

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



Department for Transport

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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 September and October 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 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 and West Ruislip Embankment, Breakspear Road South and River Pinn Underbridge piling operations, groundworks and materials management, and conveyor construction;
 - Groundworks, piling and materials management, concreting and shuttering works at Copthall North and South;
 - West Ruislip Portal piling and groundworks, concreting and tunnel portal construction; and materials management;
 - 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 site

- Jetty piling: piling platform relocation works;
- HOAC Compound: operation and de-sanding;
- 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;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation Works: GI works;

- Pier Construction: arch from the pier and standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts and earthworks;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- South Abutment: earthworks/stabilisation, CFA piling, pile trimming & pile hat installation, FRC early works on SE and drainage works;
- Core Drilling of Concrete;
- Pile Trimming;
- Grand Union Canal Work: operation and maintenance;
- 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;
- 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: 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 worksites

- Jetty piling: piling platform relocation works;
- HOAC Compound: operation and de-sanding;
- 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 pier and standard piers FRC works for pile cap and pier, post tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts and earthworks;
- 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 and internal PT stressing & grouting; and
- Deck Finishes: 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, where works are underway. These 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 There were six (6) dust trigger alerts recorded during the monitoring period (October 2022). The exceedance is presented in Appendix B, Table 2.

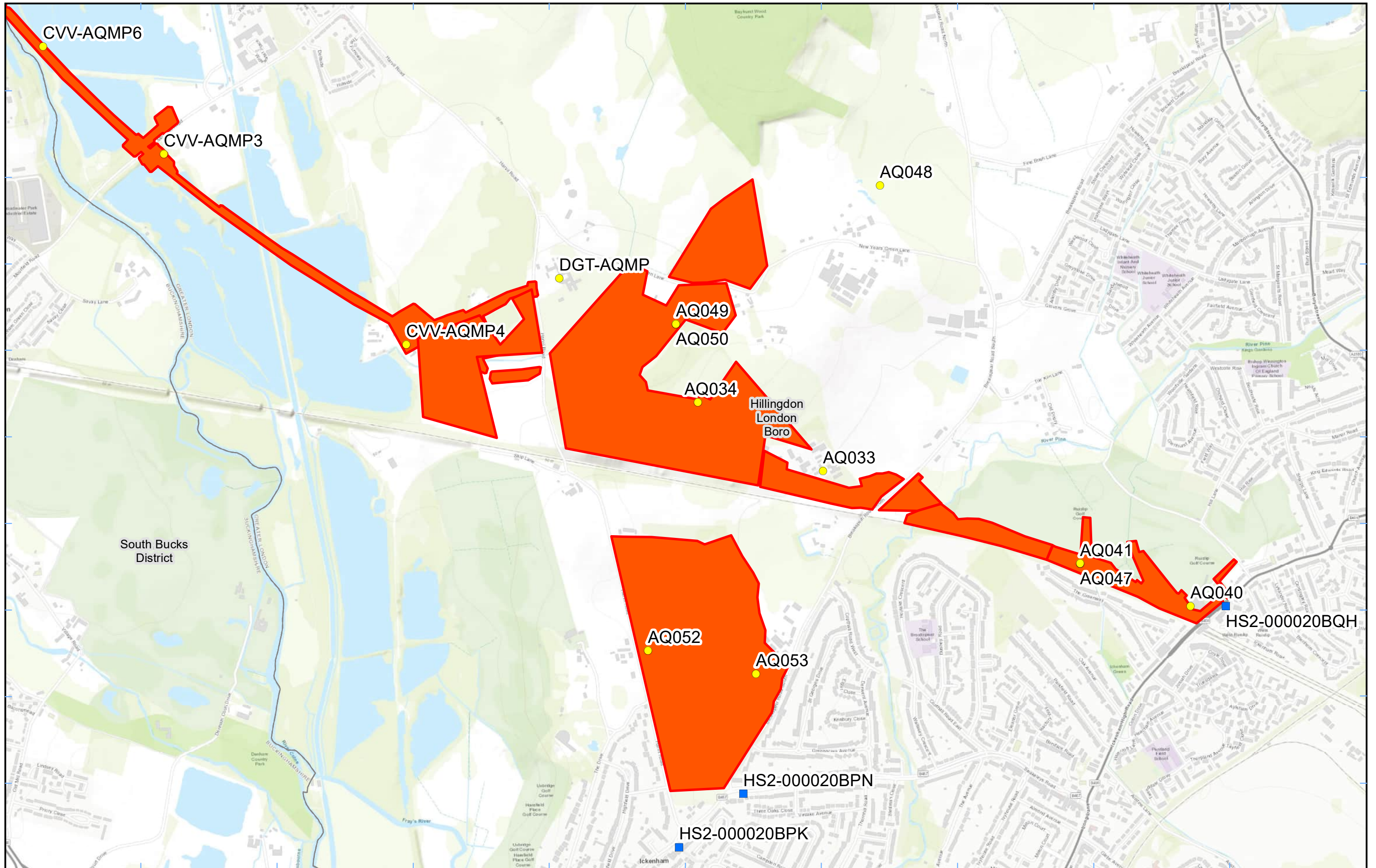
1.1.9 Date capture was below 90% for multiple monitors due to power loss, relocation of monitors, and installation of a new monitor (AQ053).

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 September occur as a result of the scheme.

- 1.1.11 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.
- 1.1.12 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 (October 2022).

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

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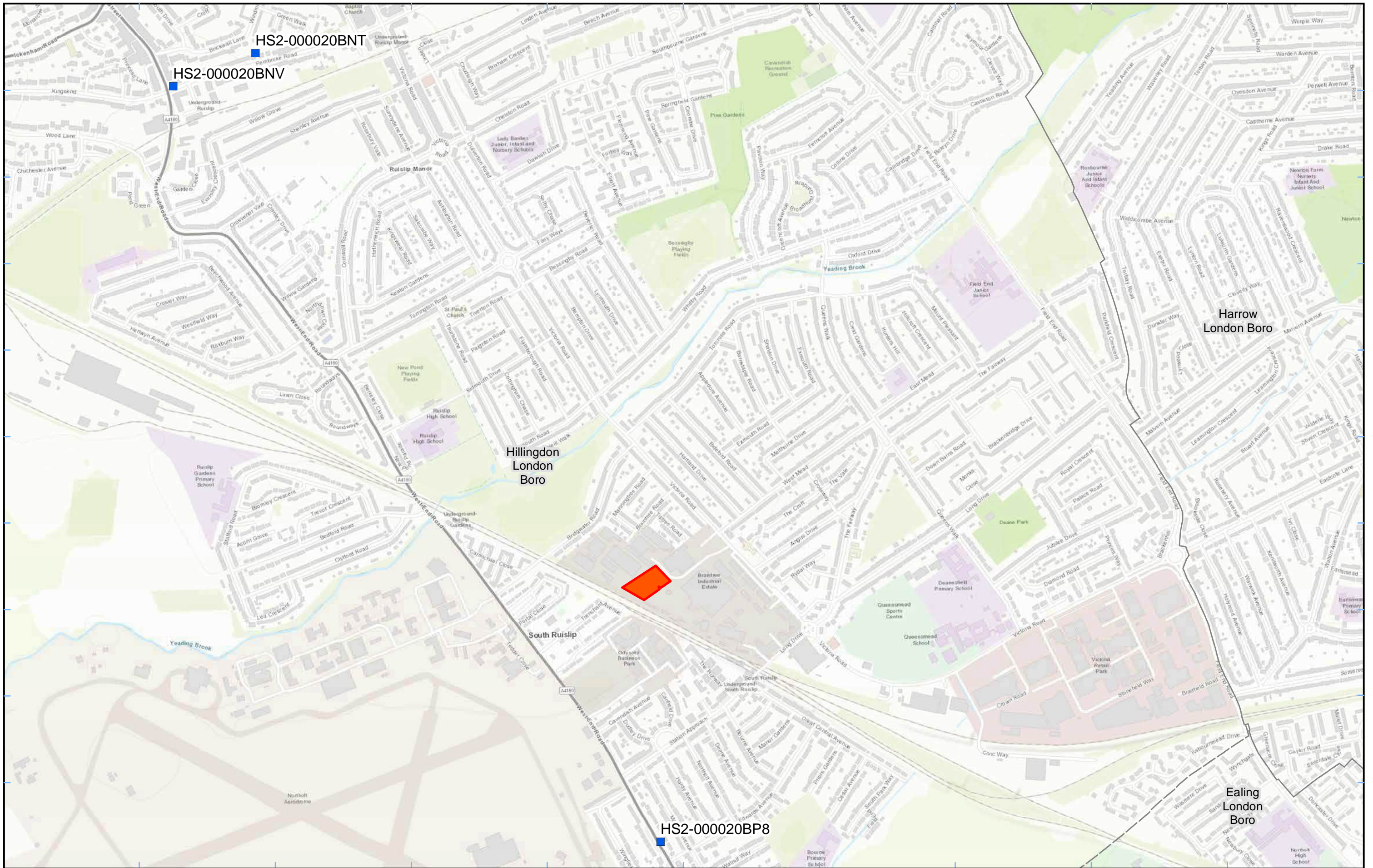
Map Number
 Map Name
**Worksite & Monitoring Locations
 in LBH (Sheet 1)**
 London Borough of Hillingdon

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

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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

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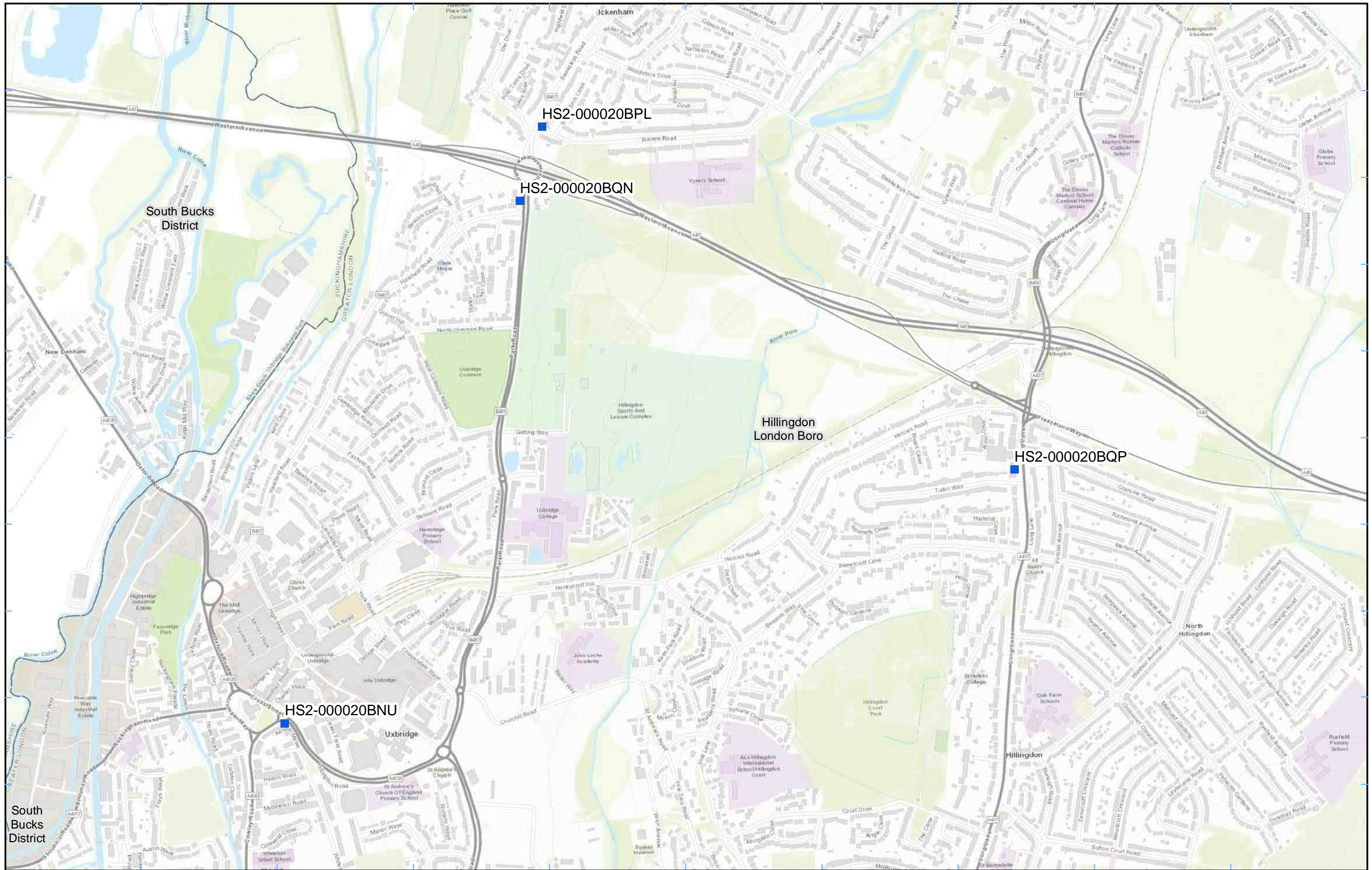
Map Number
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**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
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Legend
 Diffusion Tube
 District Borough Unitary Boundaries

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

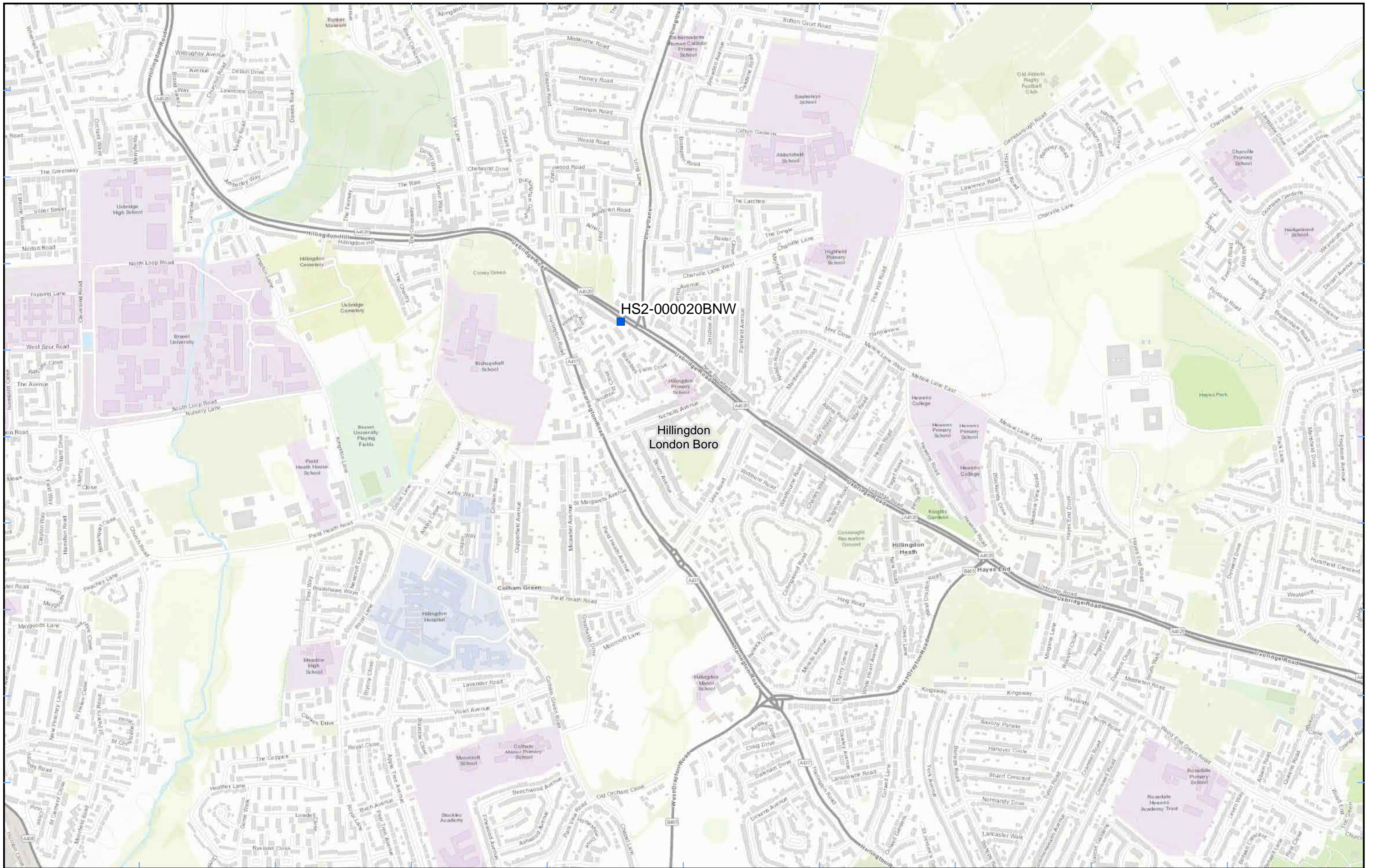
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- Legend**
- Diffusion Tube
 - District Borough Unitary Boundaries

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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 October 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	15.7	1.0	449.2	1	88.6
AQ034	506608, 187592	Cophall Cutting	L	Yes	N	35.8	2.8	4480.7	5	100.0
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	18.6	3.1	129.7	0	91.9
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	20.5	5.0	66.6	0	100.0
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	14.0	1.5	89.2	0	100.0
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	23.7	2.2	2715.5	3	79.0
AQ049	506531, 187865	Cophall North, Ancient Woodland	M	Yes	N	13.3	2.4	73.9	0	100.0
AQ050	506531, 187865	Cophall South Compound	H	Yes	N	13.0	2.2	56.9	0	100.0
AQ052	506433, 186725	Southern Sustainable Placement Area	H	Yes	N	13.2	1.4	36.5	0	47.2

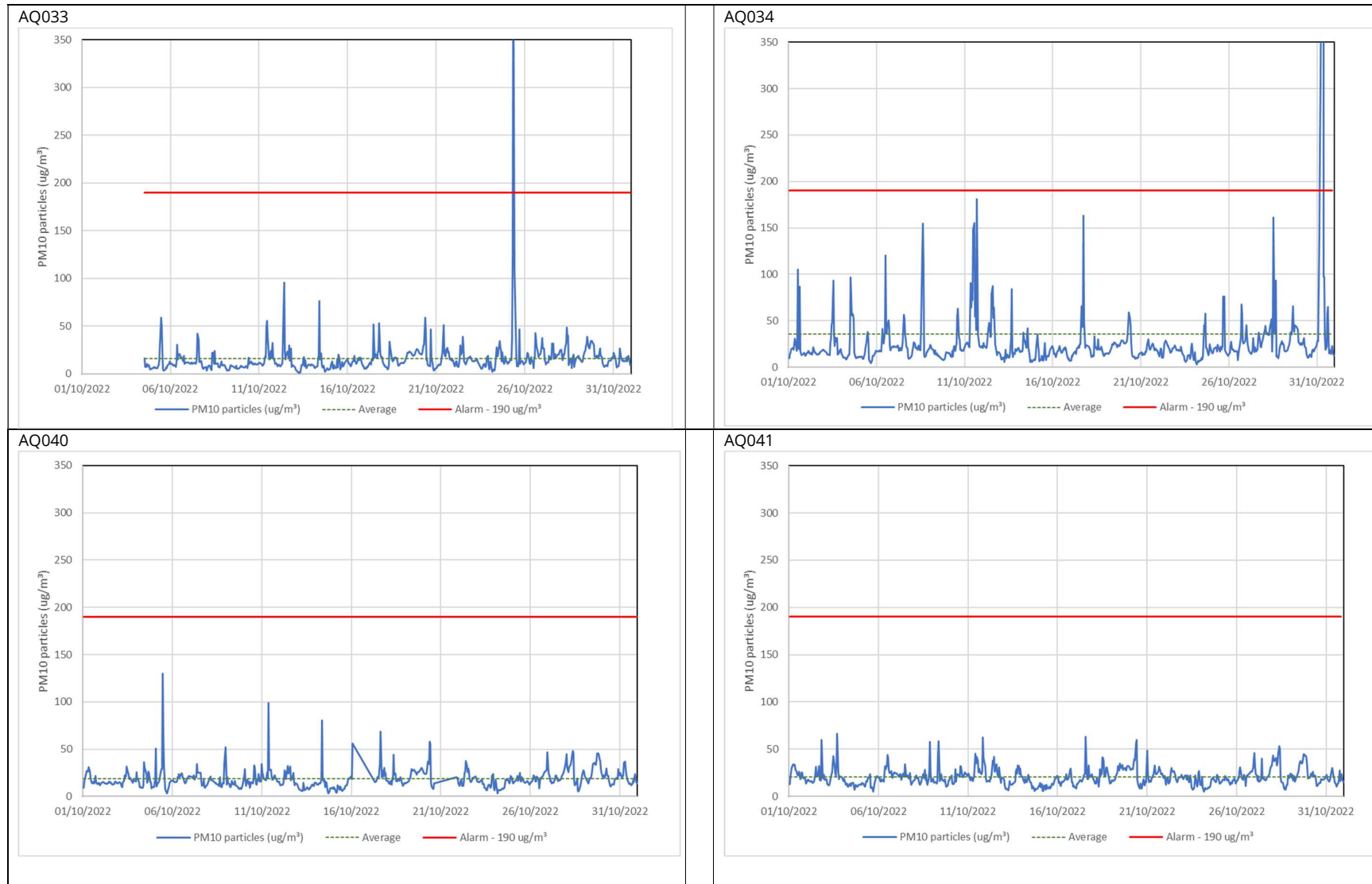
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ053	506811, 186643	Southern Sustainable Placement Area	H	Yes	N	17.8	2.9	80.9	0	36.3
CVV-AQMP3	504773, 188419	On the eastern boundary along south side of Moorhall Road	M	Yes	Y	8.8	1.0	33.0	0	51.5
CVV-AQMP4	505589, 187793	On the western boundary of HOAC at Dews Lane	M	Yes	Y	7.7	2.0	32.0	0	58.5
DGT-AQMP	506124, 188025	At the Dog Trust on Harvil Road.	M	Yes	Y	7.5	1.0	35.0	0	99.6
CVV-AQMP6	504321, 188835	Korda Lake Compound, along haul route north of Moorhall road.	M	Yes	Y	7.0	2.0	12.0	0	3.6

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

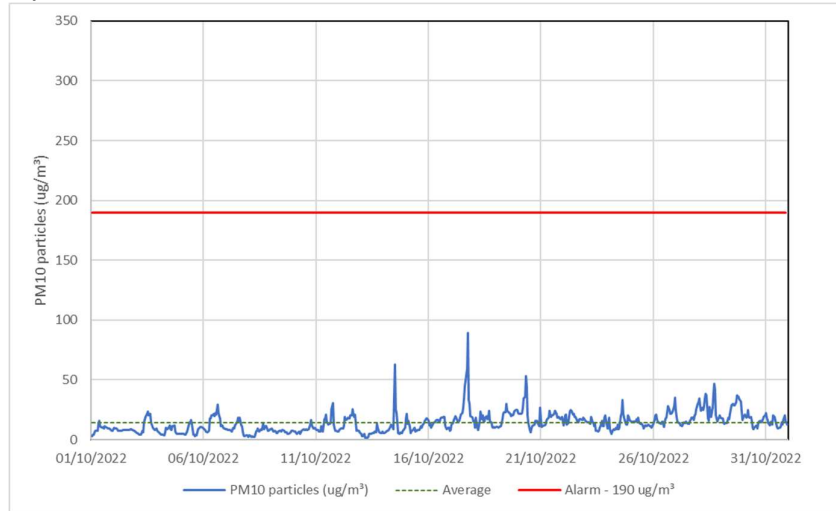
Period exceeding trigger level	Worksite	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
25/10/2022 09:00-09:59; 449.2 µg/m ³	Breakspear Road South	AQ033	n/a	Monitor AQ033 is located at the boundary of the site with the adjacent commercial premises The trigger was due to 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
31/10/2022 04:00-04:59; 241.5 µg/m ³ 05:00-05:59; 308.9 µg/m ³ 06:00-06:59; 419.2 µg/m ³ 07:00-07:59; 3397.2 µg/m ³ 08:00-08:59; 4480.7 µg/m ³	North Copthall Ancient Woodland	AQ034	n/a	Monitor AQ034 is located at the south-eastern boundary of the Ancient Woodland on the North Copthall site. 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.
06/10/2022 06:00-06:59; 1449.9 µg/m ³ 07:00-07:59; 2715.5 µg/m ³ 08:00-08:59; 596.1 µg/m ³	Northern Sustainable Placement Area	AQ048	n/a	Monitor AQ048 is located on the north/north-eastern boundary of the placement area. The trigger was received during the early hours of the morning before site works commenced and was due to a combination of power loss to the monitor (the hydrogen generator had run out of hydrogen gas and the monitor slowly powered down during the day) and damp morning weather conditions. The triggers were associated with high moisture content in the air and low power to	Hydrogen cylinders were subsequently replenished and power restored.

Period exceeding trigger level	Worksite	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
				the pump/ heater, which was working off the internal battery, and giving false readings.	

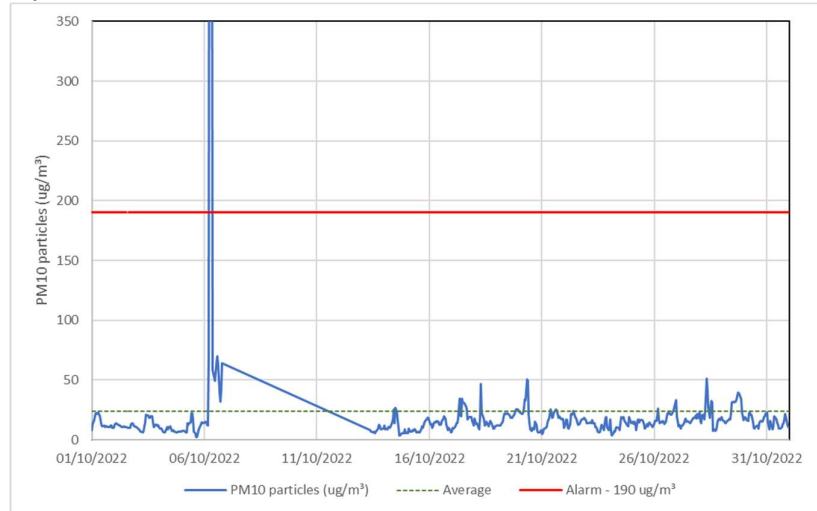
Figure 5: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors



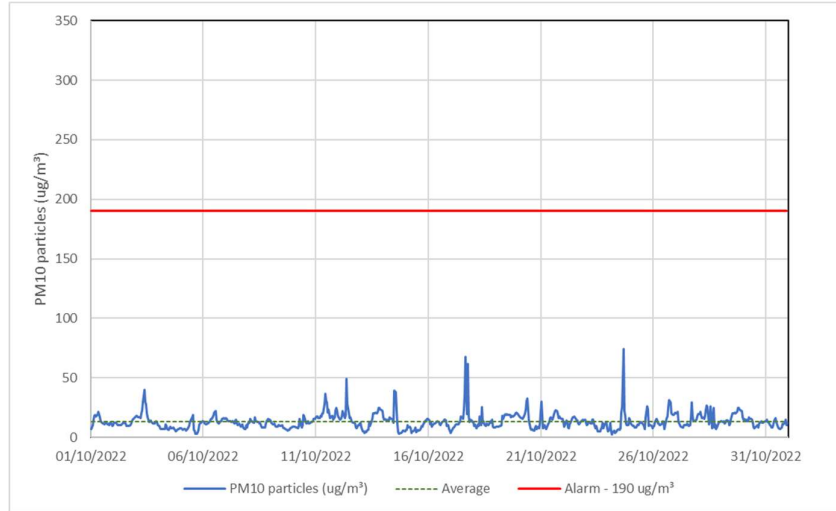
AQ047



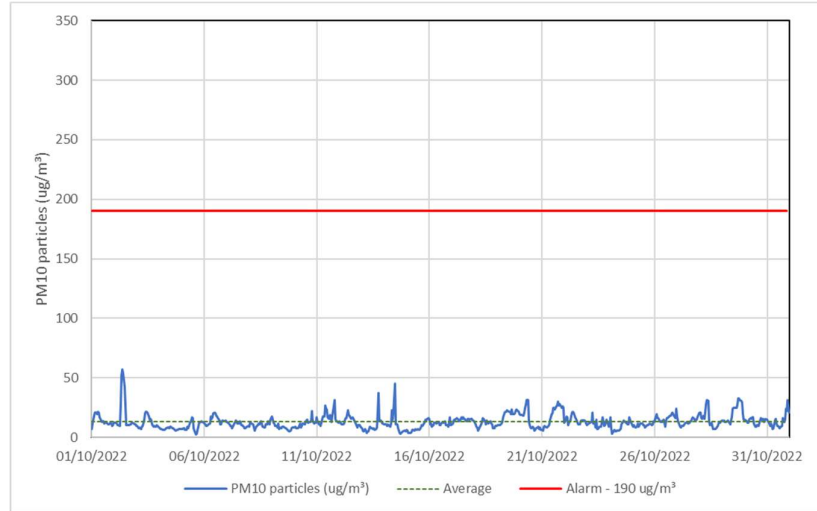
AQ048



AQ049

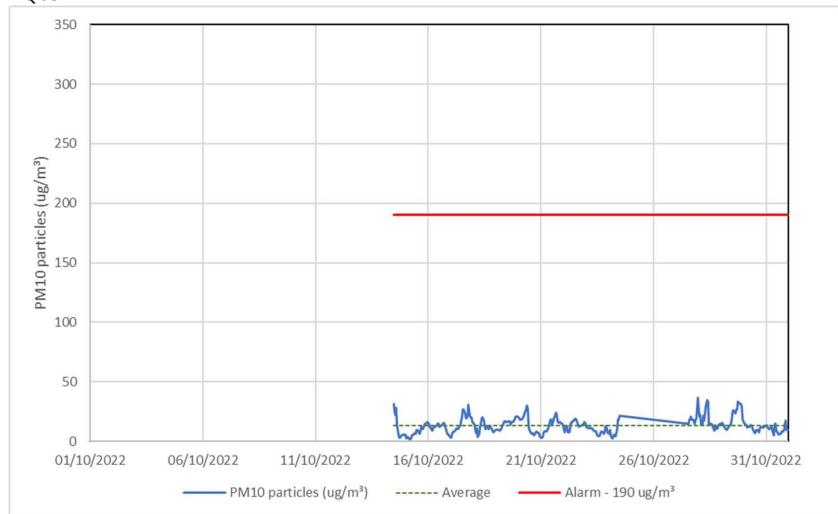


AQ050

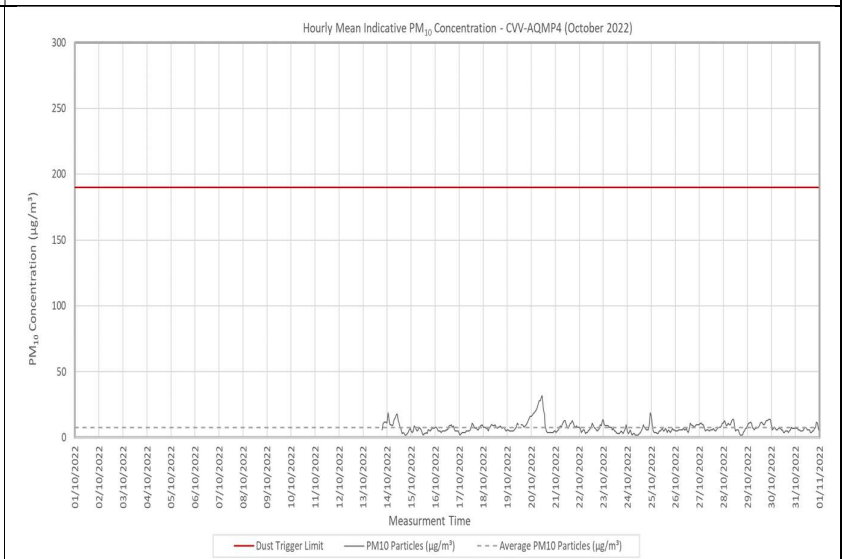
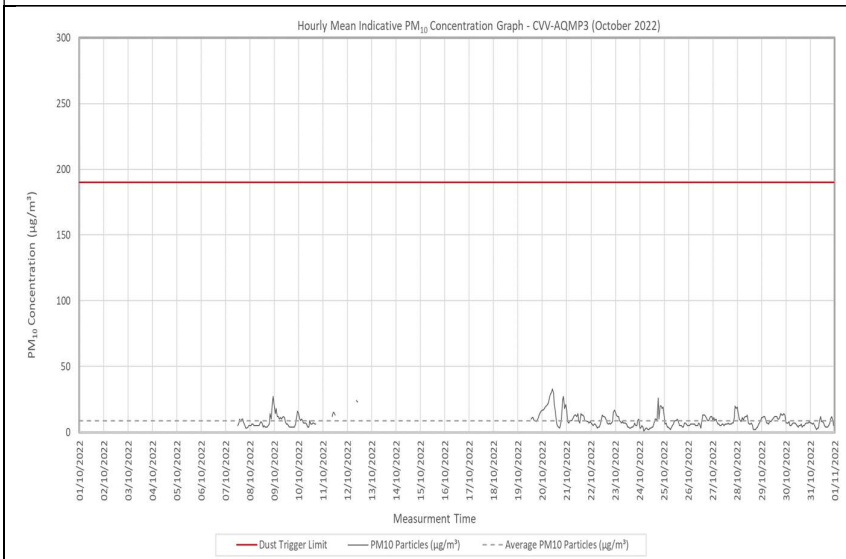
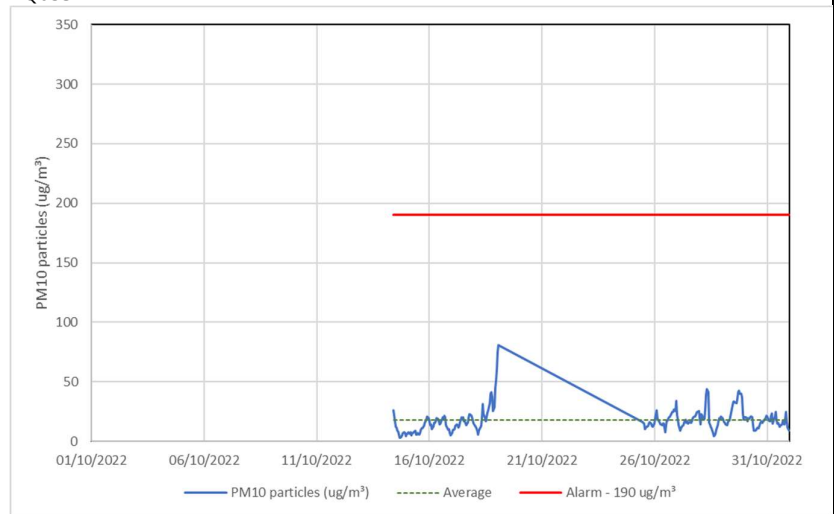


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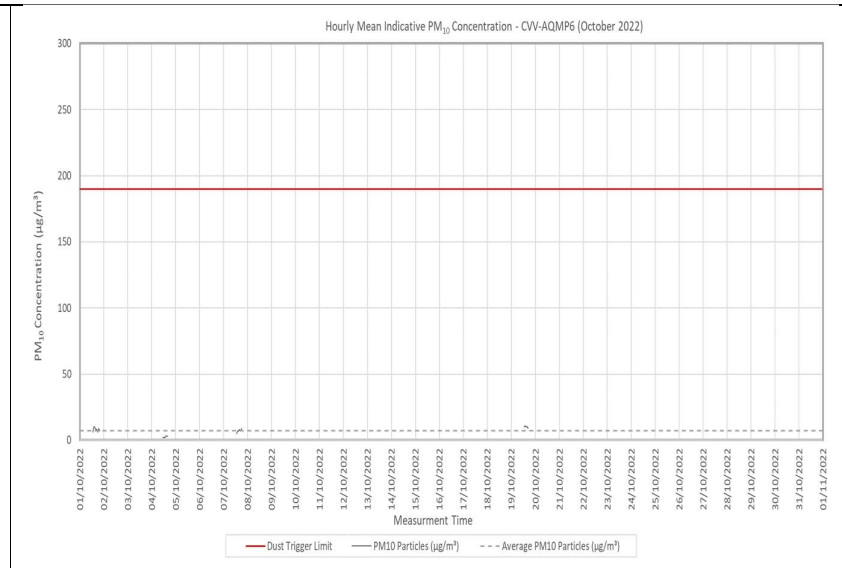
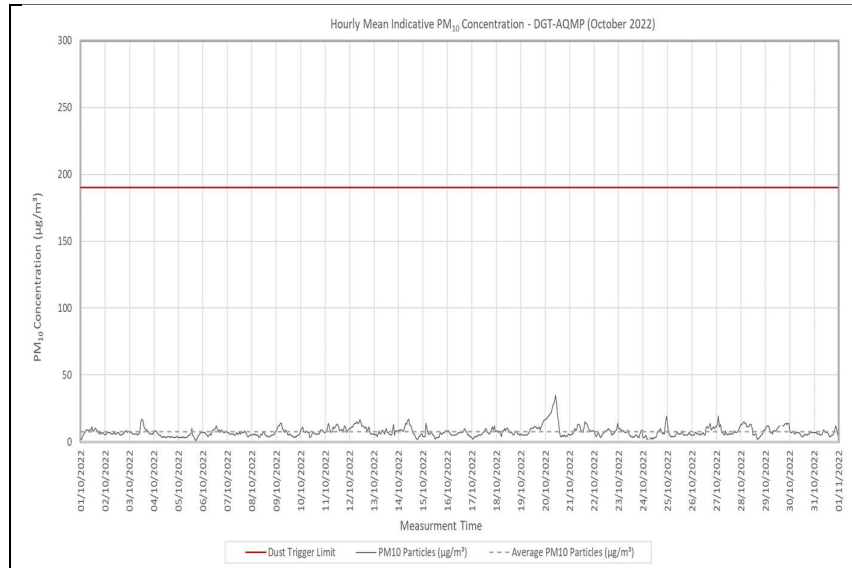
AQ052



AQ053



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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				23
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	60	47	49	41	36	39	39	40	44				44
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	51	Tube Missing	48	35	27	28	35	36	40				37
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	53	29	60	41	28	33	36	47	48				42
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	46	30	40	33	27	25	29	34	37				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				35
HS2-000020BPN	Lamp post on B467	506767, 186224	47	34	43	30	Tube Missing	19	29	28	36				33

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	61	41	40	Tube Missing	No data	No Access	43	40	47				45
HS2-000020BQN	Lamp post on Park Road	506176, 185444	53	36	56	40	No data	33	36	38	47				38
HS2-000020BQP	Sign post on Long Lane	507614, 184663	50	36	56	37	32	33	36	40	43				40
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	42	32	45	33	27	26	31	32	33				33