

Air Quality and Dust Monitoring Monthly Report – September 2024 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.

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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 August 2024 and September 2024 respectively.
- 1.1.2 Figure 1 to Figure 4 in Appendix A present 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 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, concreting, groundworks and materials management;
Harvil Road realignment groundworks, materials management, concreting and shuttering works at Copthall North;
West Ruislip Portal materials management (tunnel boring machine arisings);
South Ruislip vent shaft construction, ground works, concrete works and materials management;
Northern Sustainable Placement Area (NSPA) limited materials management and groundworks;
- Southern Sustainable Placement Area (SSPA) spoil treatment area operation, materials movements and groundworks.

CVV Dews Lane

- North Moorhall Compound: operation;
- HOAC Compound: operation
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation works
- Pier Construction: arch form deck piers – drilling and concrete works;
- ATFS: site preparation, installation of ducts and earthworks, bulk earthworks fill, permanent drainage, soiling and seeding, ATFS access road construction;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms;
- South Abutment: earthworks, drainage works, South Abutment construction stage 2, South Abutment construction stage 2 – earthworks, yard supporting activities, soiling and seeding works, embankment FRC works;

- Environmental Maintenance;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;
- River Colne Crossing: Emergency removal of obstruction to RC crossing;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling, external PT, internal PT grouting, crane assembly/disassembly and launching girder dismantling;
- Deck Finishes Logistics: preparation and operation of storage yards and installation of below deck access provision, traffic management on the deck surface, installation of parapets, noise barriers, troughs, pipes, steel works and other minor material to the storage yards and deck, installation of access at the top of the deck (HAKI stairs) and finishes support plant;
- Deck Finishes – On-deck Construction: construction of robust kerbs, installation of parapets, construction of concrete stitch, filling of voids and top openings, verge deck waterproofing, trough installation, noise barrier installation, deck waterproofing and SFRC slab construction;
- Deck Finishes – In-deck Construction: concrete works within the deck, drainage works within the deck, steel works within the deck, and structural health monitoring;
- Landscaping: advanced works including removal of cofferdams, early earthworks including ground profiling and cut, initial ground drainage including manhole chamber, early soil placement, hardstanding removal and tree removal & vegetation clearance;
- Jetty Removal and associated earthworks: Earthworks excavation, backfill, and landscaping, jetty removal, cutting piles and steelworks; and
- Gravel Islands.

CVV Moorhall Road

- North Moorhall Compound: operation;
- HOAC Compound: operation
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation works;
- Pier Construction: arch form deck piers – drilling and concrete works;
- ATFS: site preparation, installation of ducts and earthworks, bulk earthworks fill, permanent drainage, soiling and seeding, ATFS access road construction;
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- Gravel Islands.

1.1.5 Fifteen (15) dust monitors are installed around these worksites, where works are underway. These sites returned a low to high dust risk rating.

1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 2, 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 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 3.

1.1.9 Data capture was below 90% for multiple monitors due to:

- AQ034, AQ047 and AQ053 were below 90% (75.1%, 70.3% and 62.6% respectively) due to the monitors being powered by hydrogen generators and needing replenishing/exchange of hydrogen cylinders. Despite replenishment of the cylinders

powering the generator for AQ034 the monitor continued to experience intermittent power losses.

- Data capture for monitor, AQ057 was below 90% (0%) due to a fault with the monitor.
- The reduced data capture for CVW-AQMP4 is due to the monitor being turned off on site, this issue is currently being investigated.

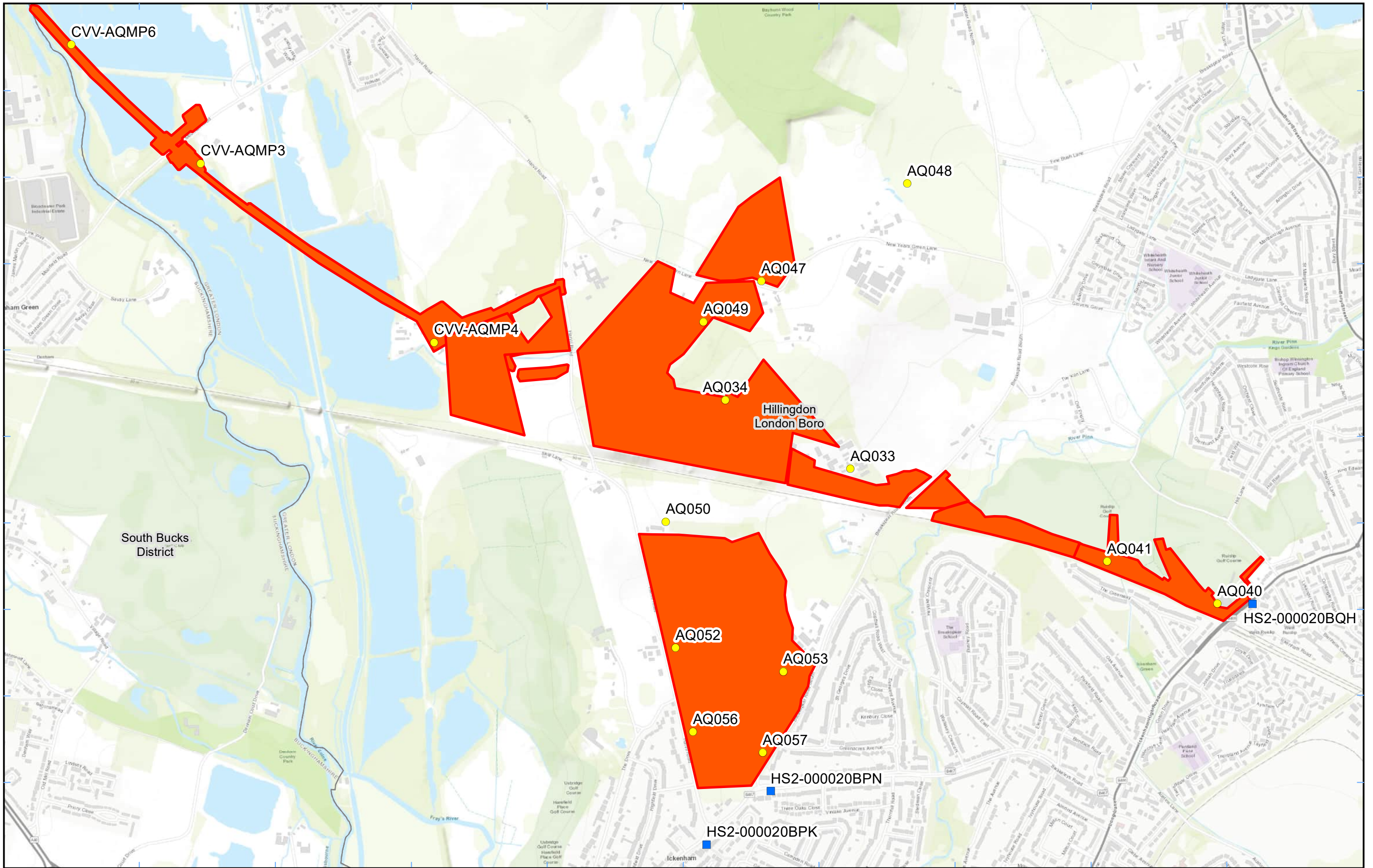
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects may occur as a result of the scheme.
- 1.1.11 Diffusion tube monitoring results are as provided from the 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 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 4, together with the 2024 running mean.
- 1.1.13 Table 1 provides a summary of the complaint information relating to dust and air quality received during the reporting period, together with the findings of any related investigations.

Table 1: Summary of complaints received during September 2024

Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
HS2-24-45719-C	N/A	Local roads covered in dust.	Increased mitigation to reduce dust in the area. Resident has been informed.

Appendix A – Worksites and Monitoring Locations


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



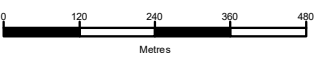
Legend
■ Diffusion Tube ■ Worksite
● Dust Monitor District Borough Unitary Boundaries

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Map Number
 Map Name
**Worksite & Monitoring Locations
 in LBH (Sheet 1)**
 Solihull Metropolitan Borough

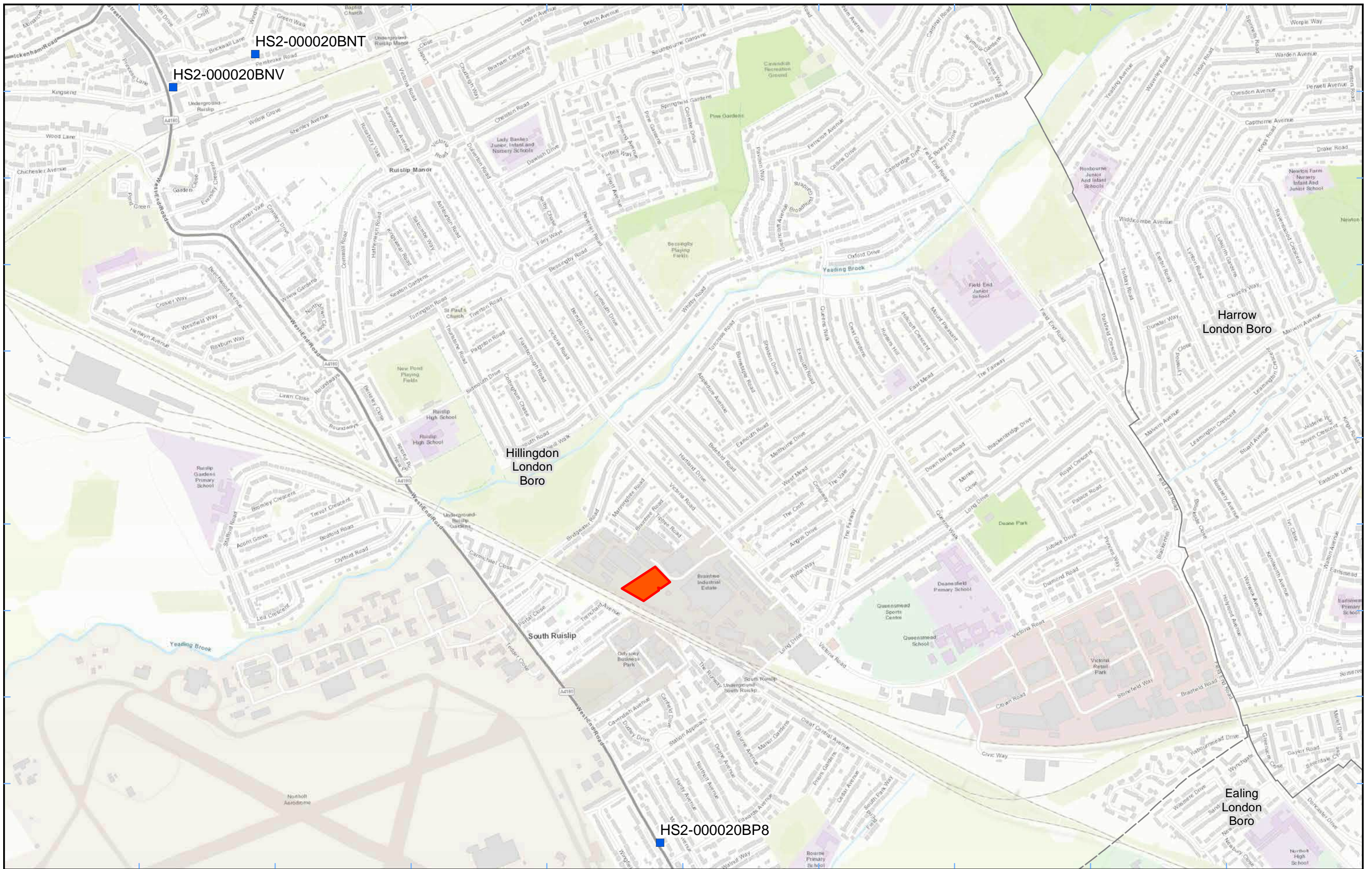

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Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

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

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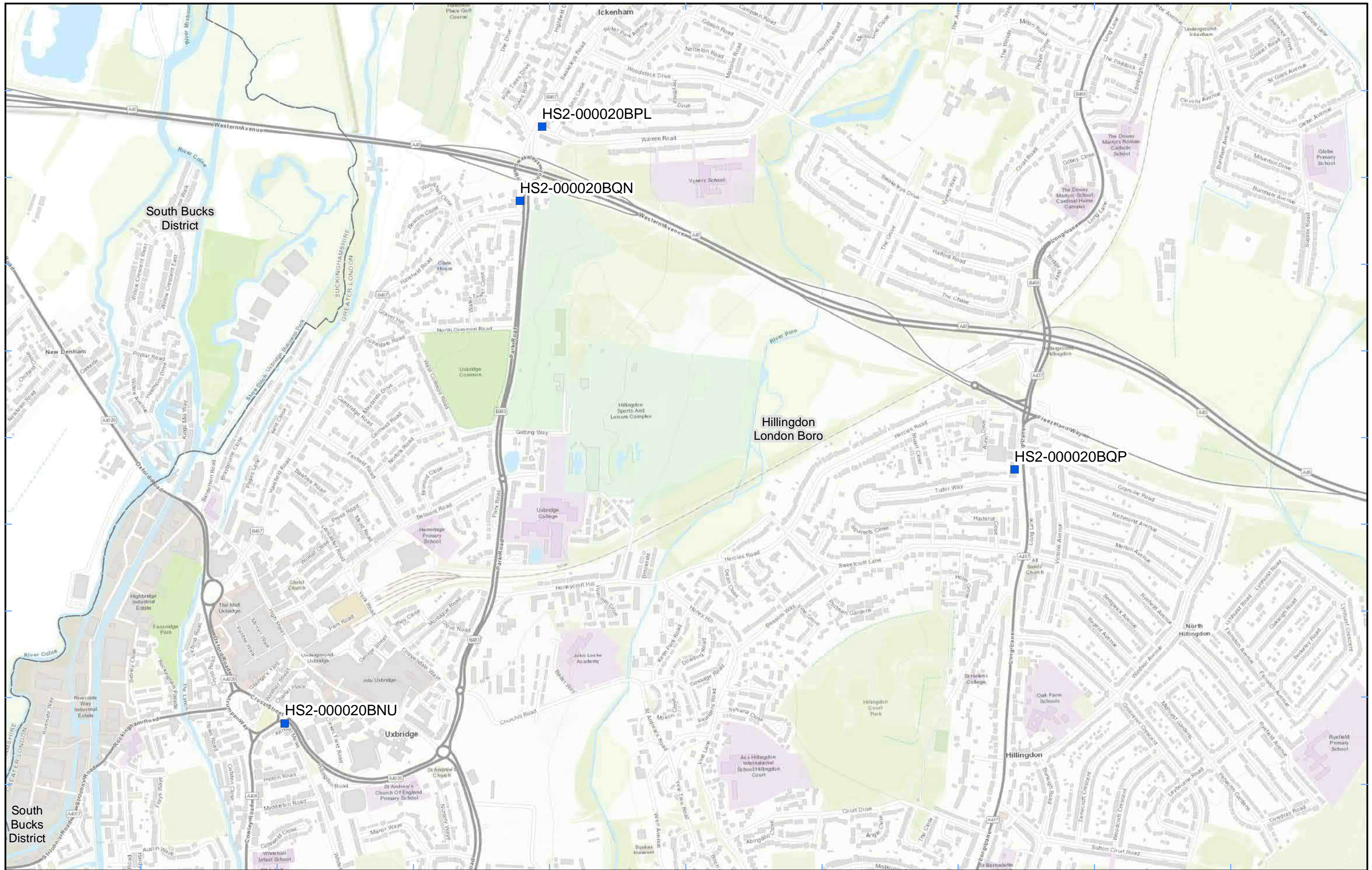
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 ■ Diffusion Tube
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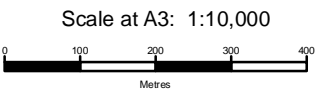
Map Number
 Map Name
Monitoring Locations In LBH (Sheet 3)
London Borough of Hillingdon



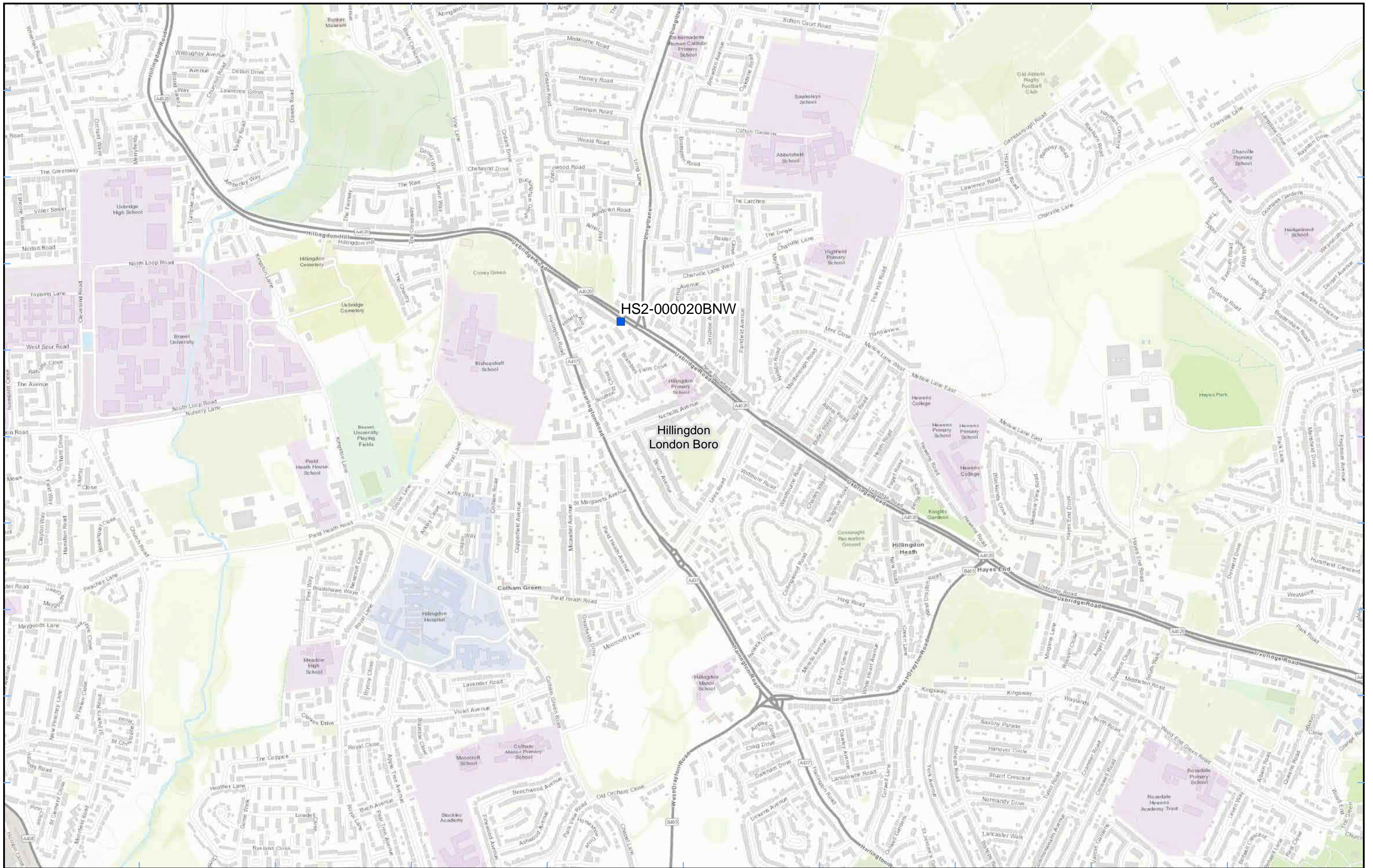
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Legend
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Monitoring Locations In LBH (Sheet 4)
London Borough of Hillingdon

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Date: 08/12/20

Appendix B – Dust Monitoring Results

Table 2: Dust Monitoring Locations and Results

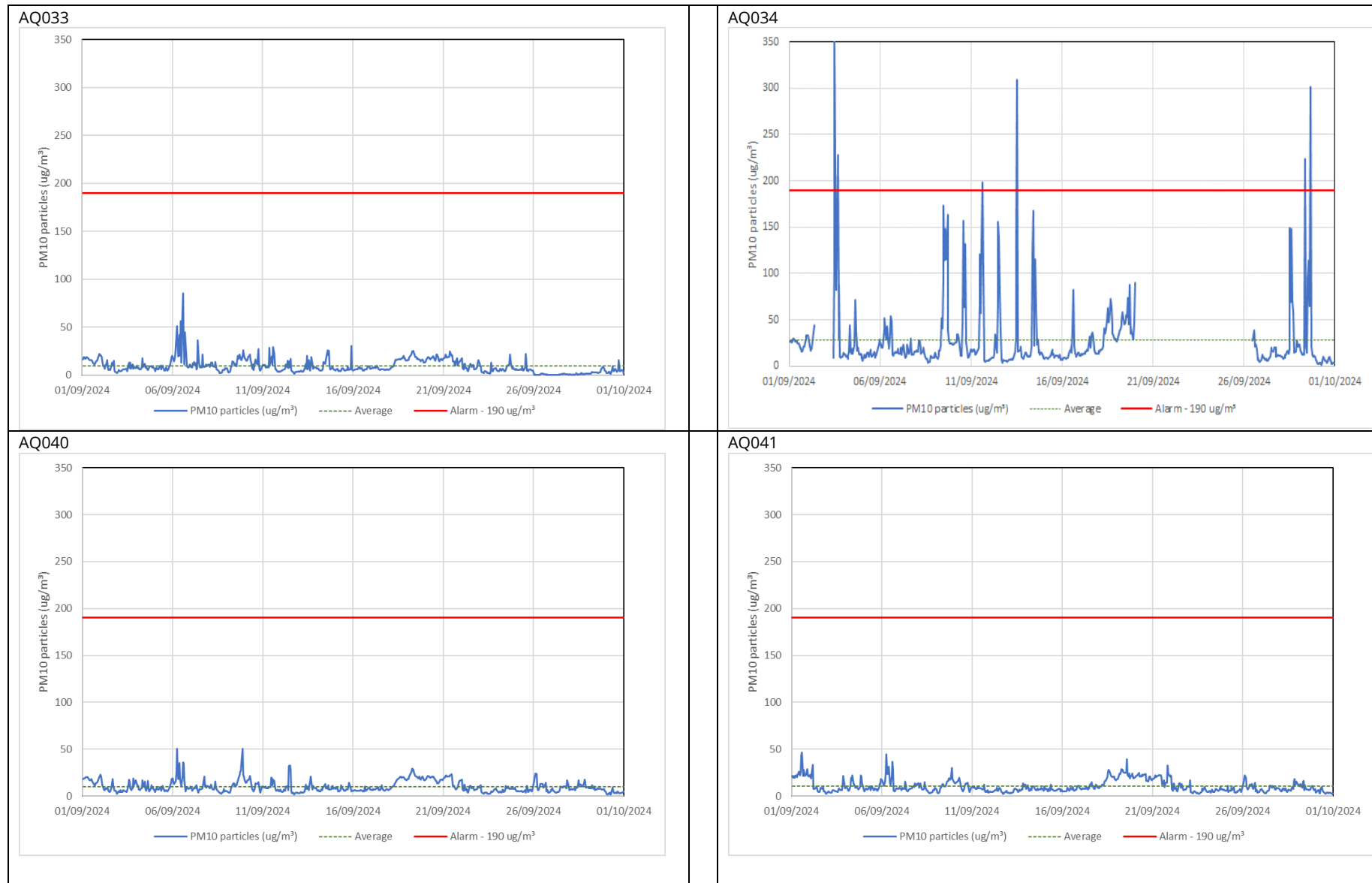
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	9.4	0.1	85.0	0	100.0
AQ034	506608, 187592	Cophall Cutting	L	Yes	N	28.2	1.8	364.4	7	75.1
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	10.2	1.6	50.6	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	10.6	2.2	46.4	0	100.0
AQ047	507942, 188007	West Ruislip Portal	M	Yes	N	7.7	1.2	34.8	0	70.3
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	7.8	1.2	52.1	0	95.8
AQ049	506531, 187865	Cophall North, Ancient Woodland	M	Yes	N	12.7	1.4	116.8	0	99.6
AQ050	506399, 187166	Cophall South Compound	H	Yes	N	10.9	1.9	48.3	0	100.0
AQ052	506433, 186725	Southern Sustainable Placement Area	H	Yes	N	11.4	2.0	35.0	0	100.0
AQ053	506811, 186643	Southern Sustainable	H	Yes	N	11.0	2.4	59.2	0	62.6

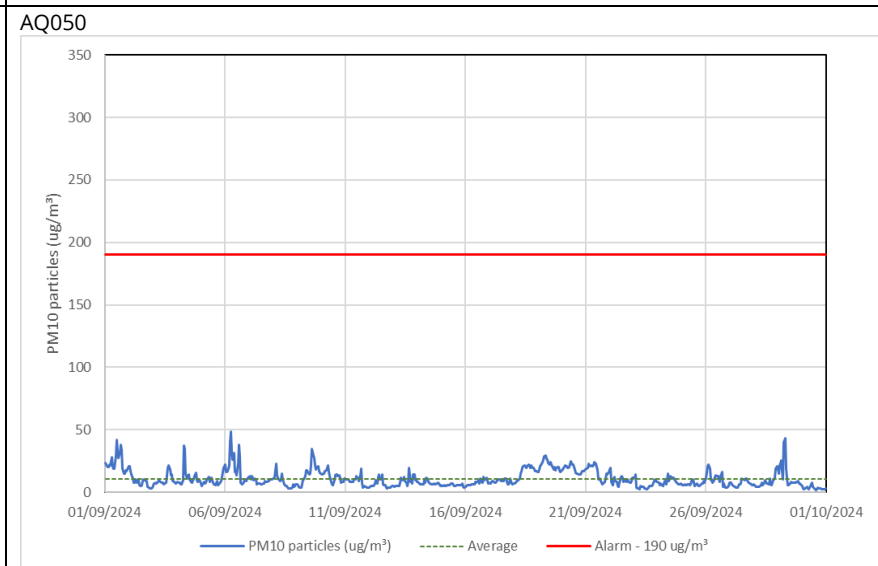
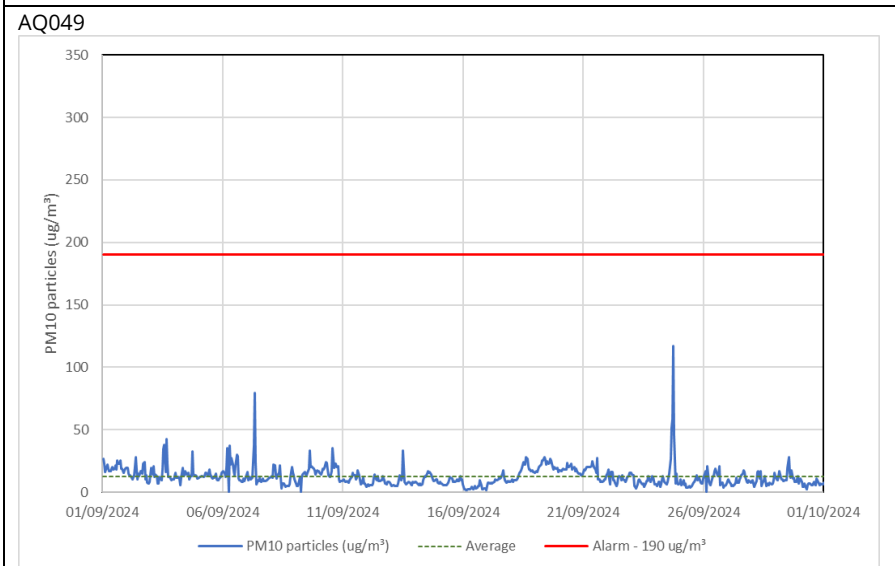
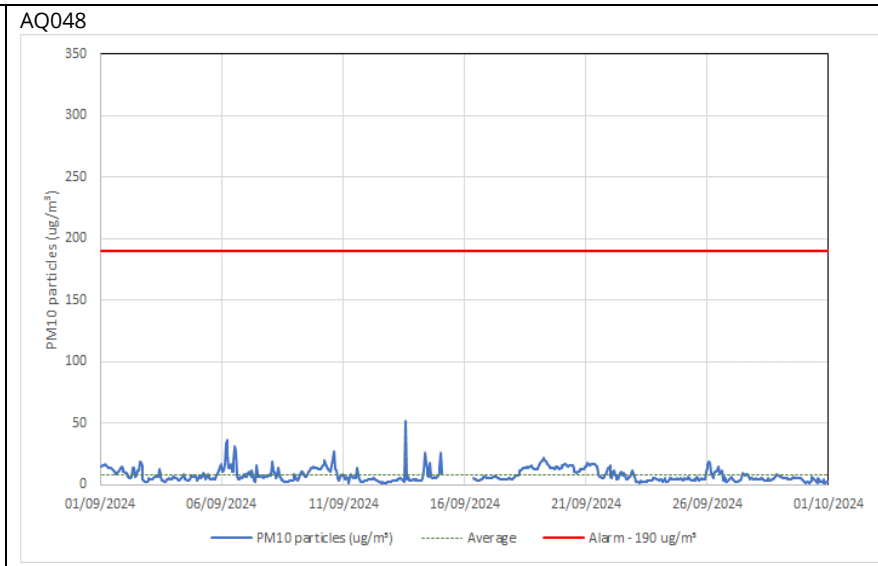
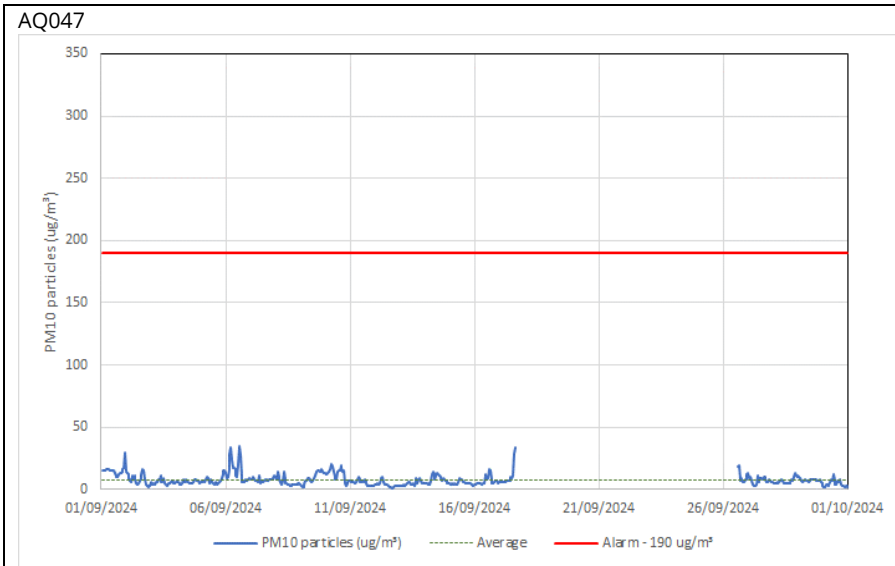
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
		Placement Area								
AQ056	506494, 186432	Southern Sustainable Placement Area	M	Yes	N	12.7	2.0	44.0	0	100.0
AQ057	506739, 186359	Southern Sustainable Placement Area	M	Yes	N	-	-	-	0	0.0
CVV-AQMP3	504773, 188419	On the eastern boundary along south side of Moorhall Road	M	Yes	Y	5.5	1.0	36.0	0	96.4
CVV-AQMP4	505589, 187793	On the western boundary of HOAC at Dews Lane	M	Yes	Y	8.4	1.0	45.0	0	89.7

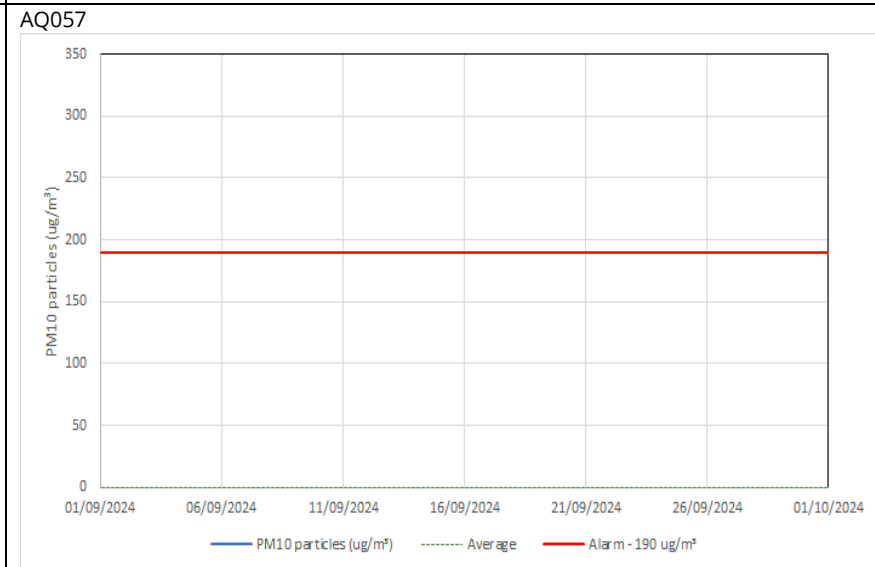
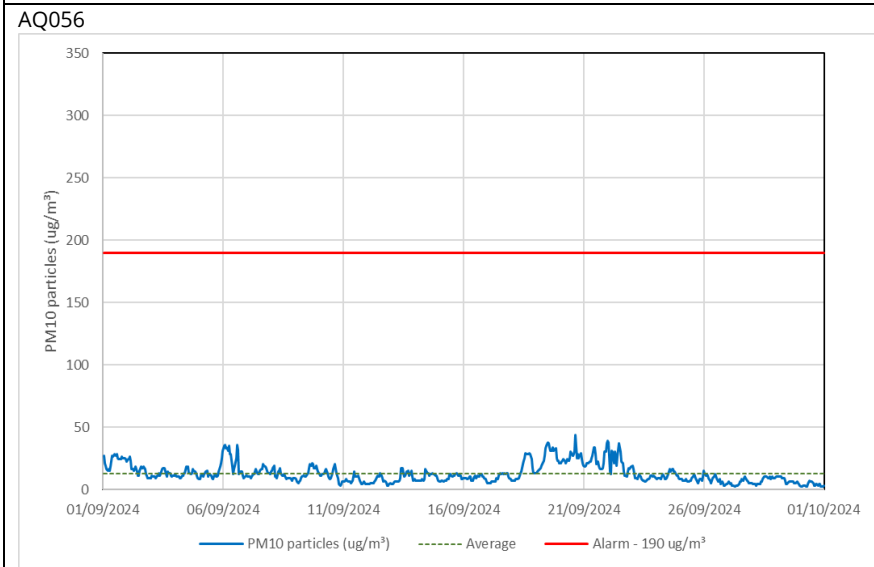
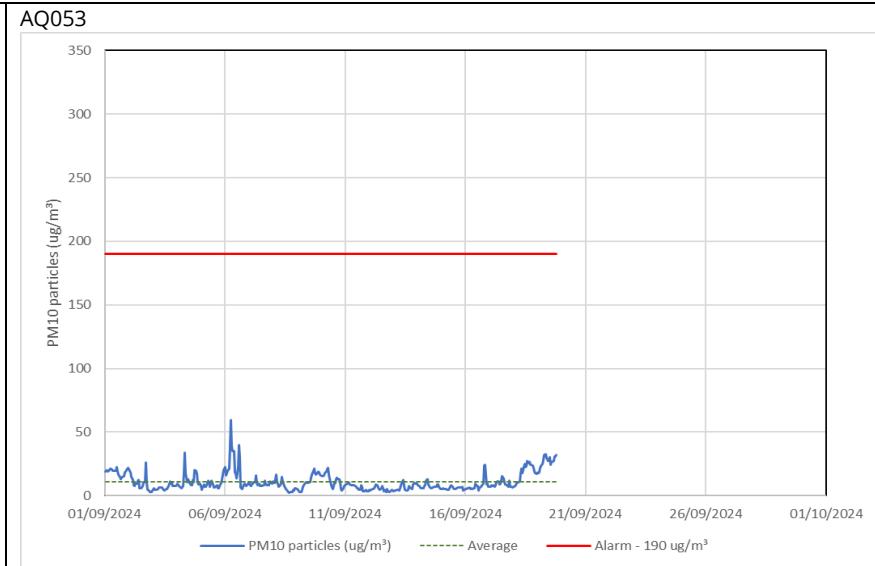
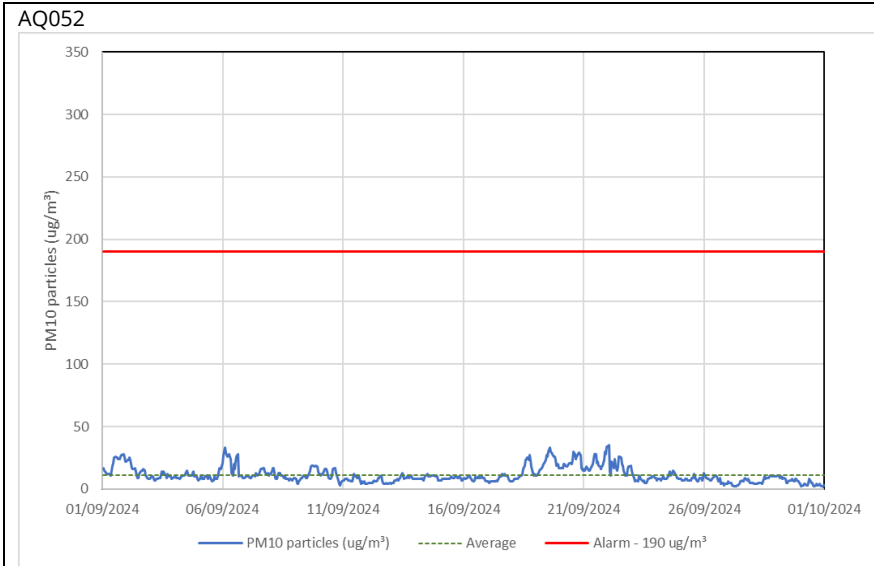
Table 3: Summary of exceedances during period (September 2024)

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	03/09/2024 11:01 – 12:00; 364.4 µg/m ³ 12:01 – 13:00; 206.1 µg/m ³ 13:01 – 14:00; 228.5 µg/m ³ 11/09/2024 14:01 – 15:00; 198.4 µg/m ³ 13/09/2024 12:01 – 13:00; 309.0 µg/m ³ 29/09/2024 08:01 – 09:00; 223.5 µg/m ³ 15:01 – 16:00; 301.8 µg/m ³	The triggers are considered to be caused by a fault with the generator causing numerous intermittent short power losses throughout September. The hydrogen gas powering the monitor also ran out resulting in a period of no readings. The generator was checked and cylinders replenished however the intermittent power losses continued.	Monitor and generator are to be checked again and serviced in October.

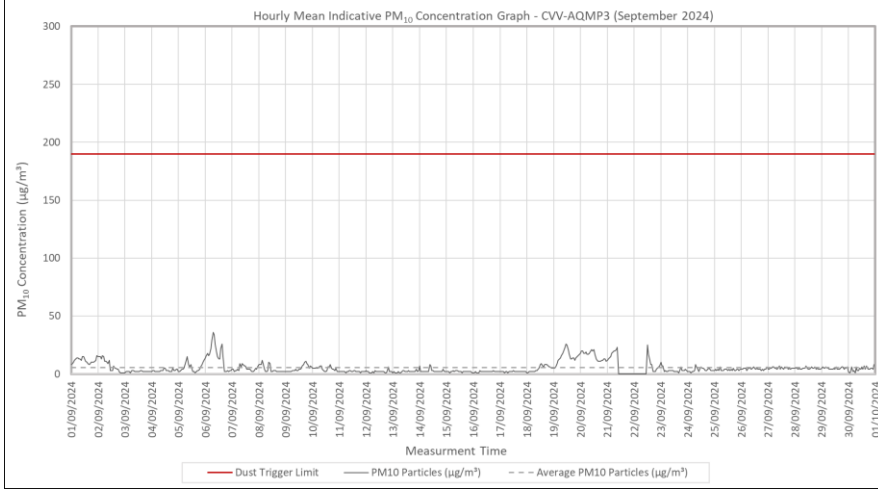
Figure 5: Construction dust 1-hour mean indicative PM₁₀ concentration for all dust monitors



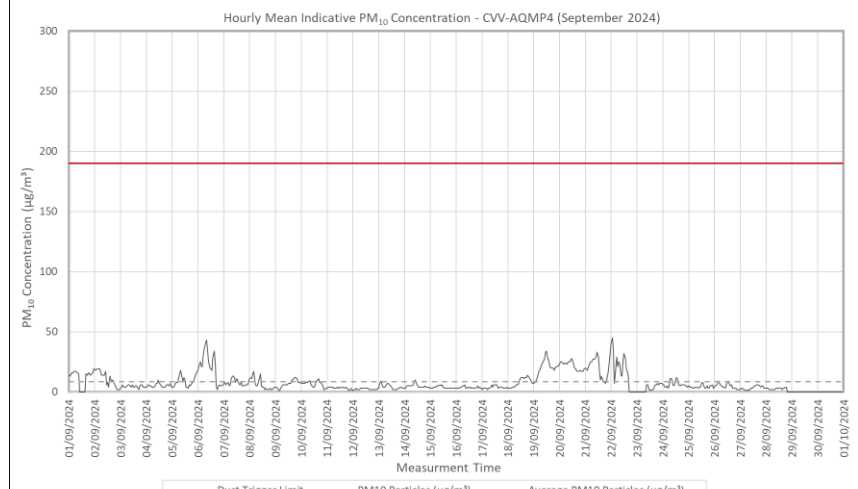




CVV-AQMP3



CVV-AQMP4



Appendix C – Air Quality Monitoring Results

Table 4: NO₂ monitoring locations around highways, NO₂ concentrations and monthly monitoring results with running mean for 2024 (µg/m³)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹²
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	22	22	21	14	16	14	Tube Missing	11					17
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	44	36	39	33	Tube Missing	Tube Missing	33	32					36
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	32	37	31	27	31	32	28	29					31
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	37	Tube Missing	27	27	34	24	27	26					29
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	26	Tube Missing	Tube Missing	24	Tube Missing	Tube Missing	26	24					25

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.

² The annual mean for diffusion tubes presented in the table above still require various analysis and adjustments to be undertaken before comparison to the Air Quality Objectives. The final corrected annual mean will be presented in the HS2 Annual Air Quality Report.

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean ¹²
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	35	34	28	25	28	27	14	26					27
HS2-000020BPN	Lamp post on B467	506767, 186224	33	35	29	24	28	Tube Missing	Tube Missing	26					29
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	42	35	Tube Missing	30	34	33	34	31					34
HS2-000020BQN	Lamp post on Park Road	506176, 185444	Tube Missing	39	31	29	44	22	27	25					31
HS2-000020BQP	Sign post on Long Lane	507614, 184663	37	29	33	26	Tube Missing	25	25	19					28
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	31	29	25	22	23	20	20	19					24