investigation Works: GI works.
- 1.1.6 The current phase of works at the CVV Moorhall Road worksites commenced within LBH in September 2020 and is currently ongoing. Activities within September 2021 included:

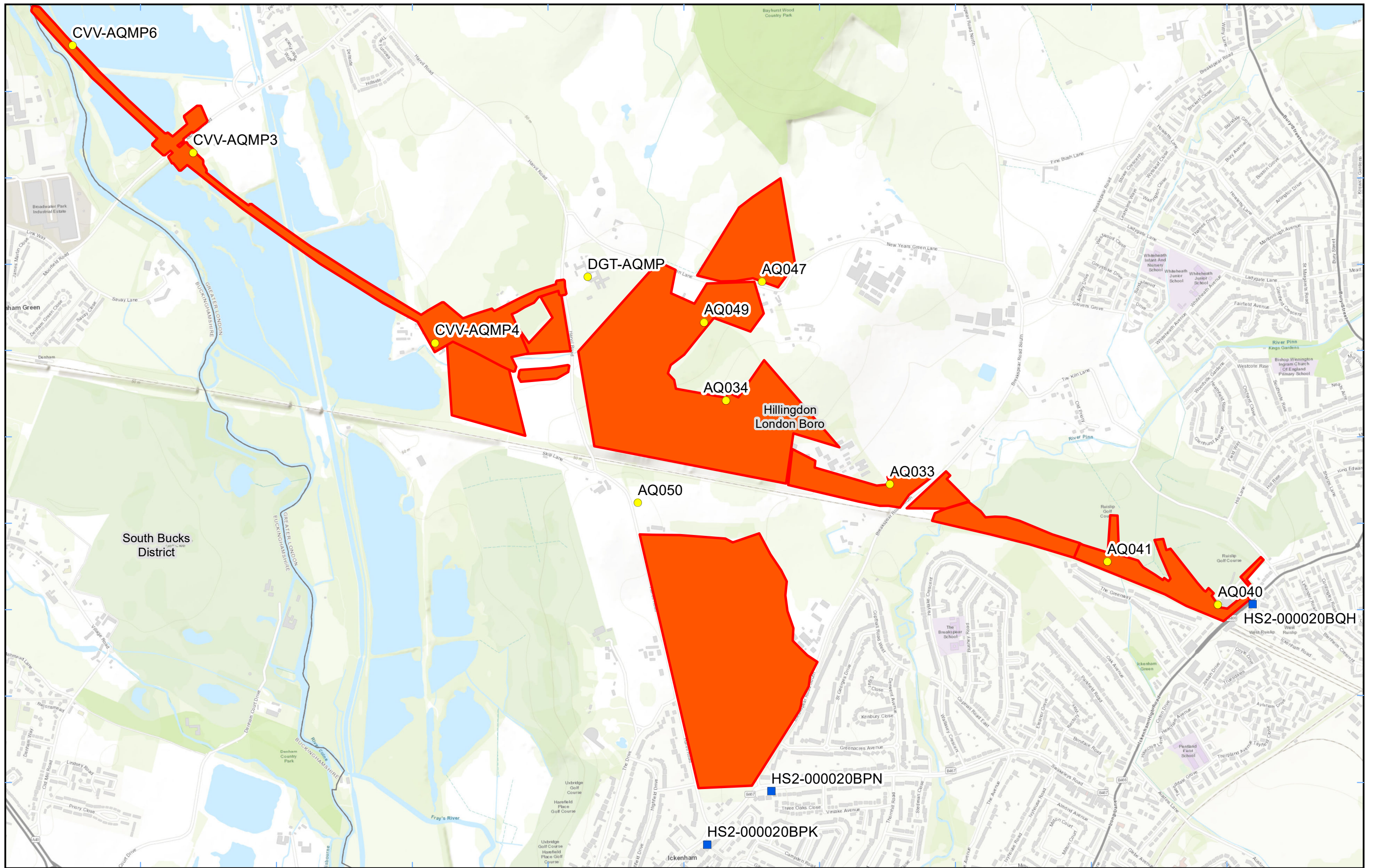
- Jetty piling: piling plant, support plant, platform and compound;
- South Moorhall road compound: compound operation and de-sanding compound;
- North Moorhall road compound: compound operation;
- Haul Route: civil works and earthworks and drainage;
- Ground Investigation Works: GI works;
- Causeway Piling: sheet pile installation and support plant;
- Cofferdam Sheet Piling: piling plant and support plant; and
- Permanent main piling works: boring pile, desanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pile break-down to prepare the pile surface, grout curtain around viaduct pile groups maintenance plant.

- 1.1.7 Eleven (11) dust monitors are installed around worksites, and three (3) more are due to be installed over the coming months. The sites returned a low to high dust risk rating.
- 1.1.8 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.
- 1.1.9 The trigger level for PM₁₀ concentrations of 190 µg/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.
- 1.1.10 There were dust trigger alerts recorded during the monitoring period (September 2021). Triggers are presented in Appendix B, Table 2. All other results were in line with the expected ranges.
- 1.1.11 Data capture for monitors AQ033 and AQ041, was below 90% for the month of September 2021 due to a loss of power to the monitor due to issues with the onsite generator, and issue with the wind turbine and solar panel respectively. Data capture for monitor CVV-AQMP3 was also below 90% due to the limited effectiveness of solar/wind power at monitoring locations and remote connection issues.
- 1.1.12 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 may occur as a result of the scheme.
- 1.1.13 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.

- 1.1.14 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2021 running mean.
- 1.1.15 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
 - Dust Monitor
 - District Borough Unitary Boundaries
 - Worksite

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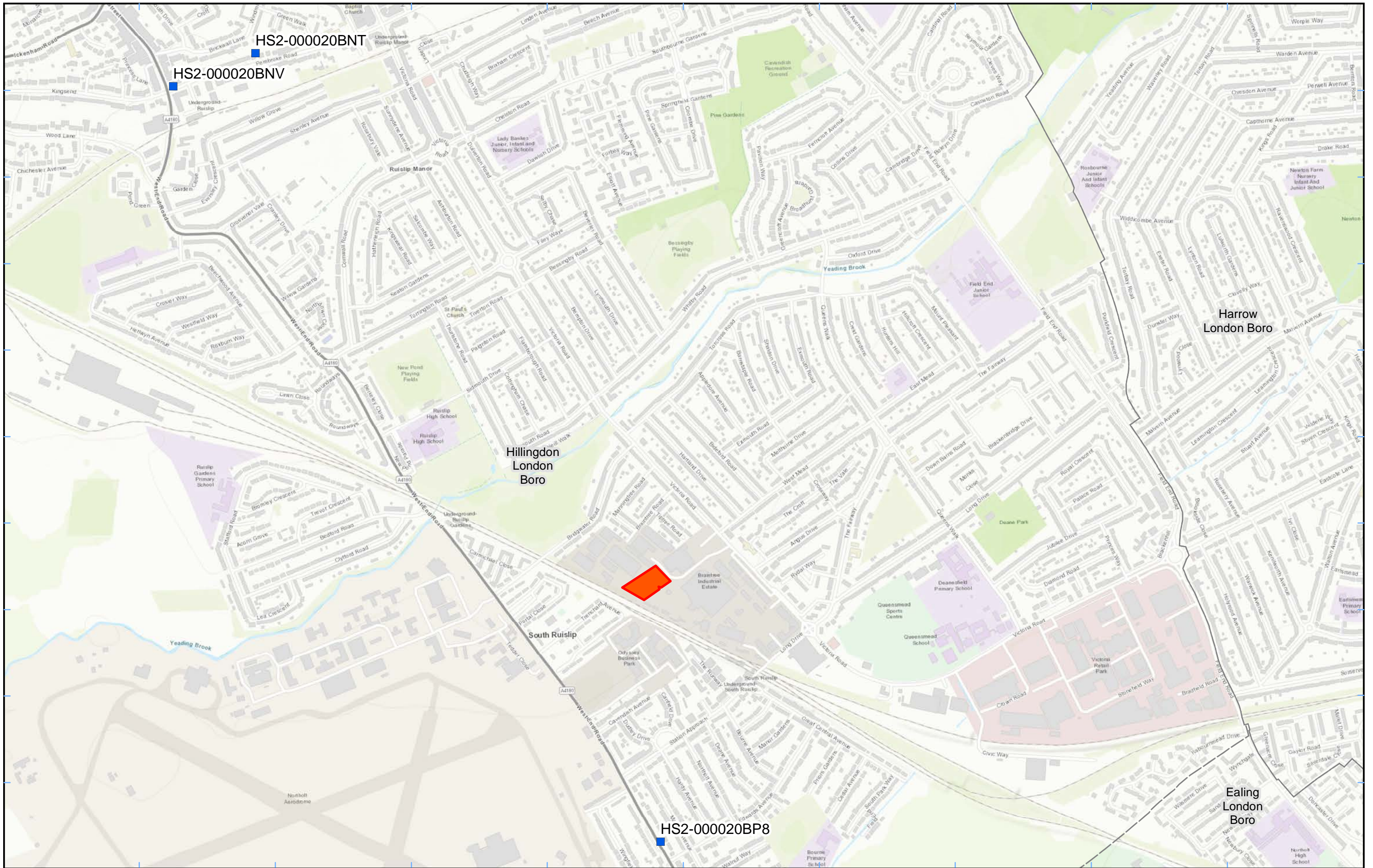
Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 1)**
 London Borough of Hillingdon

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0 120 240 360 480
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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

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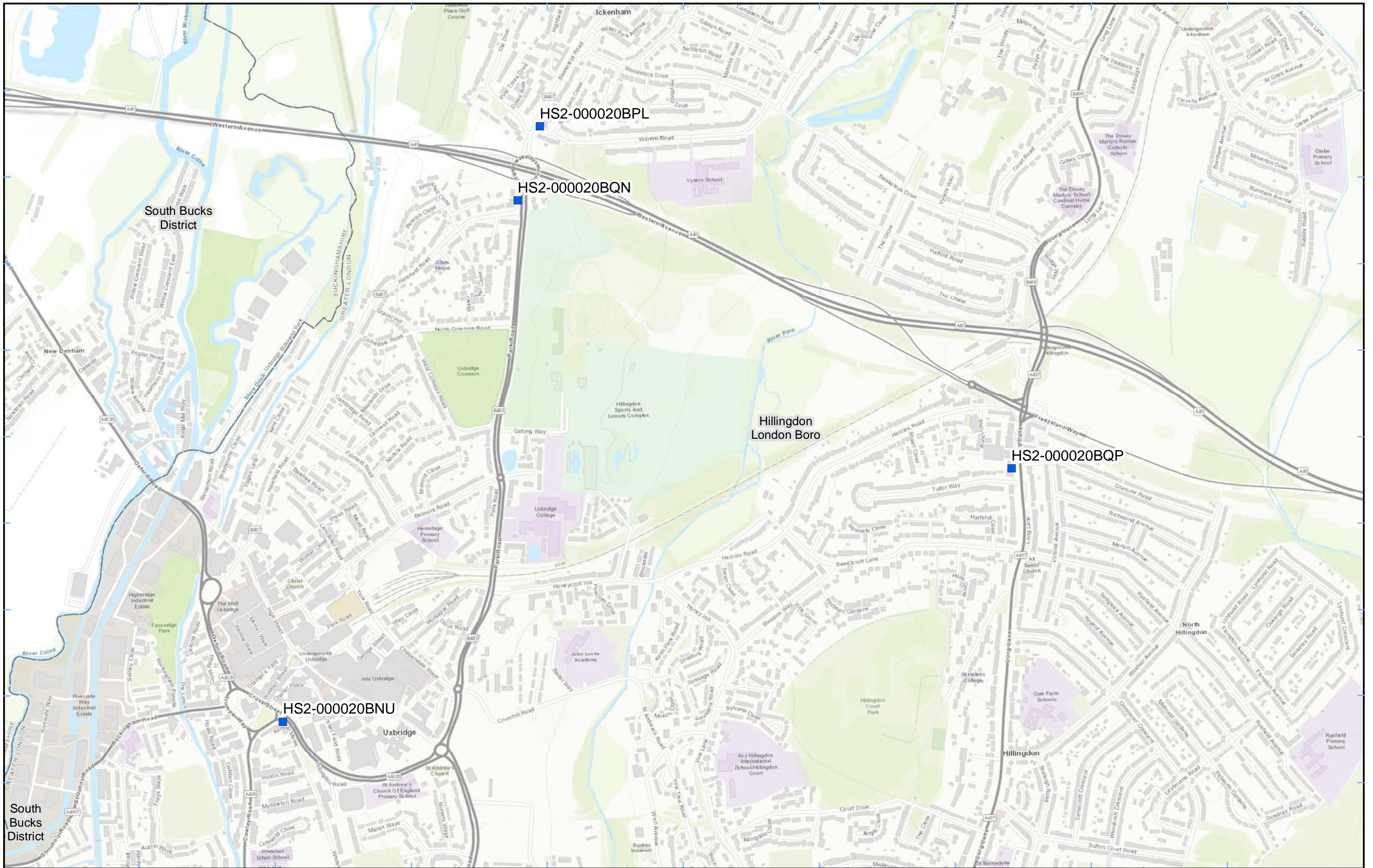
Map Number
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**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
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Legend
 ■ Diffusion Tube
 □ District Borough Unitary Boundaries

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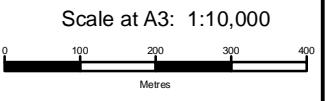
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Monitoring Locations In LBH (Sheet 3)
London Borough of Hillingdon



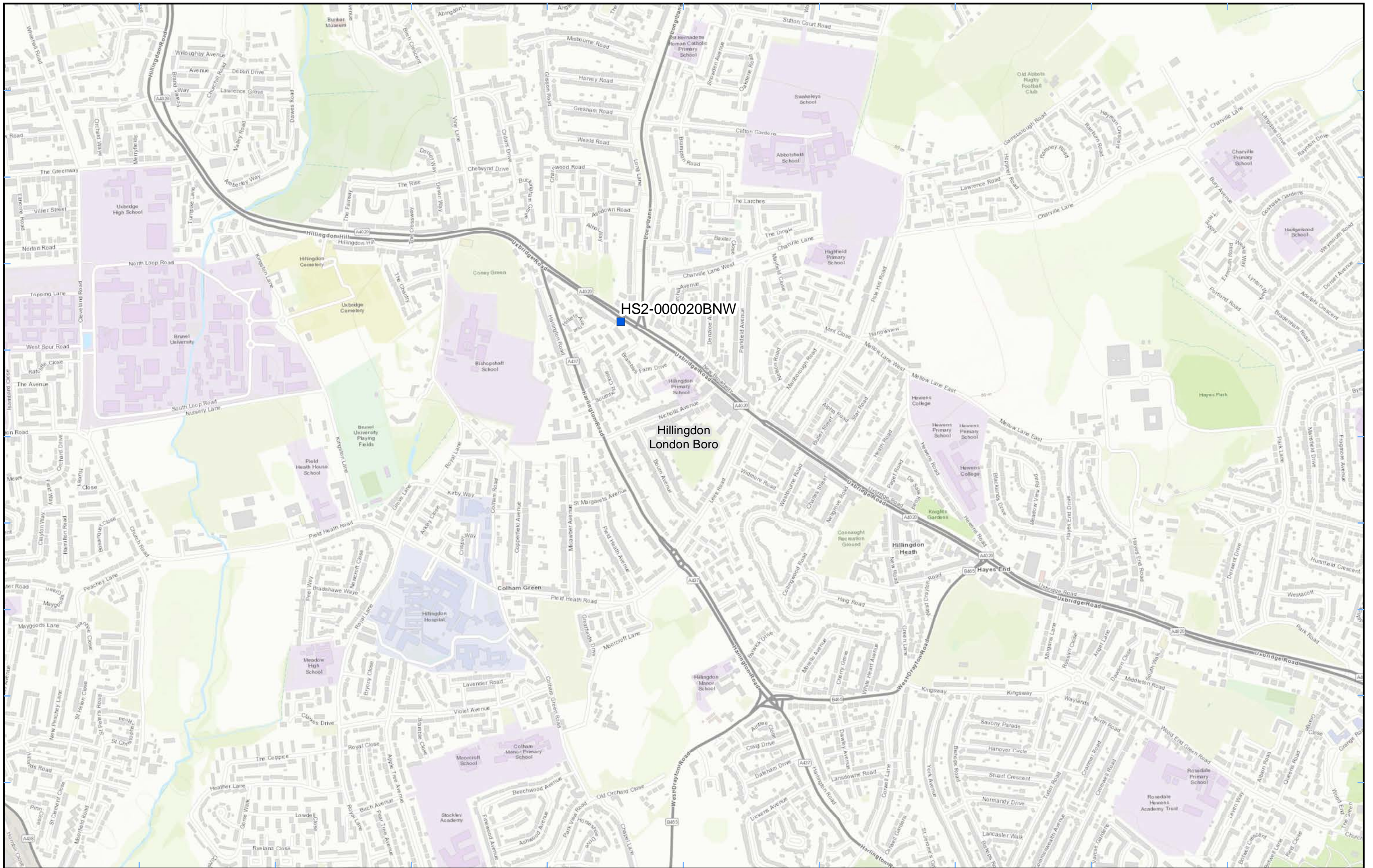
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Hillingdon
London Boro

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


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



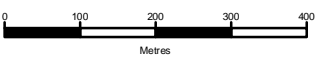
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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and September 2021 Results

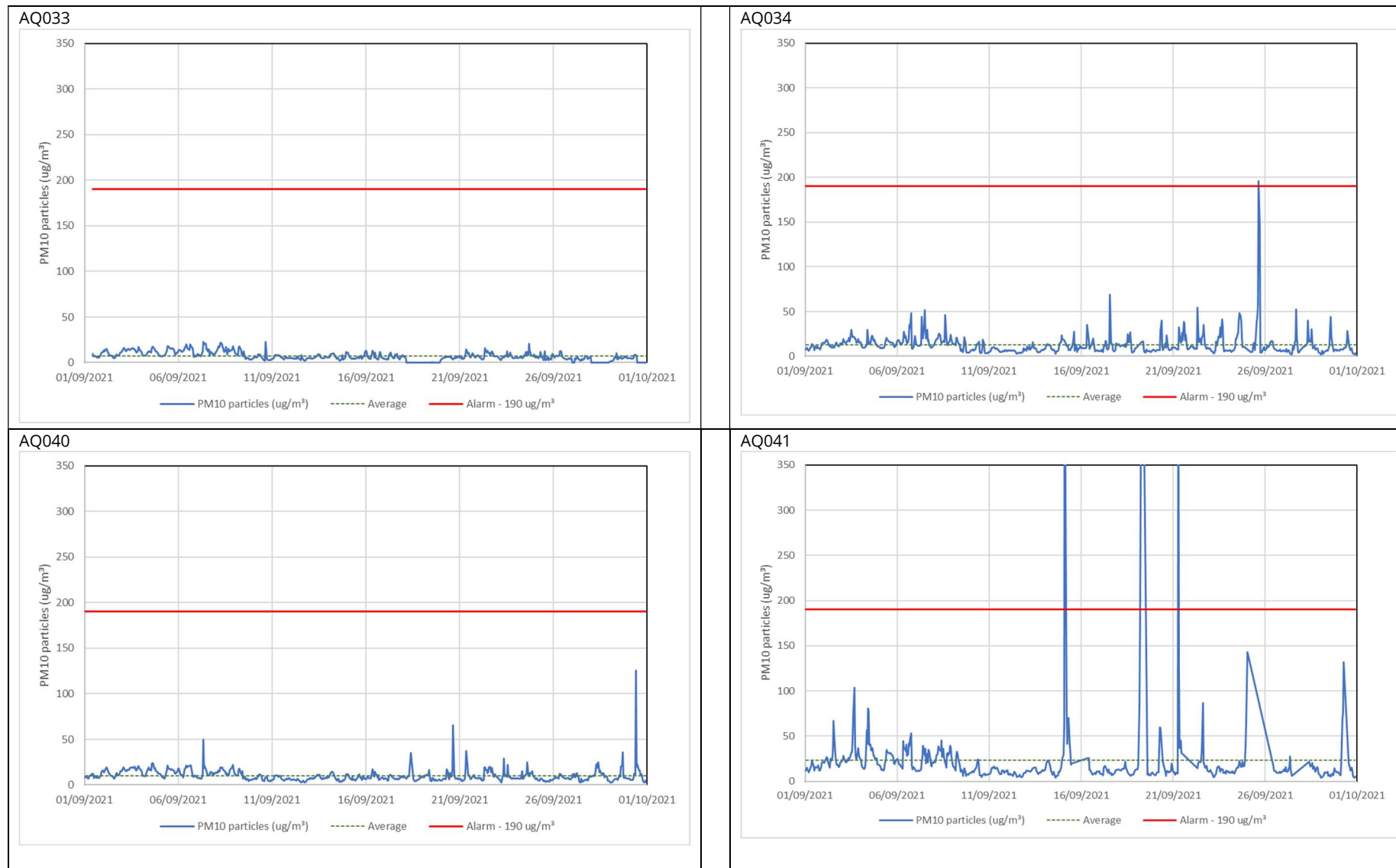
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	L	Yes	N	7.0	0.1	22.9	0	98.7
AQ034	506608, 187592	Copthall Cutting	M	Yes	N	12.9	2.1	196.1	1	100.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	10.3	2.4	125.4	0	99.7
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	23.4	3.9	875.2	6	84.8
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	15.1	3.6	299.9	1	100.0
AQ049	506531, 187865	Copthall North, Ancient Woodland	M	Yes	N	19.2	2.8	226.9	1	100.0
AQ050	506531, 187865	Copthall South Compound	M	Yes	N	13.0	2.4	63.7	0	100.0
CVW-AQMP3	504743, 188459	On the eastern boundary along south side of Moorhall Road	M	Yes	Yes	11.2	3.0	47.0	0	11.0
CVW-AQMP4	505589, 187793	On the western boundary of	M	Yes	Yes	10.4	1.0	61.0	0	100.0

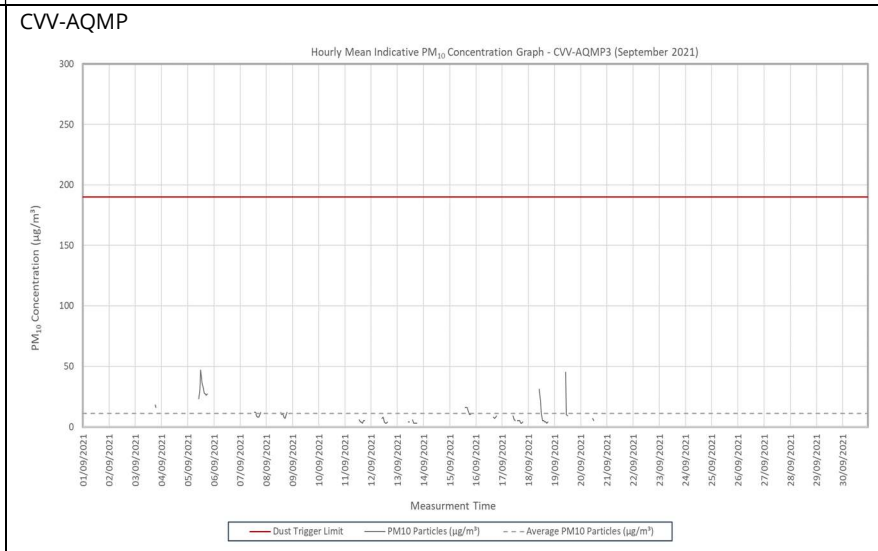
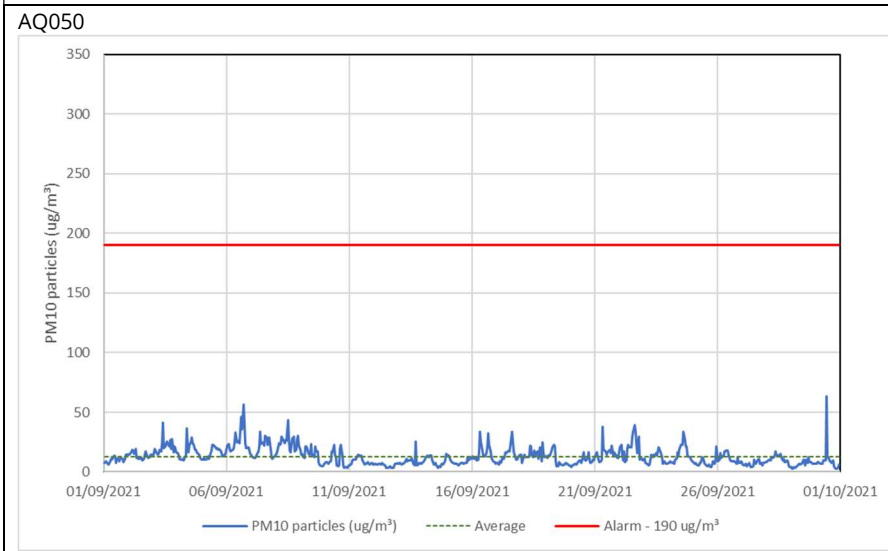
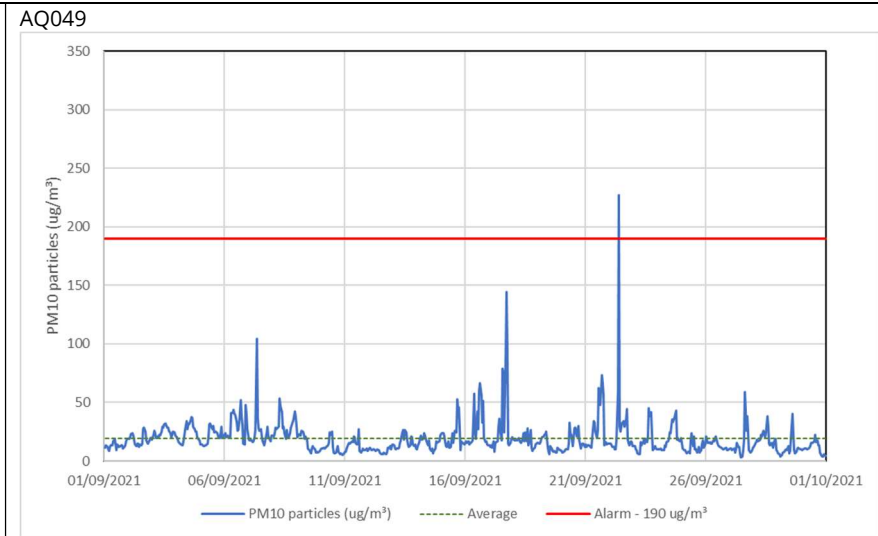
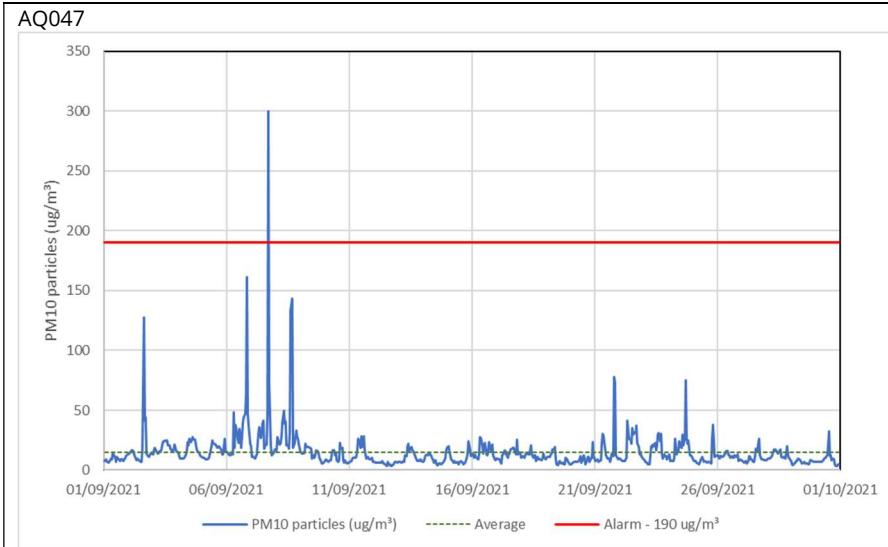
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
		HOAC at Dews Lane								
DGT-AQMP	506124, 188025	At the Dog Trust on Harvil Road.	M	No	Yes	10.2	1.0	63.0	0	100.0
CVV-AQMP6	504321, 188835	Korda Lake Compound, along haul route north of Moorhall road.	M	Yes	Yes	10.5	1.0	65.0	0	95.0

Table 2: Summary of exceedances of trigger level in September 2021

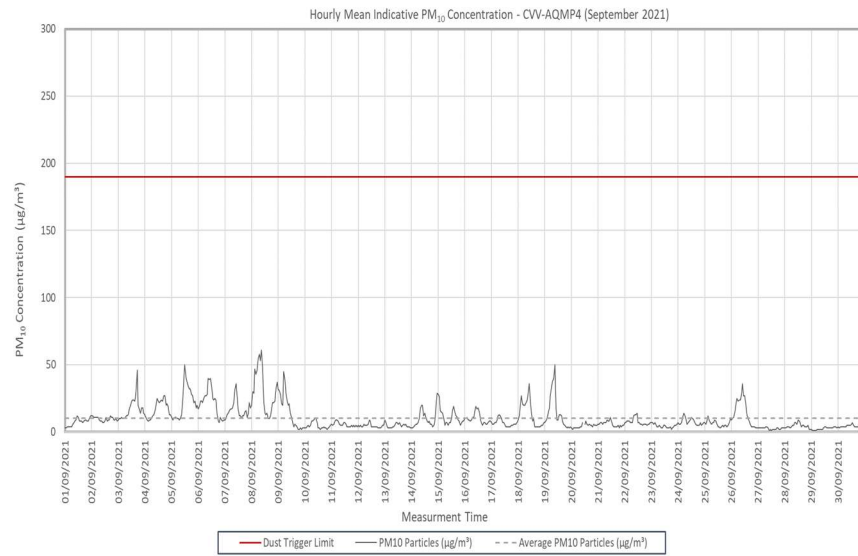
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes/ Resolution / Remedial measures implemented
AQ041	15/09/2021 02:01-03:00; 875.2 µg/m ³ 03:01-04:00; 327.5 µg/m ³ 19/09/2021 05:01-06:00; 334.7 µg/m ³ 06:01-07:00; 489.3 µg/m ³ 07:01-08:00; 556.0 µg/m ³ 21/09/2021 06:01-07:00; 474.0 µg/m ³	Monitor AQ041 is powered by a wind turbine and solar panel. Due to the lack of wind and reducing daylight hours not enough power has been provided to operate the monitor properly. As the power has run down or resumed the monitor has given elevated false readings as the internal heater and pump stop or start respectively.	The monitor's power supply is to be swapped to a hydrogen generator in the weeks ahead to ensure continuous and more reliable power during the winter months.
AQ047	07/09/2021 16:01-17:00; 299.9 µg/m ³	Monitor AQ047 is located on the southern boundary of the NSPA with Newyears Green Lane. At the time of the trigger alert, works were underway moving a nearby topsoil stockpile, with dust canon in operation. It was considered that the trigger alert was due to nearby onsite vehicle movements rather than machinery working on the stockpile.	On receipt of the dust trigger the area and haul route were damped-down and the dust canon repositioned ready for dust suppression prior to works commencing the next day. The SCS site teams were reminded at the beginning of the week to maintain vigilance around dust suppression on site activities given the continued dry, warm weather. Dust suppression will continue to be employed as required across all site activities. The on-site bowser and road sweeper will continue to maintain circuits of all the internal haul routes throughout each day.
AQ049	22/09/2021 08:01-09:00; 226.9 µg/m ³	Monitor AQ049 is located at the western boundary of the Ancient Woodland on the North Copthall site south of Newyears Green Lane. At the time of the trigger there were limited concrete works underway nearby and limited vehicle movements and no visible dust observed at the time. However, it is considered that the elevated levels were limited to this location and activity; and not representative of the wider site conditions.	Bowsers continued their regular circuit to damp down the haul road. Subsequent monitored levels dropped and remained low thereafter. The site team will continue to remain vigilant of the need to maintain sweeping and dust suppression in all areas of the site, The on-site bowser and road sweeper will continue to maintain circuits of all the internal haul routes throughout each day.

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

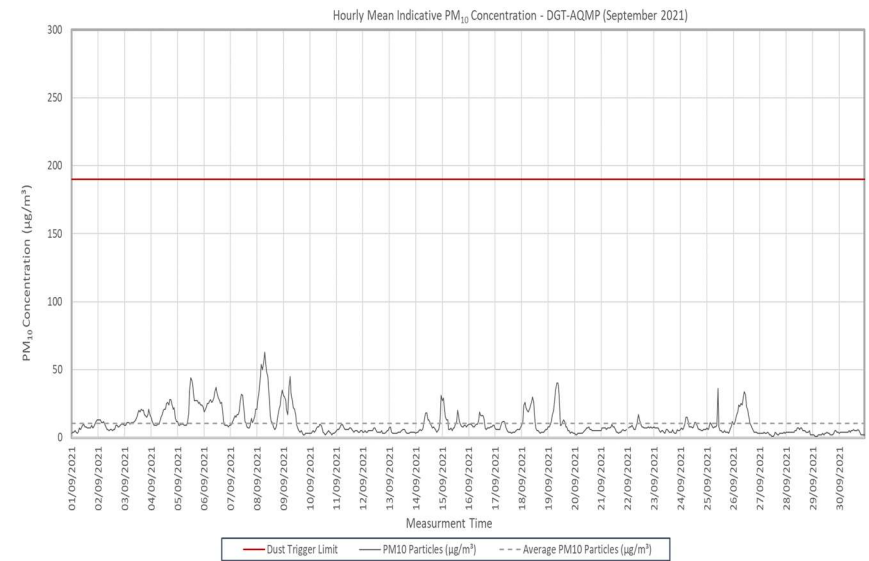




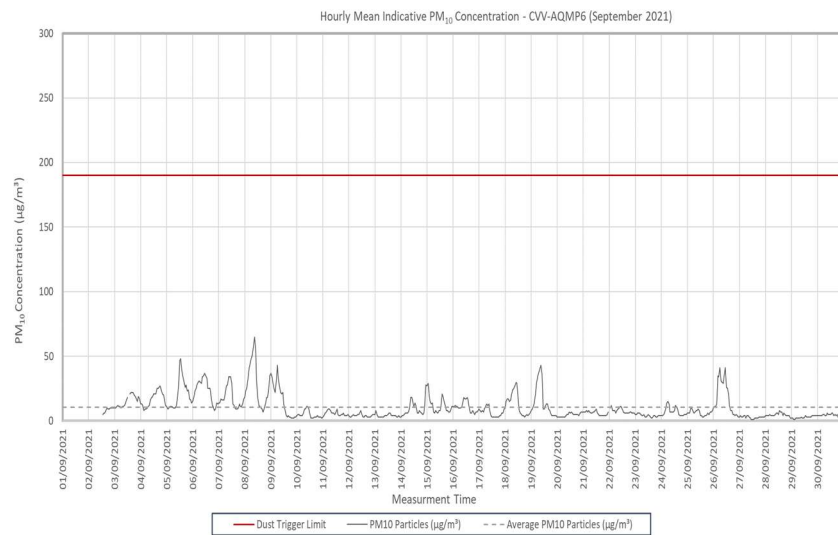
CVW-AQMP4



DGT-AQMP



CVW-AQMP6



Appendix C – Air Quality Monitoring Results

Table 3: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2021 (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	30	30	24	23	20	16	No Data	16					22
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	45	46	44	38	45	Tube Missing	32	35					41
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	Tube Missing	40	37	36	36	Tube Missing	Tube Missing	31					36
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	40	48	39	46	43	Tube Missing	No Data	29					41
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40	40	38	36	31	31	39	29					35
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	Tube Missing	39	37	30	34	Tube Missing	27	27					32
HS2-000020BPN	Lamp post on B467	506767, 186224	36	38	32	32	32	27	Tube Missing	22					31

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.

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	Tube Missing	Tube Missing	42	42	41	38	31	Tube Missing					39
HS2-000020BQN	Lamp post on Park Road	506176, 185444	40	52	31	42	47	36	Tube Missing	35					41
HS2-000020BQP	Sign post on Long Lane	507614, 184663	38	39	36	41	39	32	26	32					35
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39	40	33	33	32	27	No Data	25					33