

Air Quality and Dust Monitoring Monthly Report – December 2021 London Borough of Hillingdon



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 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 The current 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 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, concrete works and materials management;
 - Northern Sustainable Placement Area (NSPA) conveyor construction and groundworks; and
 - Southern Sustainable Placement Area (SSPA) site mobilisation and set- up.

CVV Dews Lane

- Jetty piling: piling plant, support plant, platform and compound;
- HOAC Compound: compound operation;
- 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, bored pile break-down to prepare the pile surface, grout curtain around viaduct pile groups maintenance plant;
- Haul Road 26,000-26,600: earthworks, and drainage;
- INNS-GUC to Harvil Road: removal;
- Ground Investigation Works: GI works;
- North Abutment: slab & wall construction, backfilling at abutment walls;
- South Abutment: earthworks, driven pile mobilisation and CFA piling-mobilisation & installation;

- Core Drilling of Concrete;
- Pile Trimming;
- Grand Union Canal Work: pontoon installation and condition survey;
- Harefield Lake No.2: compensation pond;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversions;
- Environmental Maintenance;
- NYGB River Crossing;
- Cofferdam Excavation; and
- Utilities.

CVV Moorhall Road

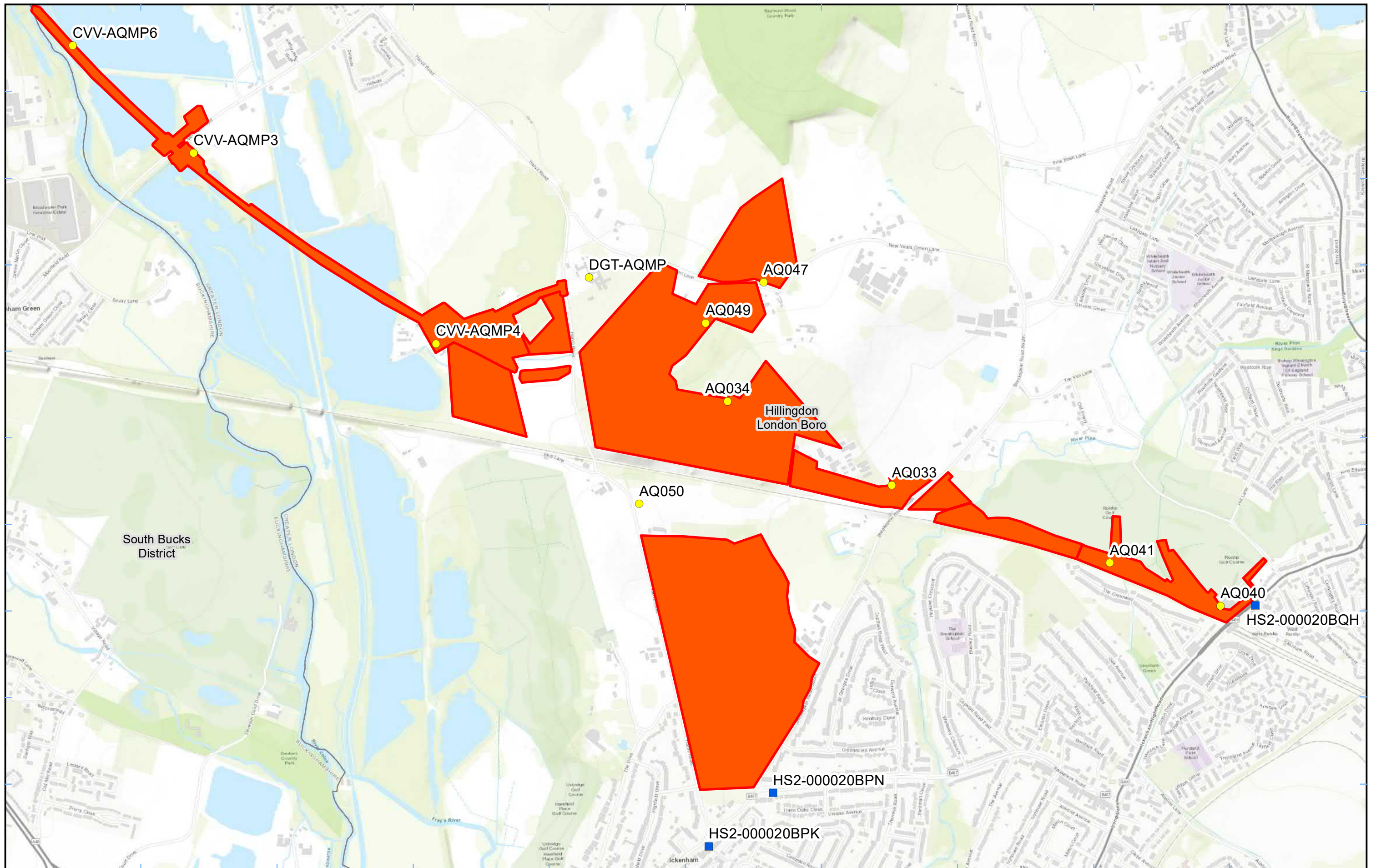
- Jetty piling: piling plant, support plant, platform and compound;
- Cofferdam Sheet Piling: piling plant and support plant; and
- Permanent main piling works: boring pile, desanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pile break-down to prepare the pile surface, grout curtain around viaduct pile groups maintenance plant.
- South & North Moorhall road compound: compound operation and de-sanding compound;
- Haul Route: preparation works, finishing works and fencing;
- INNS-River Colne to GUC: removal;
- Ground Investigation Works: GI works;
- River Colne Realignment;
- Crossings Tarmac (A412 & Moorhall Road Junction);
- CFA Pile Caps at P22 & P30: CFA piling, FRC to pile caps and earthworks
- Pumping water management from ch 25.900 to 29.500;
- Maintenance of the haul road from ch 25.900 to 29.500;
- Satellite welfares;
- Generator farms;
- Core Drilling of Concrete;
- Pile Trimming;
- A412 Gas Crossing;
- Emergency dismantling;
- Grand Union Canal Work: pontoon installation and condition survey;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversion;
- Environmental Maintenance;
- Cofferdam Excavation; and
- Utilities.

1.1.5 Eleven (11) dust monitors are installed around worksites, where works are underway. The sites returned a low to medium 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 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.
- 1.1.8 There were thirty-two (32) dust trigger alerts recorded during the monitoring period (December 2021). Triggers are presented in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in December 2021 due to power supply issues.
- 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 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 2021 running mean.
- 1.1.13 There were no (0) complaints received during this reporting period.

Appendix A – Worksites and Monitoring Locations


Figure 1 to Figure 4: Worksites and 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



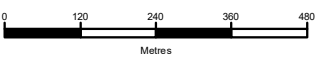
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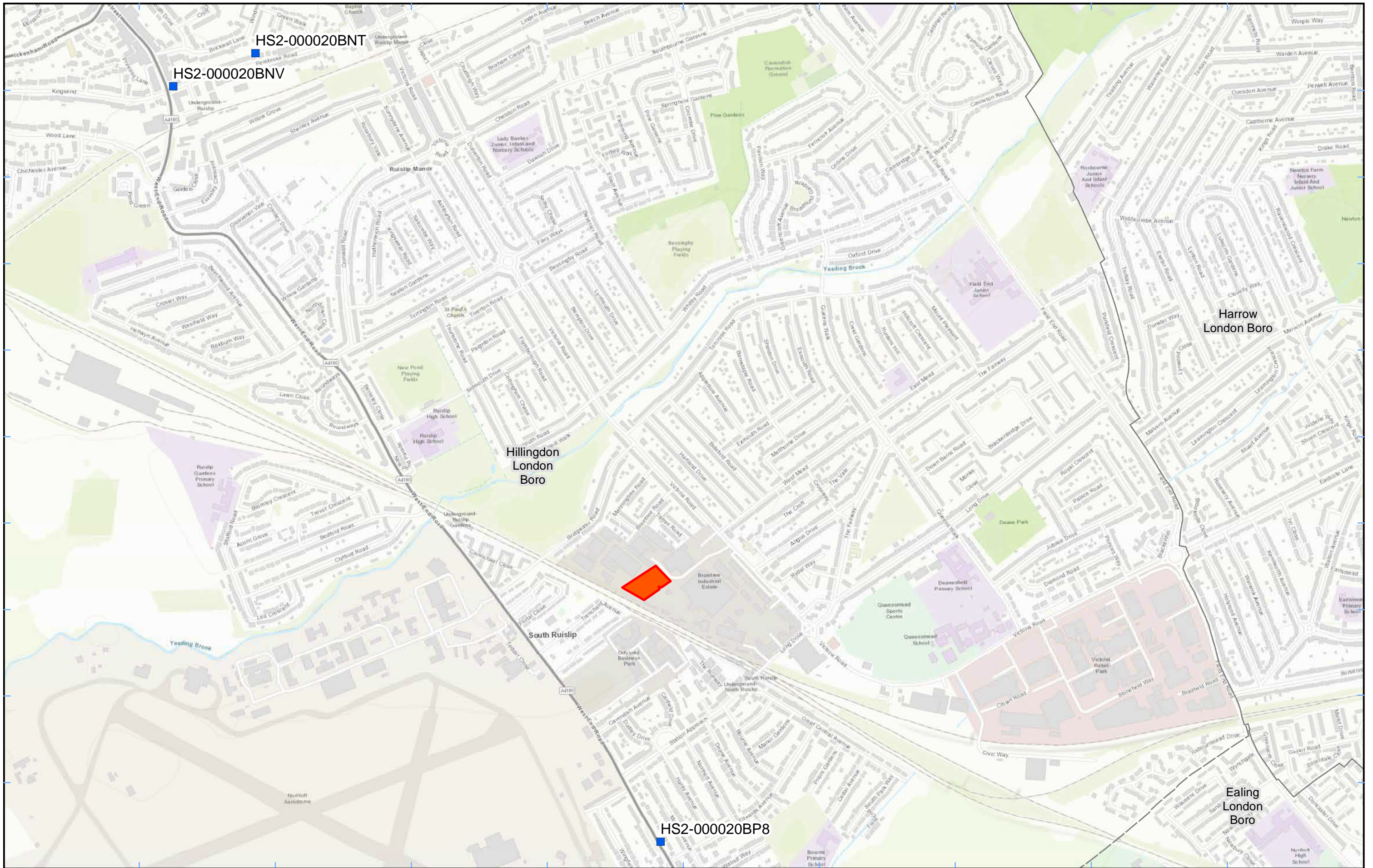


Scale at A3: 1:12,000



Metres

Date: 03/11/21



Legend
■ Diffusion Tube District Borough Unitary Boundaries
 Worksite

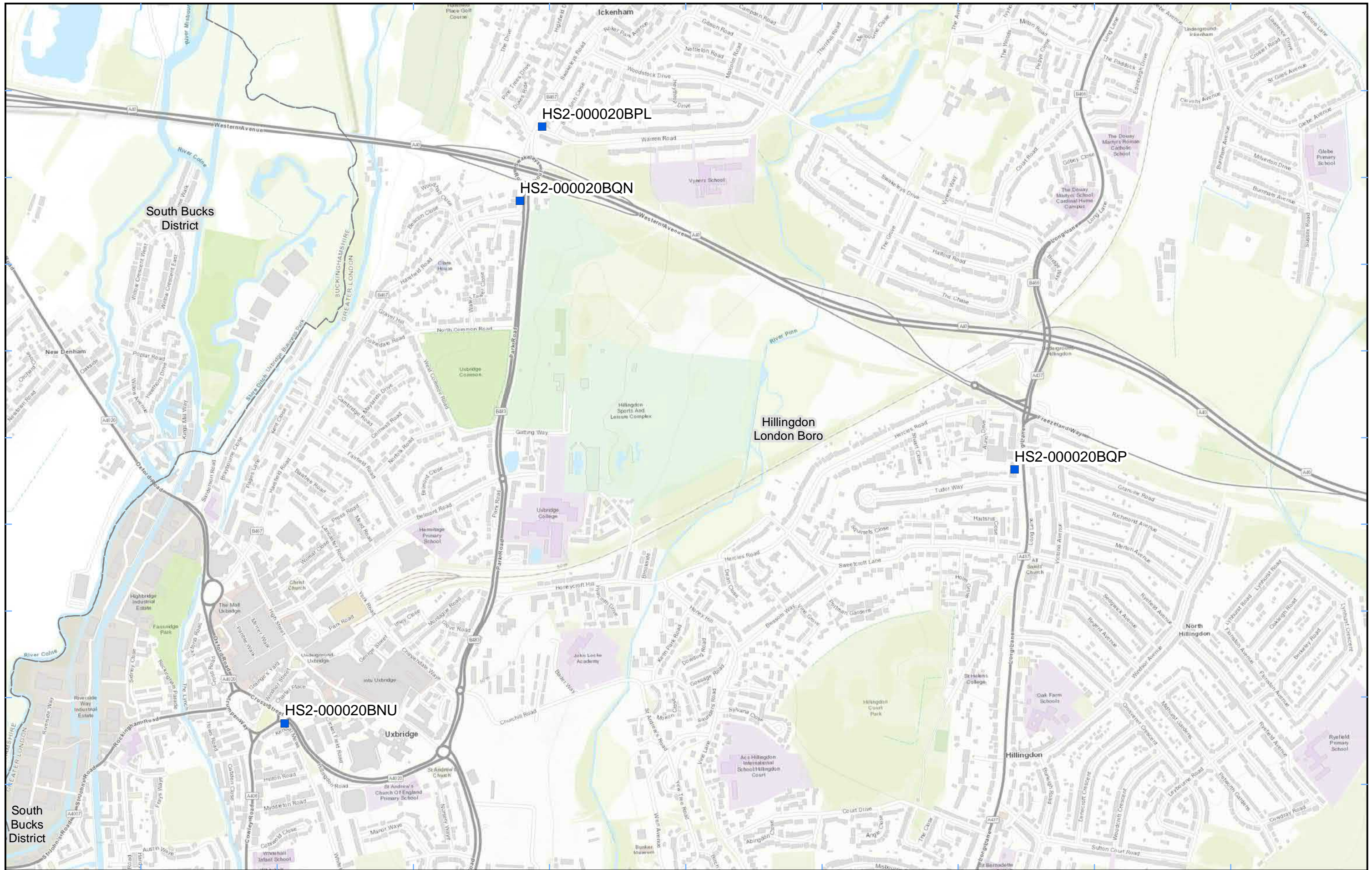
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Map Number
 Map Name
**Worksite and Monitoring Locations
 In LBH (Sheet 2)**
 London Borough of Hillingdon

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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

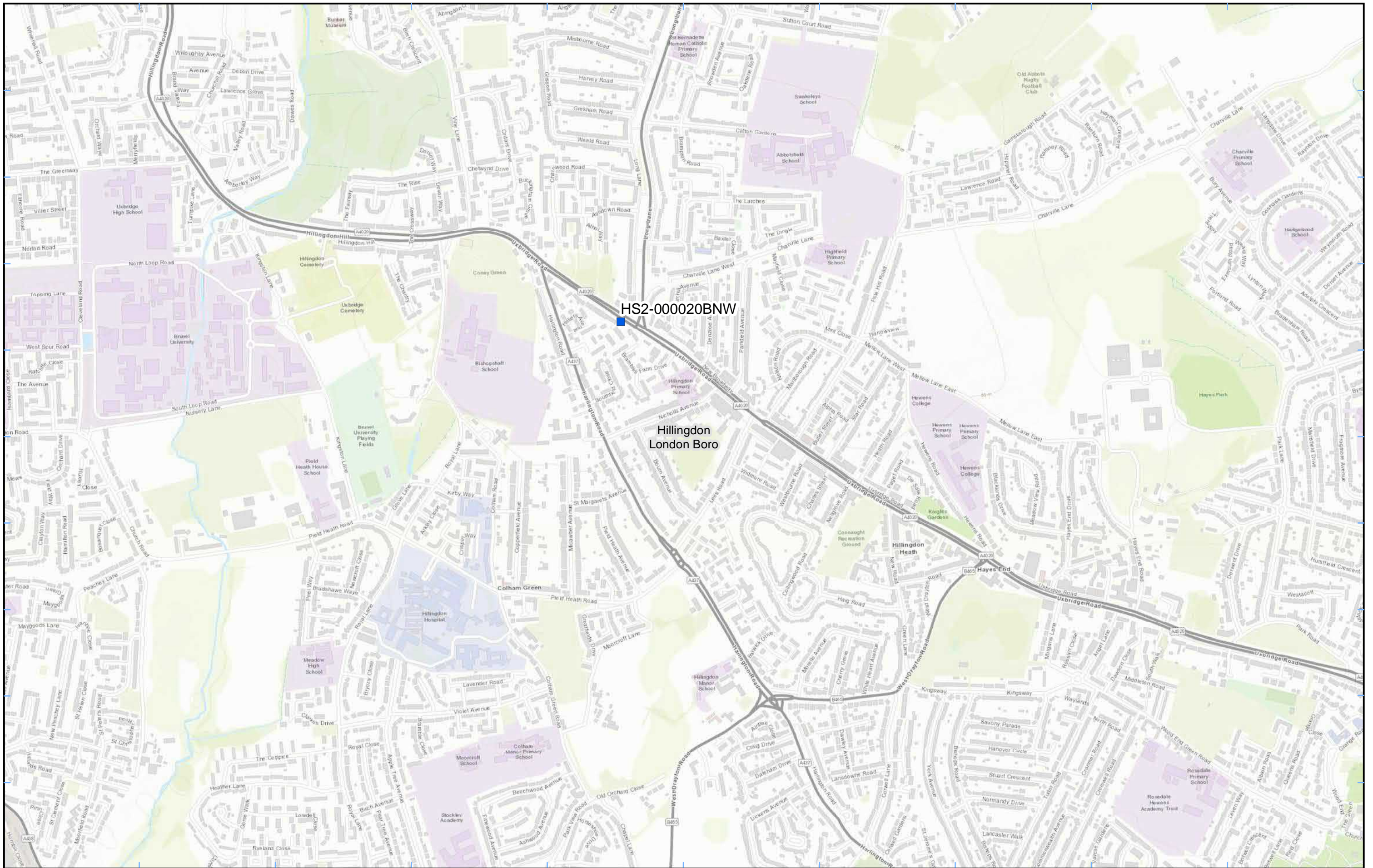
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- Legend**
- Diffusion Tube
 - District Borough Unitary Boundaries

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



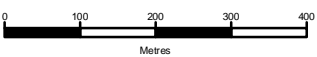
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Metres

Date: 08/12/20

Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and December 2021 results

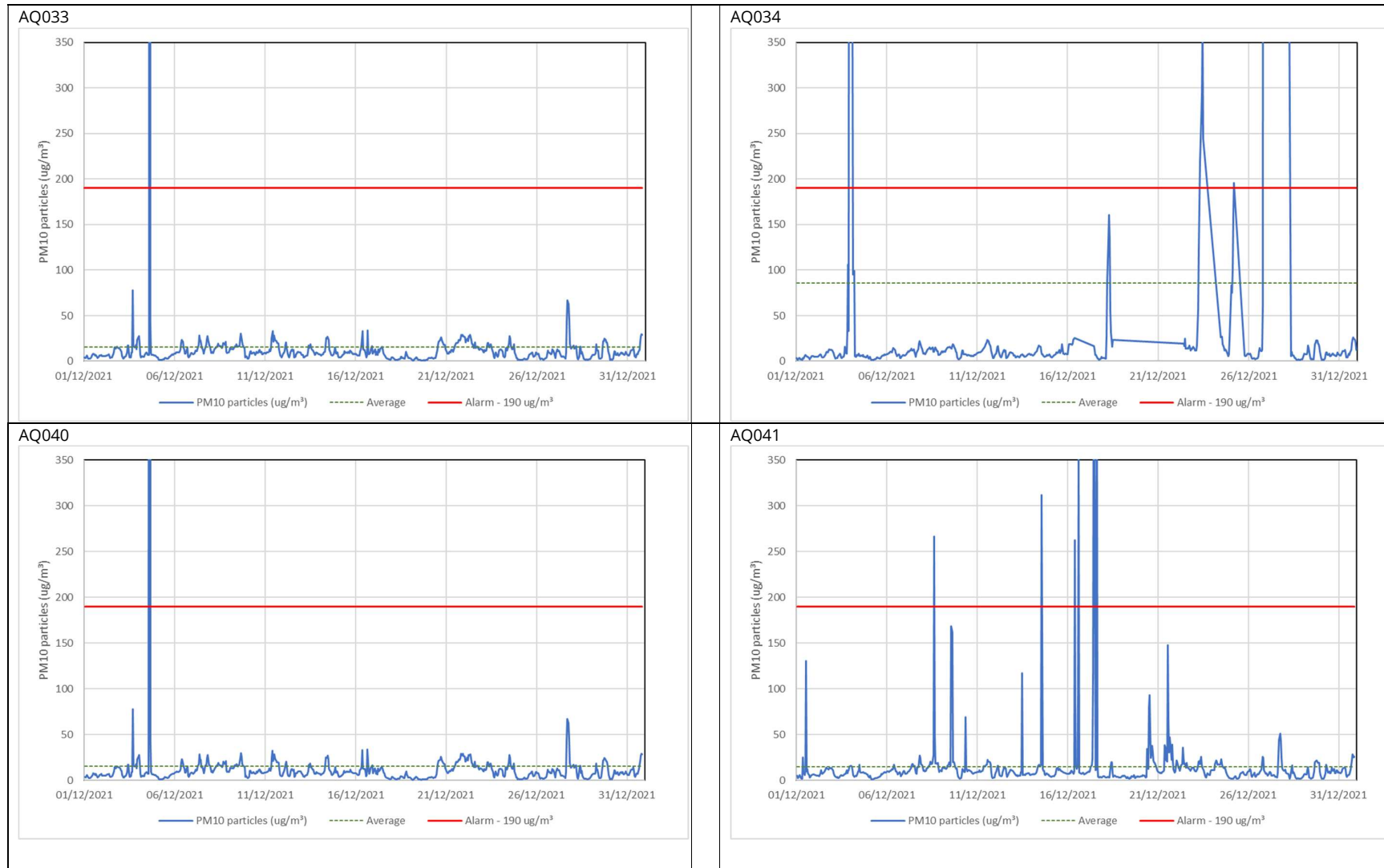
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1- hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ033	507045, 187352	Breakspear Road South	M	Yes	N	6.7	0	34.1	0	100
AQ034	506608, 187592	Cophall Cutting	L	Yes	N	86.1	1.2	6527.9	19	75.6
AQ040	508328, 186880	West Ruislip Golf Course	M	Yes	N	15.7	0.8	3928.4	1	100.0
AQ041	507942, 187028	West Ruislip Portal	M	Yes	N	15.0	1.6	274.8	2	100.0
AQ047	507942, 187029	West Ruislip Portal	M	Yes	N	14.9	0.9	156.6	0	100.0
AQ049	506531, 187865	Cophall North, Ancient Woodland	M	Yes	N	0.0	0	0	0	0.0
AQ050	506531, 187865	Cophall South Compound	M	Yes	N	19.4	0.9	1885.1	10	100.0
CVV-AQMP3	504773, 188419	Moorhall Road	M	Yes	Y	6.4	1.0	16.0	0	14.0
CVV-AQMP4	505589, 187793	Dews Lane	M	Yes	Y	7.5	1.0	36.0	0	100.0
DGT-AQMP	506124, 188025	Harvil Road.	M	Yes	Y	8.0	1.0	35.0	0	79.0
CVV-AQMP6	504321, 188835	Moorhall road.	M	Yes	Y	7.0	1.0	65.0	0	23.0

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

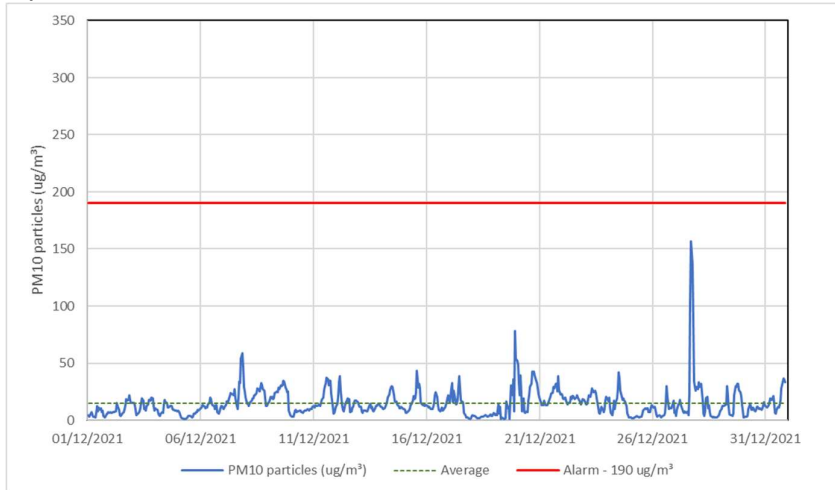
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ034	03/12/2021 22:01 - 23:00; 1074.6 ug/m ³	Triggers were all received during the early hours of morning or when the site was shut no activities were taking place and weather conditions were damp/ wet / misty. Triggers associated with high moisture content in the air affecting the monitors and giving false readings.	n/a
AQ034	04/12/2021 23:01 - 00:00; 494.3 ug/m ³ 00:01 - 01:00; 1773.8 ug/m ³ 01:01 - 02:00; 407.6 ug/m ³ 02:01 - 03:00; 413.8 ug/m ³		
AQ034	23/12/2021 07:01 - 08:00; 220.2 ug/m ³ 08:01 - 09:00; 266.6 ug/m ³ 09:01 - 10:00; 294.4 ug/m ³ 10:01 - 11:00; 369.9 ug/m ³ 11:01 - 12:00; 244.3 ug/m ³		
AQ034	25/12/2021 04:01 - 05:00; 195.5 ug/m ³		
AQ034	26/12/2021 19:01 - 20:00; 1690.4 ug/m ³ 20:01 - 21:00; 2372.6 ug/m ³ 21:01 - 22:00; 3475.8 ug/m ³ 22:01 - 23:00; 6527.9 ug/m ³		
AQ034	23:01 - 00:00; 6516.3 ug/m ³ 00:01 - 01:00; 6522.4 ug/m ³ 01:01 - 02:00; 4387.4 ug/m ³ 02:01 - 03:00; 4707.0 ug/m ³		
AQ040	04/12/2021 14:01 - 15:00; 3928.4 ug/m ³		
AQ041	04/12/2021 23:01 - 00:00; 236.5 ug/m ³ 00:01 - 01:00; 274.8 ug/m ³		
AQ050	03/12/2021 19:01 - 20:00; 328.5 ug/m ³ 20:01 - 21:00; 772.8 ug/m ³ 21:01 - 22:00; 1247.5 ug/m ³ 22:01 - 23:00; 1885.1 ug/m ³		

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ050	04/12/2021 23:01 - 00:00; 290.1 ug/m ³ 00:01 - 01:00; 1223.8 ug/m ³ 01:01 - 02:00; 423.9 ug/m ³ 02:01 - 03:00; 925.7 ug/m ³ 03:01 - 04:00; 554.4 ug/m ³ 04:01 - 05:00; 222.6 ug/m ³		

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



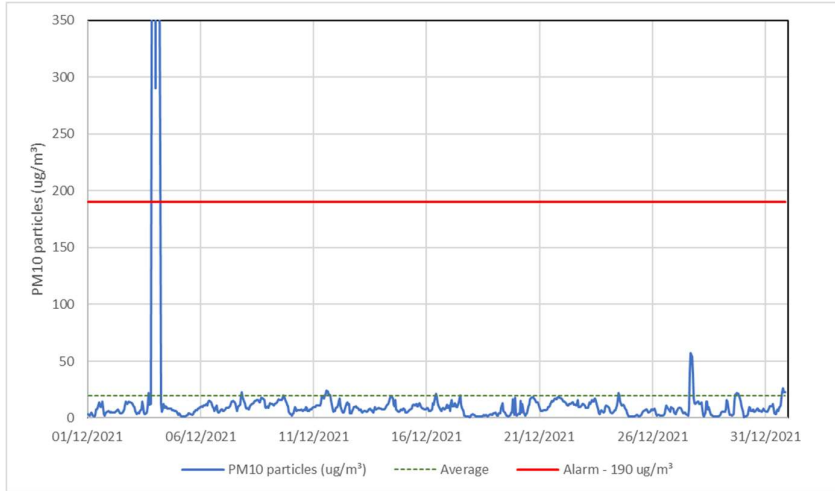
AQ047



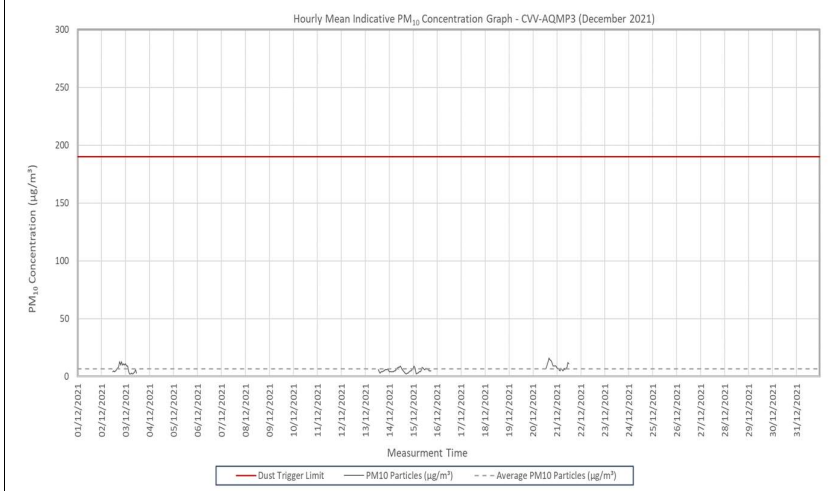
AQ049



AQ050

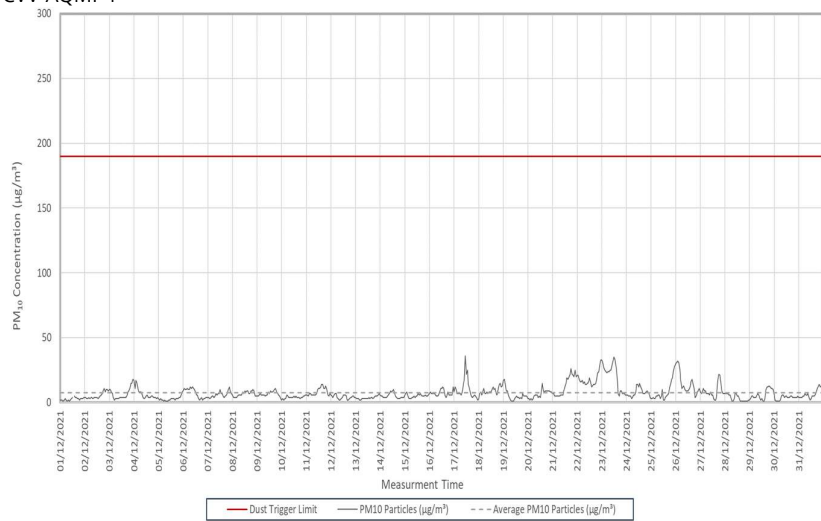


CVV-AQMP3

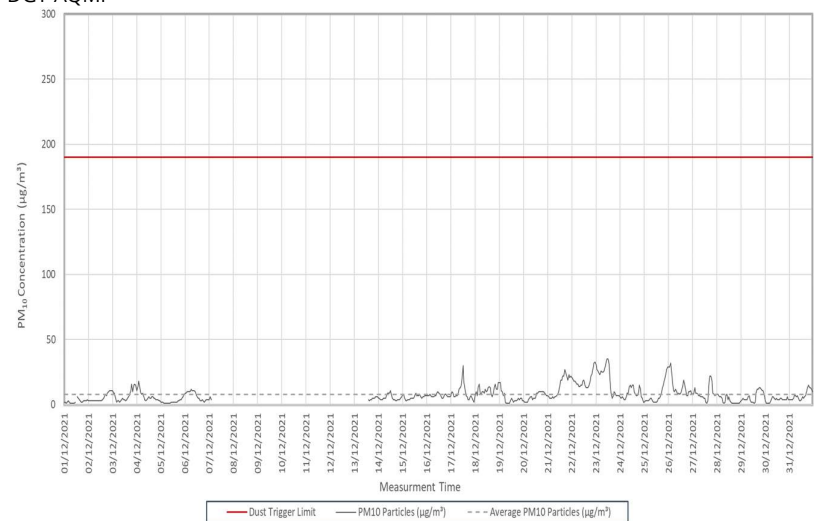


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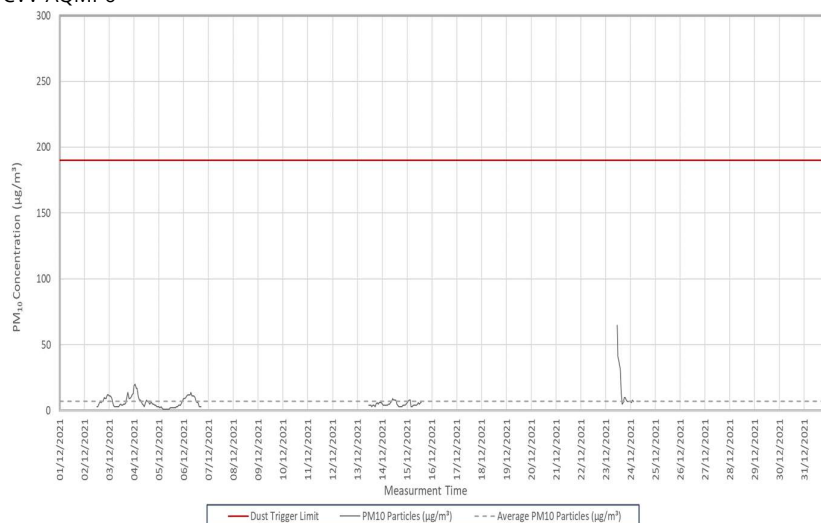
CVW-AQMP4



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	26	25	25		23
HS2-000020BNU	Cowley Road sign post at junction with Hillingdon Road	505492, 183926	45	46	44	38	45	Tube Missing	32	35	48	47	49		43
HS2-000020BNV	High Street sign post at junction with Pembroke Road	509439, 187117	Tube Missing	40	37	36	36	Tube Missing	Tube Missing	31	40	42	Tube Missing		37
HS2-000020BNW	Signpost on A4020 Uxbridge Road at junction with Long Lane	507365, 182687	40	48	39	46	43	Tube Missing	No Data	29	48	41	39		41
HS2-000020BPK	Lamp post in crescent off Swakeleys Road	506542, 186037	40	40	38	36	31	31	39	29	34	34	Tube Missing		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	40	42	42		35
HS2-000020BPN	Lamp post on B467	506767, 186224	36	38	32	32	32	27	Tube Missing	22	37	37	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	Tube Missing	Tube Missing	42	42	41	38	31	Tube Missing	40	37	39		39
HS2-000020BQN	Lamp post on Park Road	506176, 185444	40	52	31	42	47	36	Tube Missing	35	51	47	37		42
HS2-000020BQP	Sign post on Long Lane	507614, 184663	38	39	36	41	39	32	26	32	46	42	39		37
HS2-000020BP8	Triplicate site at South Ruislip roadside automatic monitoring station	510858, 184916	39	40	33	33	32	27	No Data	25	38	35	31		33