

## Air Quality and Dust Monitoring Monthly Report – August 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 July 2024 and August 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](http://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**

- HOAC Compound: operation;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Ground Investigation works;
- Pier Construction: arch from deck for FRC works for pile cap and pier, standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- ATFS: site preparation, 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, CFA piling, pile trimming and pile hat installation, FRC early works on SE and drainage works, South Abutment construction stage 2 –

earthworks, yard supporting activities, piling platform construction (Harvil Road) and load transfer platform construction (7-8), 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 stressing & grouting and crane assembly/disassembly;
- 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 plan;
- 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 and noise barrier installation;
- Deck Finishes – In-deck Construction: diaphragm walls, concrete works within the deck, drainage works within the deck and steel works within the deck;
- Landscaping: advanced works including removal of cofferdam, early earthworks including ground profiling and cut, initial ground drainage including manhole chamber, early soil placement, hardstanding removal and tree removal & vegetation clearance;
- RC Footbridge installation; and
- Jetty Removal and associated earthworks: Earthworks excavation, backfill, and landscaping, jetty removal, cutting piles and steelworks.

### **CVV Moorhall Road**

- North and South Moorhall Road: compound operation;
- Haul Road and Jetty Maintenance: operation and maintenance;
- Pier Construction: arch from deck and standard piers FRC works for pile cap and pier, post tensioning of AFD legs and tower crane mob / demob;
- ATFS: site preparation, 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, CFA piling, pile trimming and pile hat installation, FRC early works on SE and drainage works, South Abutment construction stage 2, South Abutment construction stage 2, South Abutment construction stage 2 – earthworks, yard supporting activities, piling platform construction (Harvil Road) and load transfer platform construction (7-8), soiling and seeding works, embankment FRC works;
- Environmental Maintenance;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;

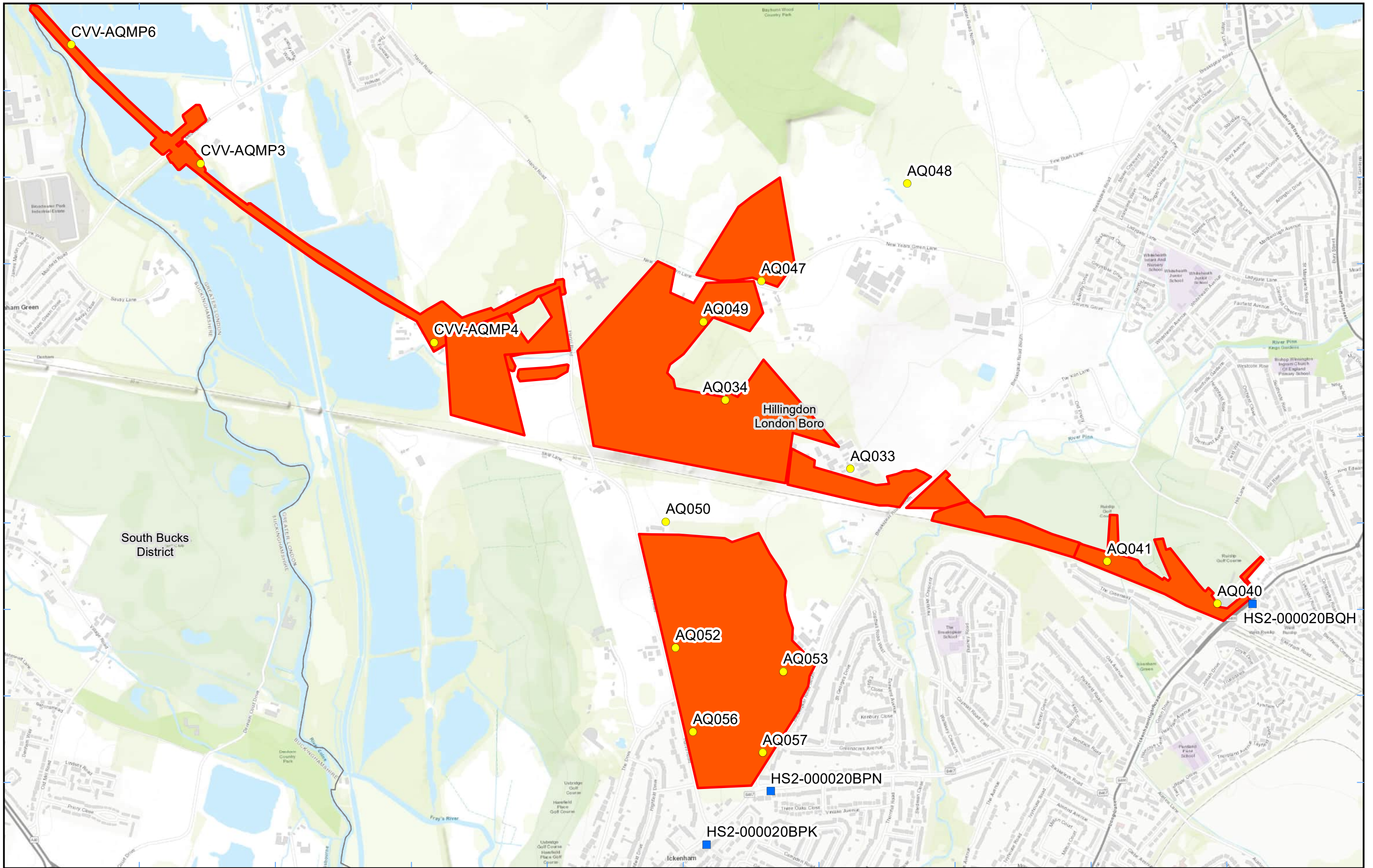
- River Colne Crossing: Emergency removal of obstruction to RC crossing;
- Launching Girder and Deck Works: span segmental erection with launching gantry, shoring steel structure erection and dismantling, external PT, internal PT stressing & grouting and crane assembly/disassembly;
- Deck Finishes Logistics: 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 plan;
- 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 and noise barrier installation;
- Deck Finishes – In-deck Construction: diaphragm walls, concrete works within the deck, drainage works within the deck and steel works within the deck;
- Landscaping: advanced works including removal of cofferdam, early earthworks including ground profiling and cut, initial ground drainage including manhole chamber, early soil placement, hardstanding removal and tree removal & vegetation clearance;
- RC Footbridge installation; and
- Jetty Removal and associated earthworks: Earthworks excavation, backfill, and landscaping, jetty removal, cutting piles and steelworks.

- 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 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 PM<sub>10</sub> concentrations of 190µg/m<sup>3</sup>, 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 2.
- 1.1.9 Data capture was below 90% for multiple monitors. AQ033 and AQ034 was below 90% (88.6% and 79.4% respectively) due to the monitors being powered by hydrogen generators and needing replenishing/exchange of hydrogen cylinders.

- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO<sub>2</sub>) 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 NO<sub>2</sub> monitoring locations and results are presented in Appendix C, Table 3, together with the 2024 running mean.
- 1.1.13 There were no (0) complaints received during the reporting period (August 2024).

# Appendix A – Worksites and Monitoring Locations

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




**Legend**

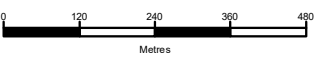
- Diffusion Tube
- Worksite
- Dust Monitor
- District Borough Unitary Boundaries

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


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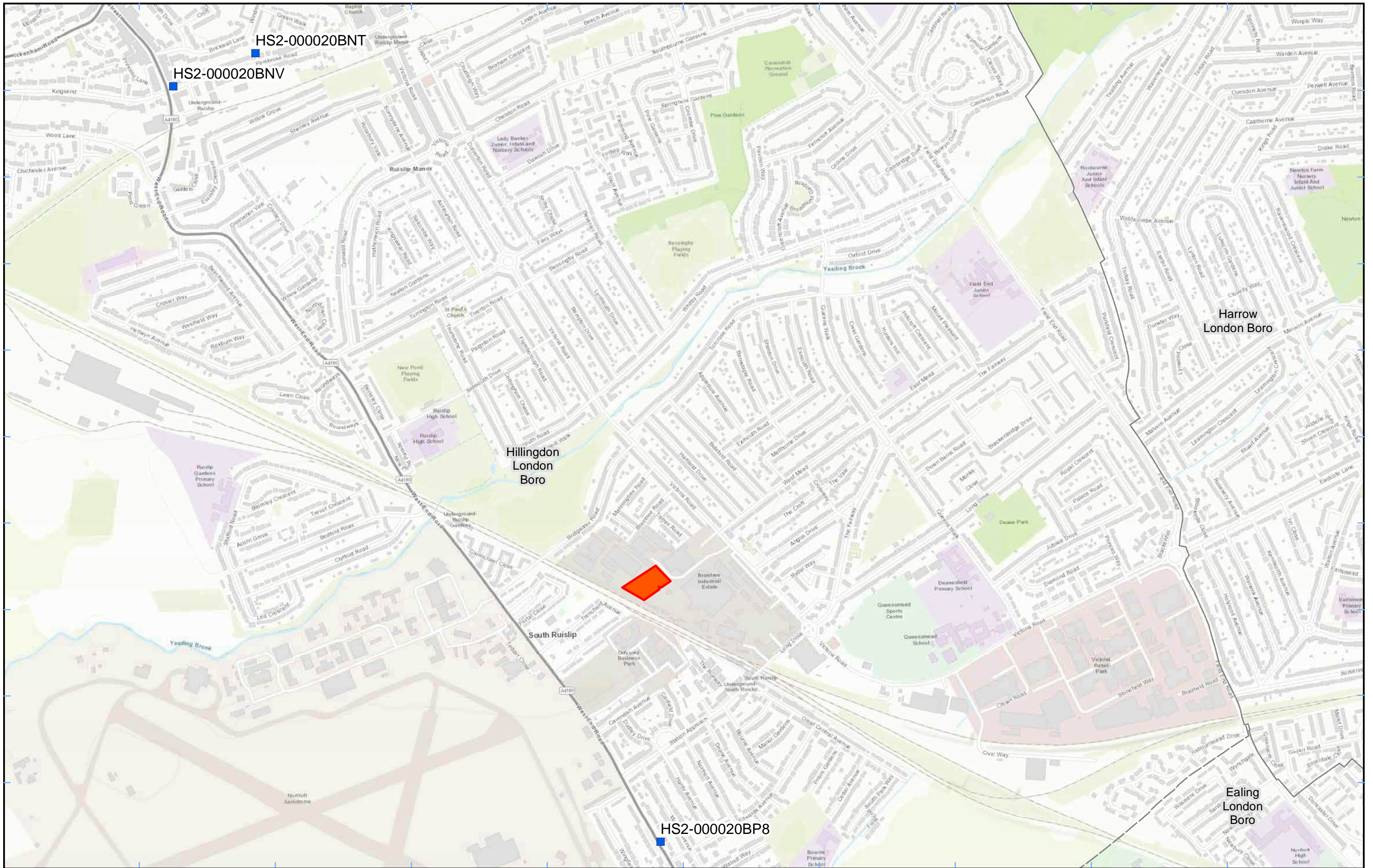
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**Legend**  
■ Diffusion Tube  District Borough Unitary Boundaries  
 Worksite

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

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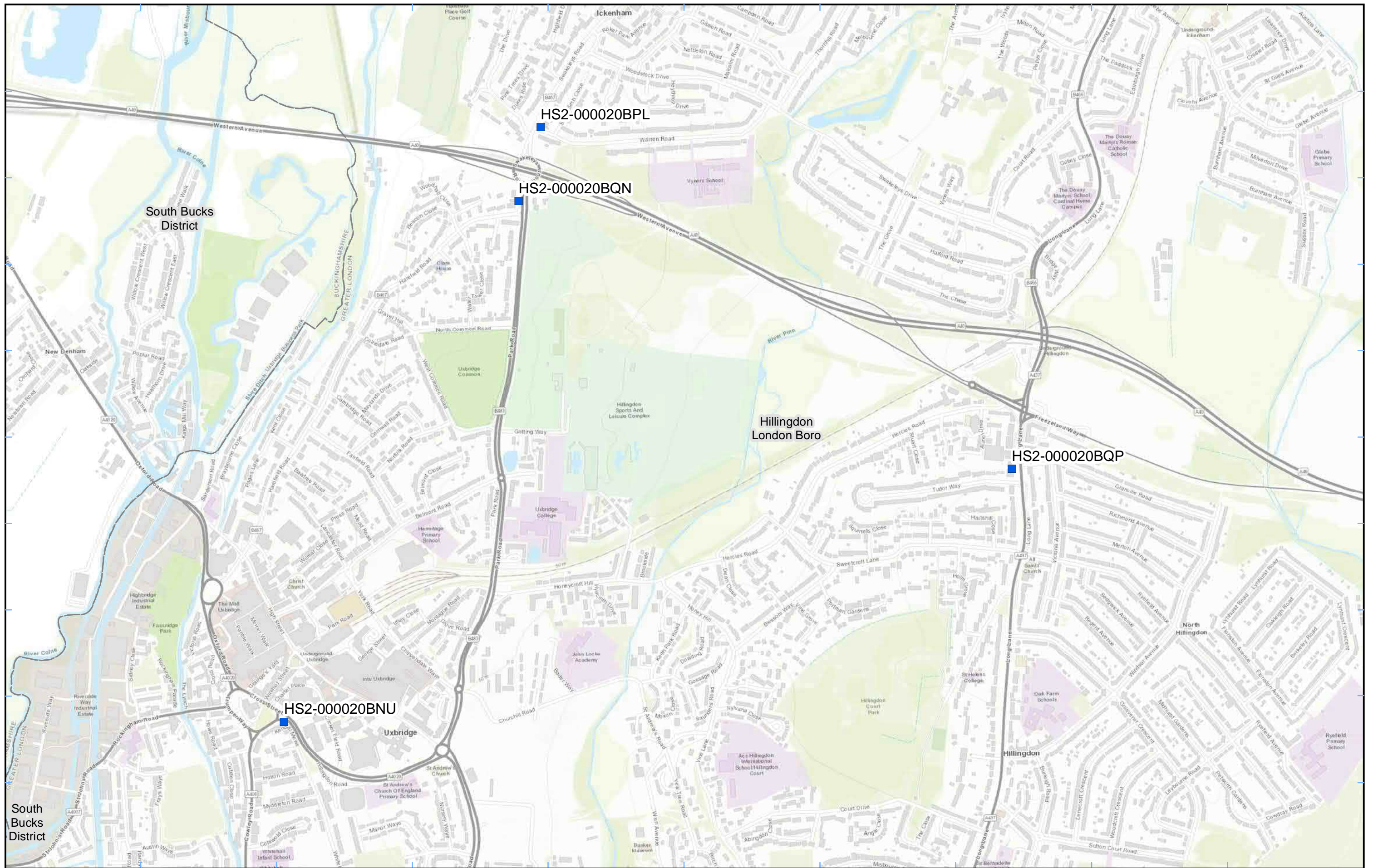
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Metres

**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)**  
**London Borough of Hillingdon**

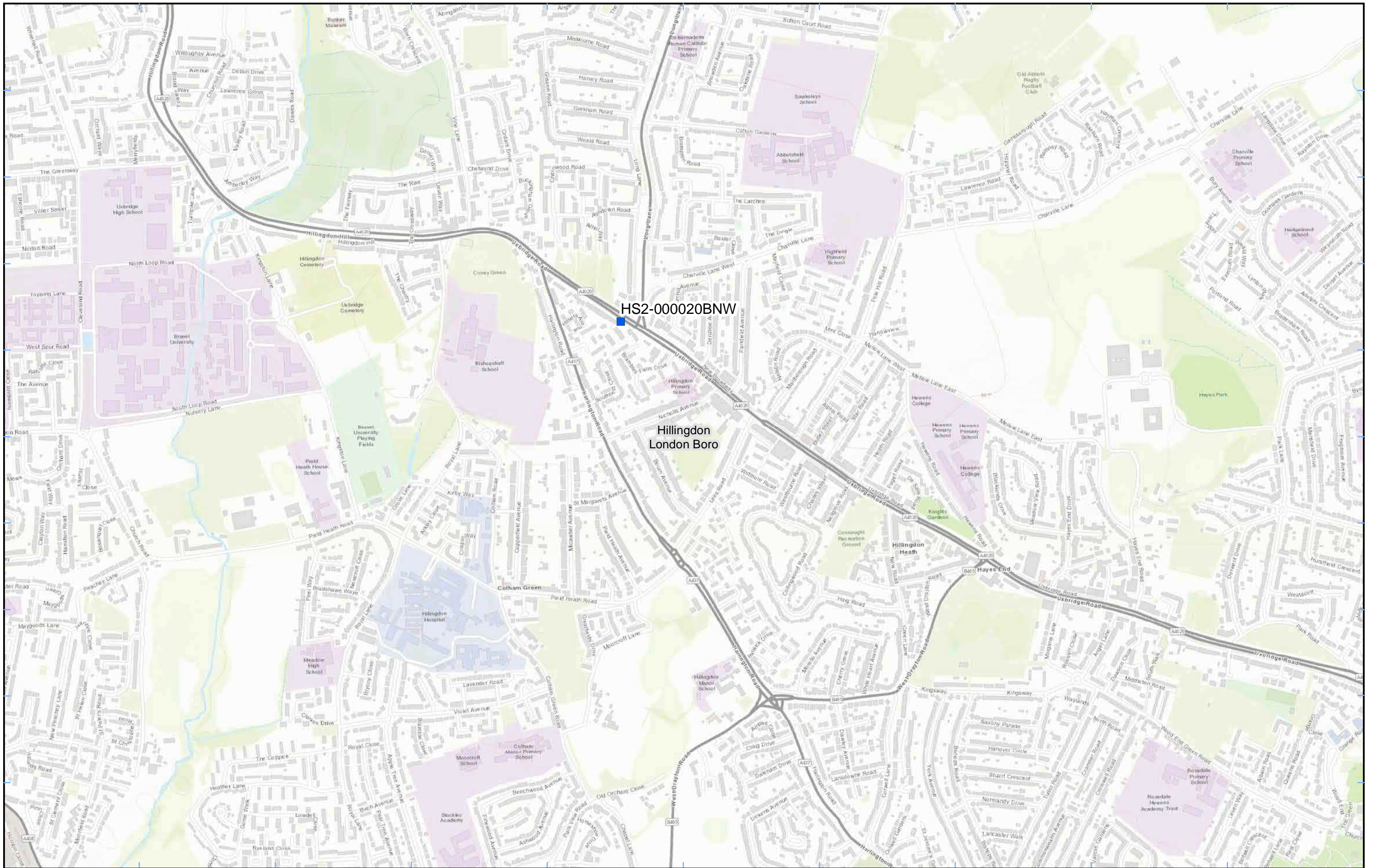
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- Legend**
- Diffusion Tube
  - District Borough Unitary Boundaries

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

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Scale at A3: 1:10,000

Metres

**Date: 08/12/20**

## Appendix B – Dust Monitoring Results

Table 1: 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 <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	14.0	1.0	70.8	0	88.6
AQ034	506608, 187592	Cophall Cutting	L	Yes	N	46.0	3.0	516.1	19	79.4
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	13.0	1.6	49.2	0	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	12.9	1.3	71.0	0	100.0
AQ047	507942, 188007	West Ruislip Portal	M	Yes	N	14.9	1.8	168.9	0	100.0
AQ048	507243, 188349	Northern Sustainable Placement Area	M	Yes	N	11.8	1.1	122.4	0	100.0
AQ049	506531, 187865	Cophall North, Ancient Woodland	M	Yes	N	17.6	1.4	231.6	1	100.0
AQ050	506399, 187166	Cophall South Compound	H	Yes	N	12.3	1.2	59.1	0	99.7
AQ052	506433, 186725	Southern Sustainable Placement Area	H	Yes	N	14.6	3.0	41.0	0	100.0
AQ053	506811, 186643	Southern Sustainable	H	Yes	N	15.2	1.1	180.3	0	100.0

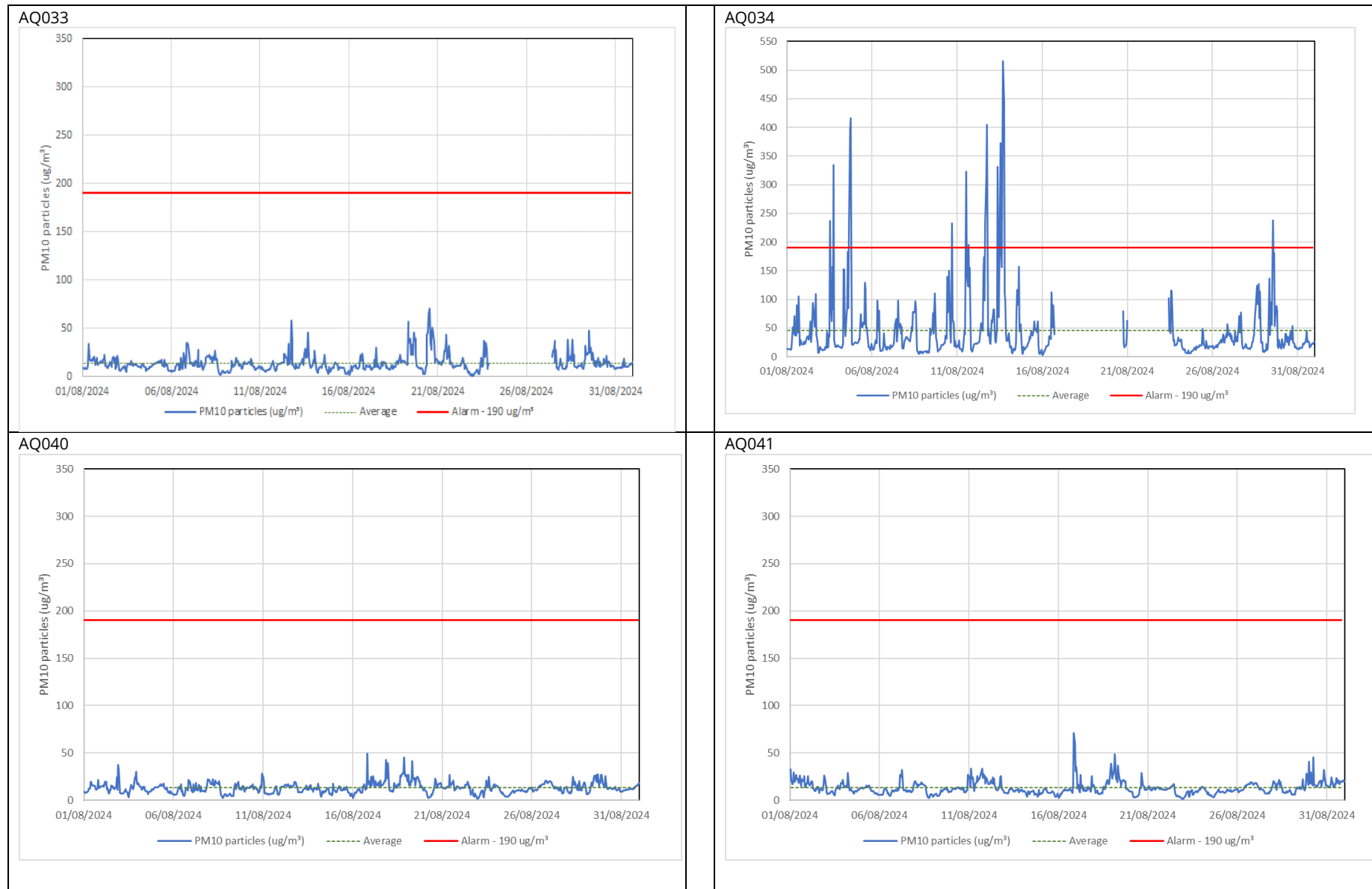
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
		Placement Area								
AQ056	506494, 186432	Southern Sustainable Placement Area	M	Yes	N	15.7	4.0	41.0	0	100.0
AQ057	506739, 186359	Southern Sustainable Placement Area	M	Yes	N	16.0	4.0	45.0	0	90.3
CVV-AQMP3	504773, 188419	On the eastern boundary along south side of Moorhall Road	M	Yes	Y	5.3	1.0	40.0	0	100.0
CVV-AQMP4	505589, 187793	On the western boundary of HOAC at Dews Lane	M	Yes	Y	8.1	1.0	49.0	0	100.0

Table 2: Summary of exceedances during period (August 2024)

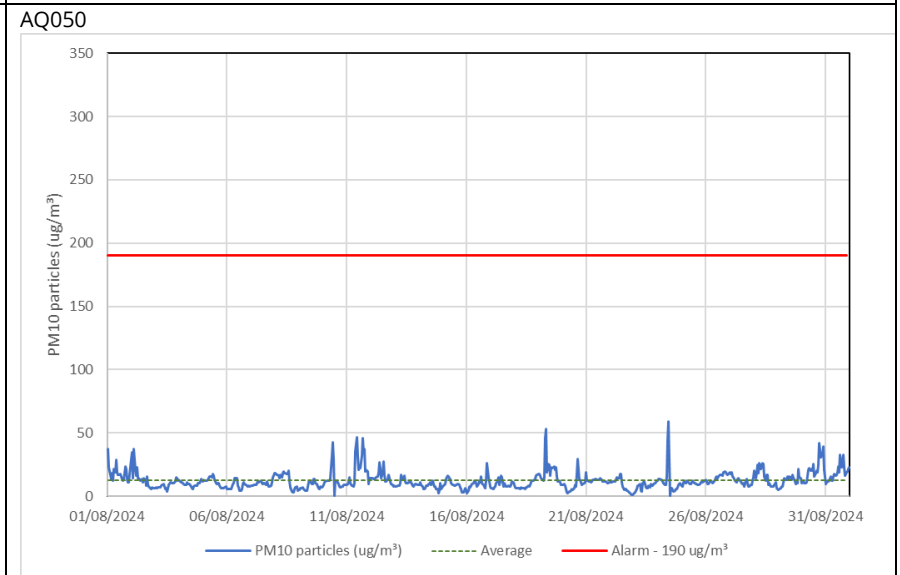
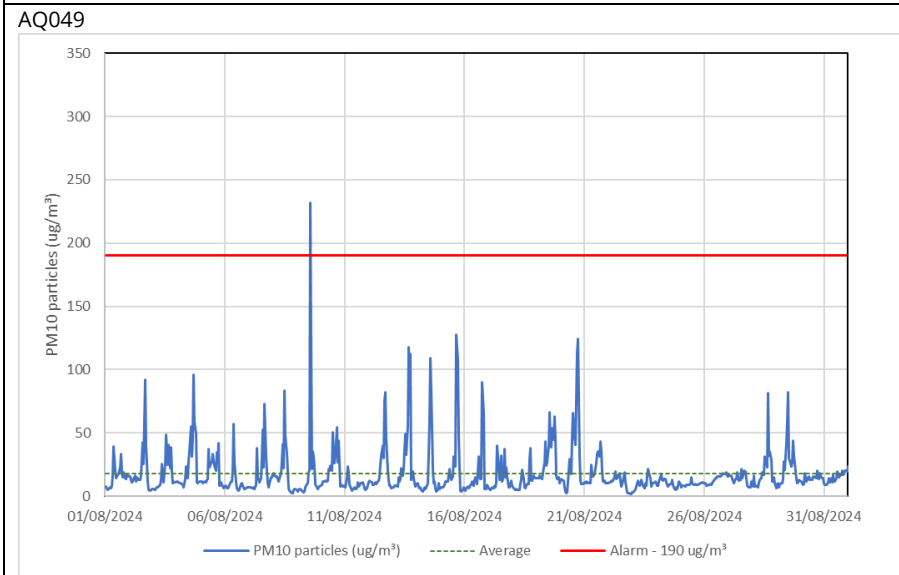
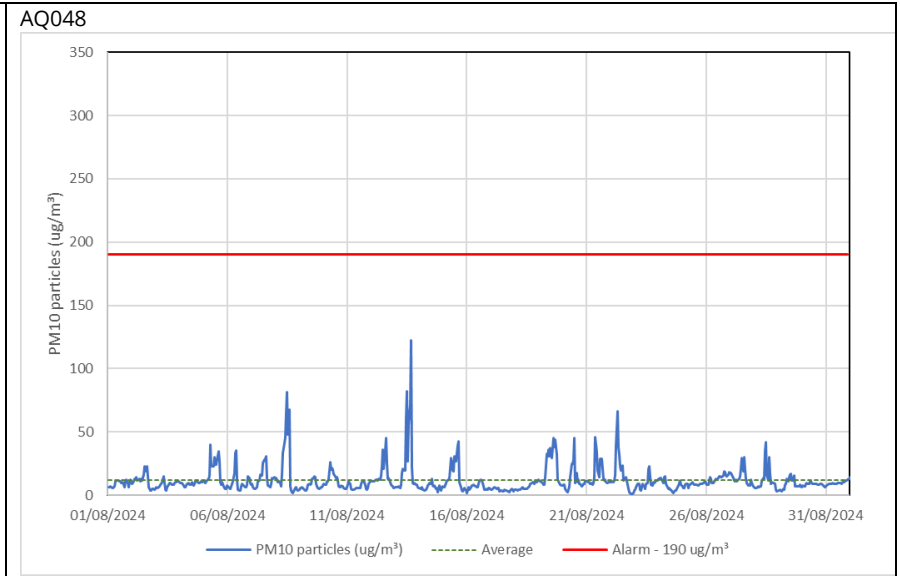
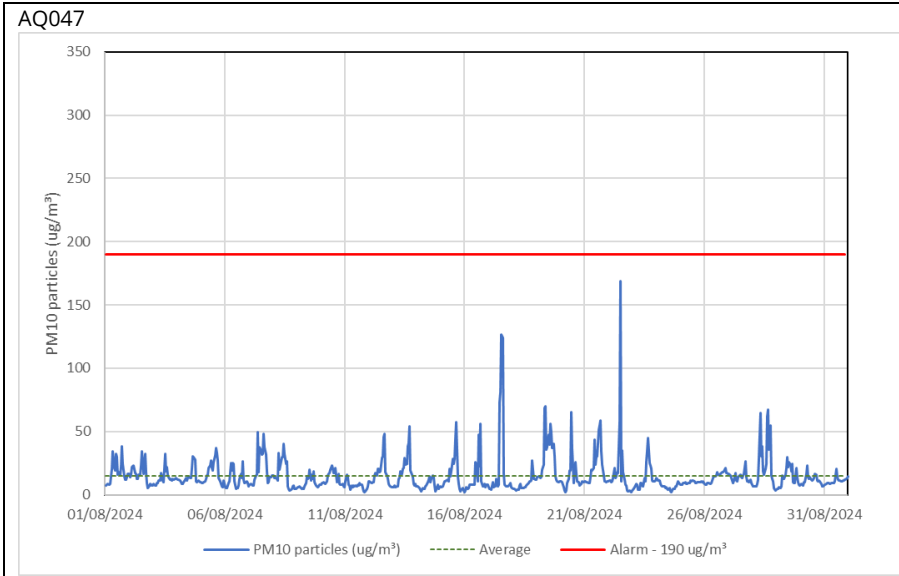
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	<p>03/08/2024 12:01 – 13:00; 236.4 µg/m<sup>3</sup> 17:01 – 18:00; 333.8 µg/m<sup>3</sup></p> <p>04/08/2024 15:01 – 16:00; 226.4 µg/m<sup>3</sup> 16:01 – 17:00; 396.5 µg/m<sup>3</sup> 17:01 – 18:00; 415.8 µg/m<sup>3</sup></p> <p>29/08/2024 12:01 – 13:00; 237.5 µg/m<sup>3</sup></p>	<p>At the times of the trigger alerts from monitor AQ034, which is located at the south-eastern boundary of the ancient woodland on the North Copthall site adjacent to the internal haul road there was the same daily regular movements of dump trucks and other large machinery.</p> <p>The haulage road is regularly damped down throughout each day with regular circuits of the driven water bowsers.</p> <p>However, it is considered that the haul road experienced periods drying out in that location on each occasion and it is considered this was the cause of the trigger alerts.</p>	<p>Subsequent monitored levels on each occasion reduced and remained low thereafter.</p> <p>With the dry, warm weather the on-site bowsers will continue to maintain circuits of all the internal haul routes throughout each day.</p>
	<p>10/08/2024 16:01 – 17:00; 233.0 µg/m<sup>3</sup></p> <p>11/08/2024 12:01 – 13:00; 322.7 µg/m<sup>3</sup> 15:01 – 16:00; 195.5 µg/m<sup>3</sup></p> <p>12/08/2024 15:01 – 16:00; 234.4 µg/m<sup>3</sup> 16:01 – 17:00; 311.0 µg/m<sup>3</sup> 17:01 – 18:00; 404.3 µg/m<sup>3</sup> 18:01 – 19:00; 223.0 µg/m<sup>3</sup></p> <p>13/08/2024 08:01 – 09:00; 331.6 µg/m<sup>3</sup> 09:01 – 10:00; 193.4 µg/m<sup>3</sup> 10:01 – 11:00; 372.8 µg/m<sup>3</sup> 11:01 – 12:00; 327.0 µg/m<sup>3</sup> 12:01 – 13:00; 516.1 µg/m<sup>3</sup> 13:01 – 14:00; 446.2 µg/m<sup>3</sup></p>	<p>On Friday 9<sup>th</sup> an onsite incident occurred. A tractor with a trailer attachment loaded with rebar ascended a gradient on one of the site haul roads, the trailer detached and began to roll backward. The hoses connecting the tractor and trailer snapped and the emergency brakes activated, halting the trailer. No injuries resulted.</p> <p>Given the seriousness of the incident, it did however mean that no further tractors with trailer attachments were permitted to be used whilst the investigation was underway. This included no tractor-pulled water bowsers for dust suppression.</p> <p>This particular stretch of haul road by the ancient woodland (by AQ034) has its own dedicated tractor-pulled bowser given its frequent use; this was paused.</p> <p>Large driven 10,000l water bowsers continued operating so dust suppression on all haul roads across the site continued but, along this stretch it was not sufficient, given the 12 triggers received over the 4 days.</p> <p>Tractor-pulled bowsers on the site resumed operation on the 14<sup>th</sup>.</p> <p>A review of the other nearby perimeter monitors (AQ033, AQ050, AQ052, AQ053, AQ056 and AQ057), all nearer residential receptors, showed no elevated readings over the same period.</p>	<p>Circuits of tractor-pulled bowsers on the site resumed operation on the 14<sup>th</sup> August. Site conditions were kept under review given the continued dry, hot weather.</p>

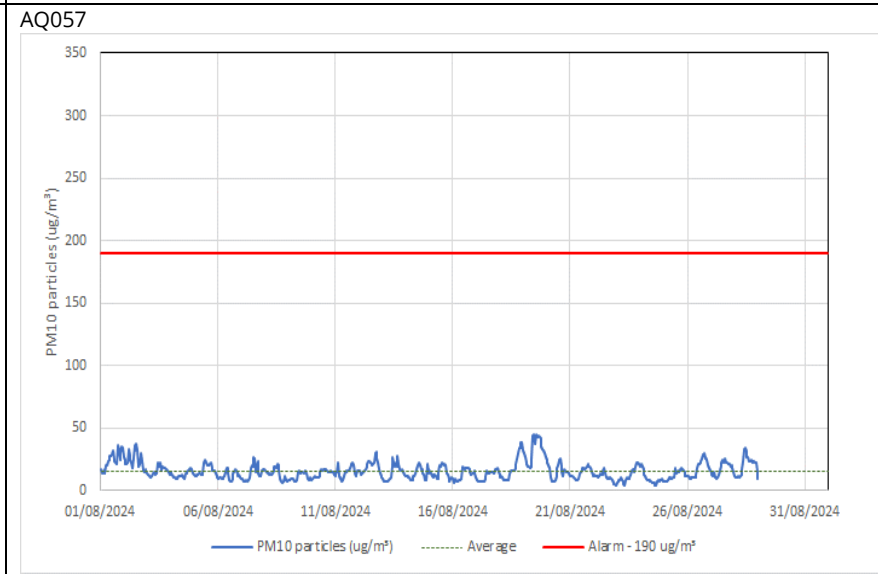
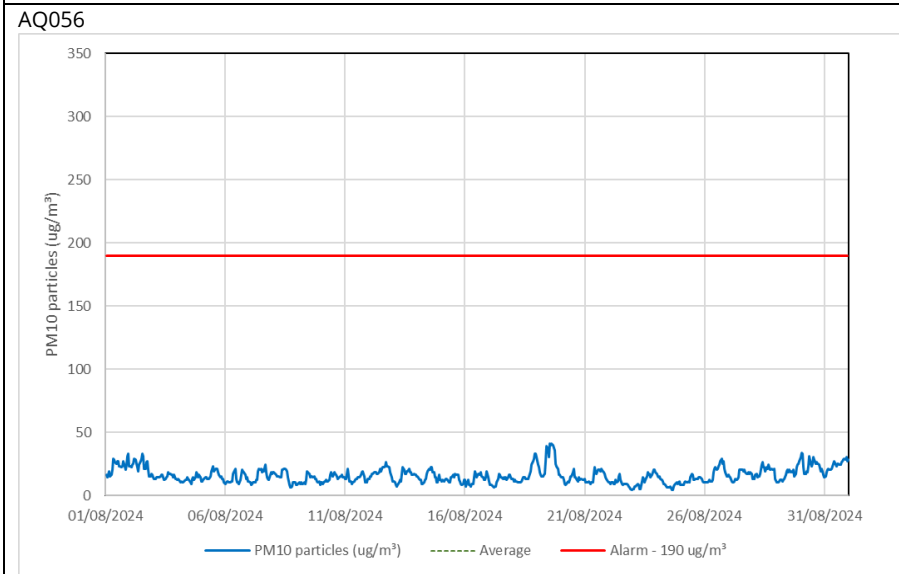
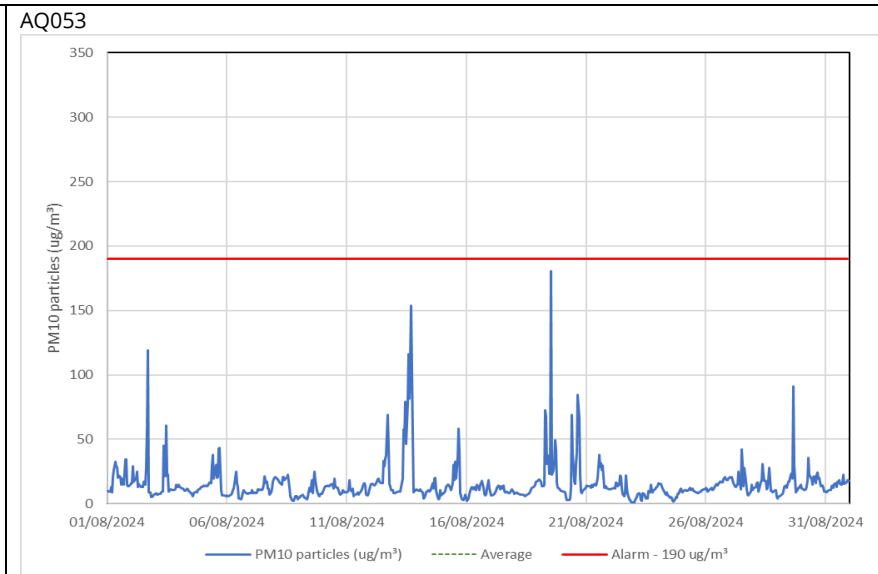
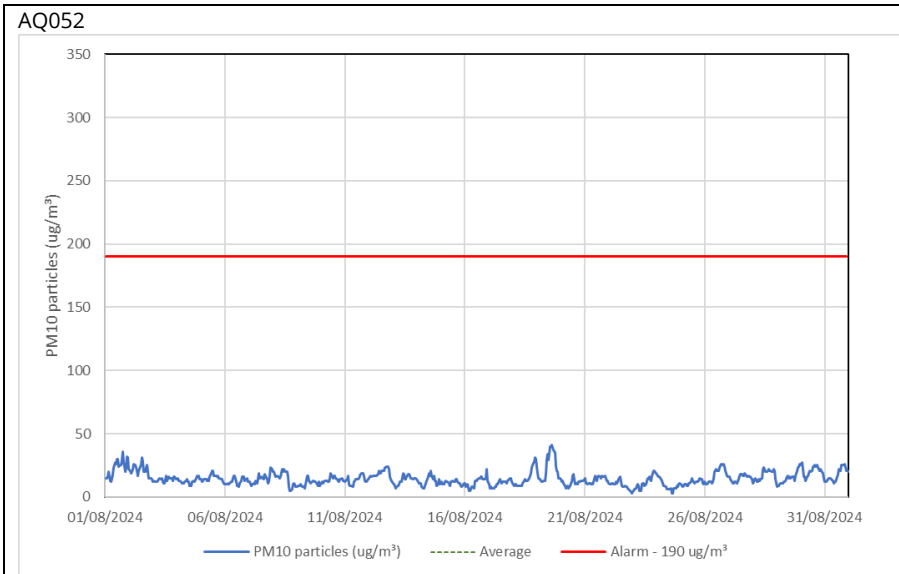
AQ049	09/08/2024 13:01 – 14:00; 231.6 µg/m <sup>3</sup>	<p>At the times of the trigger alert from monitor AQ049 which is located at the western boundary of the ancient woodland on the North Cophall site adjacent to the internal haul road there was the same daily regular movements of dump trucks and other large machinery.</p> <p>The haulage road is regularly damped down throughout each day with regular circuits of the driven water bowsers.</p> <p>However, it is considered that the haul road experienced a brief drying out in that location and it is considered this was the cause of the trigger alert.</p>	<p>Subsequent monitored levels reduced and remained low thereafter.</p> <p>With the dry, warm weather the on-site bowsers will continue to maintain circuits of all the internal haul routes throughout each day.</p>
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Figure 5: Construction dust 1-hour mean indicative PM<sub>10</sub> concentration for all dust monitors

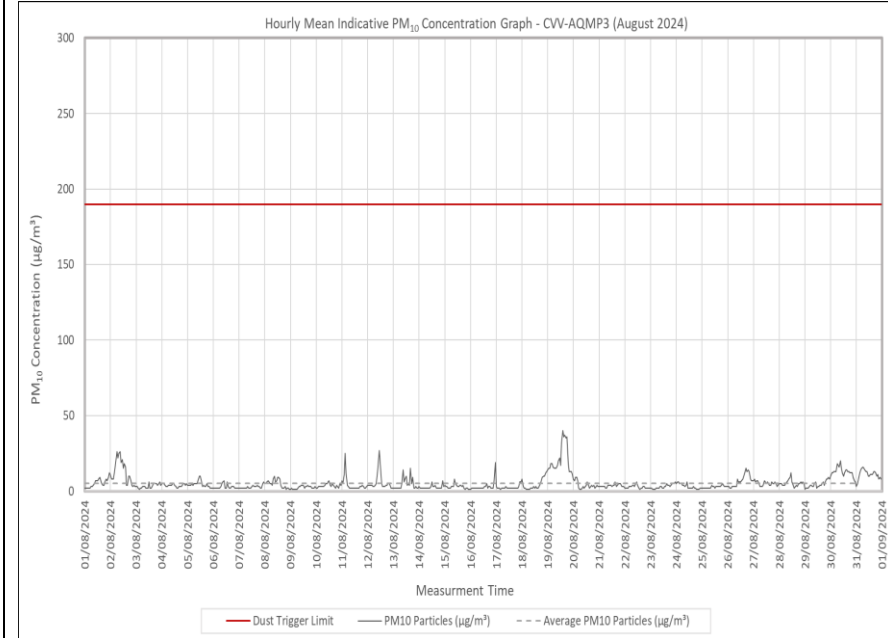




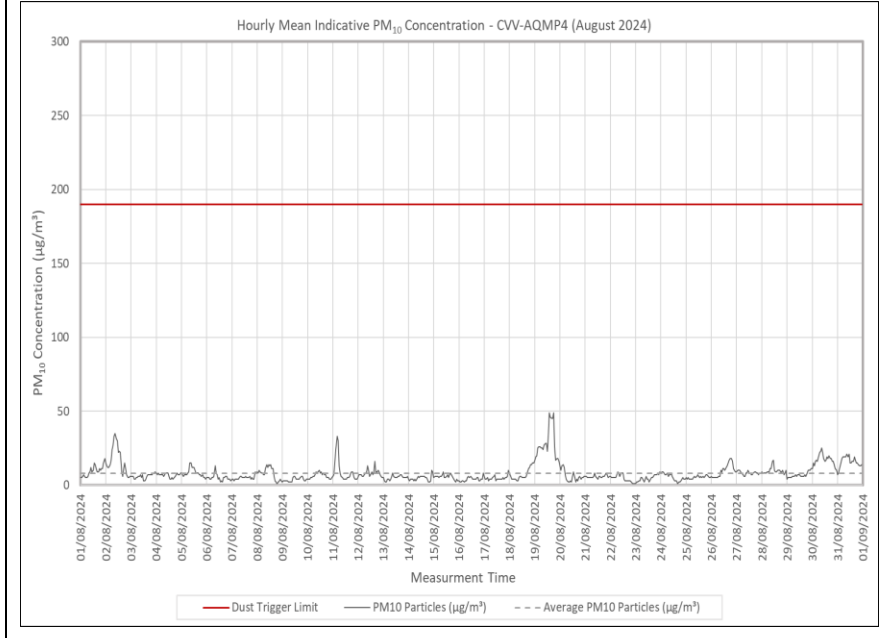




### CVV-AQMP3



### CVV-AQMP4



## Appendix C – Air Quality Monitoring Results

Table 3: NO<sub>2</sub> monitoring locations around highways, NO<sub>2</sub> concentrations and monthly monitoring results with running mean for 2024 (µg/m<sup>3</sup>)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean <sup>12</sup>
HS2-000020BNT	Lamp post on Pembroke Road	509678, 187214	22	22	21	14	16	14	Tube Missing						18
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	44	36	39	33	Tube Missing	Tube Missing	33						37
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	32	37	31	27	31	32	28						31
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	37	Tube Missing	27	27	34	24	27						29
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	26	Tube Missing	Tube Missing	24	Tube Missing	Tube Missing	26						25

<sup>1</sup> 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.

<sup>2</sup> 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 <sup>12</sup>
HS2-000020BPL	Warren Road sign post on corner of Swakeleys Road and Warren Road	506240, 185660	35	34	28	25	28	27	14						27
HS2-000020BPN	Lamp post on B467	506767, 186224	33	35	29	24	28	Tube Missing	Tube Missing						30
HS2-000020BQH	Lamp post on High Road Ickenham	508451, 186879	42	35	Tube Missing	30	34	33	34						35
HS2-000020BQN	Lamp post on Park Road	506176, 185444	Tube Missing	39	31	29	44	22	27						32
HS2-000020BQP	Sign post on Long Lane	507614, 184663	37	29	33	26	Tube Missing	25	25						29
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	31	29	25	22	23	20	20						24