

Air Quality and Dust Monitoring Monthly Report – June 2022

London Borough of Ealing



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 Ealing (LBE) during May and June 2022 respectively.
- 1.1.2 Figures 1 to Figure 4 in Appendix A indicate the current worksites together with air quality and dust 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 October 2019 and is expected to be completed by 2025. The current worksites, as presented in Appendix A, Figure 1 to Figure 4, include:

Old Oak Common Depot

- Old Oak Common Depot and mobilisation and new site set up for the station works;
- Box excavation, muck away, crushing and concrete processing – GWML;
- Construction of temporary haul roads;
- Drainage installation;
- Piling and D-Wall activities – East / Central Box;
- Capping beam construction / fixing rebar for propping beam and slabs – West Box;
- Breaking down of D-wall / excavation in - West box;
- Conveyor Commissioning; and
- Manhole Construction / Site setup / Segment Installation – Wormwood Scrubs.

Victoria Road Crossover Box and Flat Iron Site

- Groundworks;
- Piling operations; and
- Conveyor construction.

Willesden Euro Terminal

- Excavated material;
- Spoil management; and
- Conveyor construction.

Atlas Road

- Piling operations;

- Groundworks;
- Conveyor construction; and
- Tunnel entrance construction.

Green Park Way Vent Shaft

- Groundworks;
- Piling operations;
- Vent shaft construction; and
- Materials management.

Mandeville Road Vent Shaft

- Groundworks;
- Piling operations; and
- Materials management.

Westgate Vent Shaft

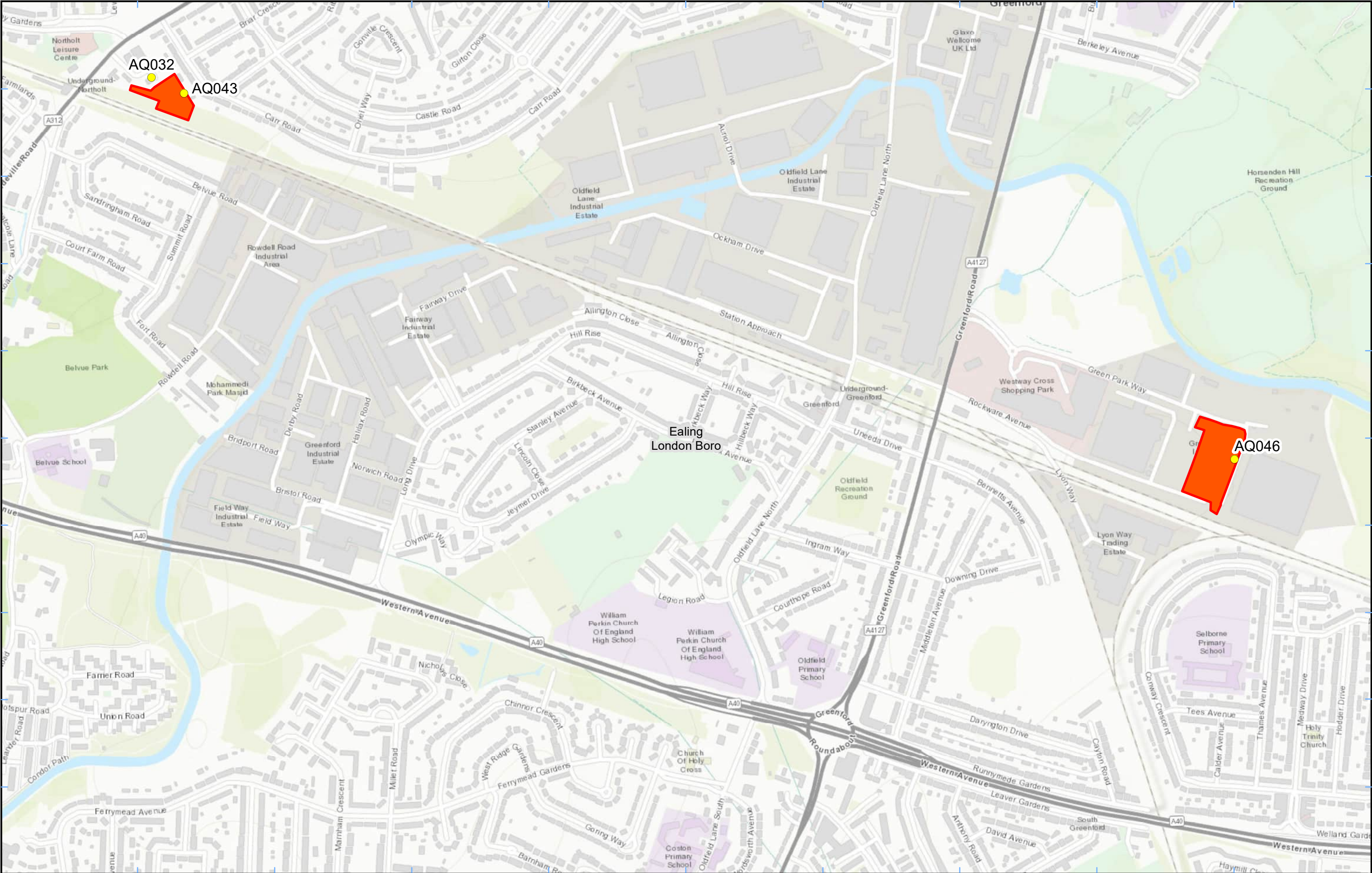
- Groundworks;
- Piling operations;
- Vent shaft construction; and
- Materials management.

- 1.1.5 Fifteen (15) dust monitors were installed around worksites, where works are underway. These sites returned a medium 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 Dust trigger alerts were recorded during the monitoring period (June 2022) and are reported in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors in June 2022 due to monitor faults and power supply issues, subsequently resolved.
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at ten (10) locations around highways within the LBE as part of the management of air quality where significant effects 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 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.

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 4: Worksites and monitoring locations within the LBE



Legend

Dust Monitor Worksite District Borough Unitary Boundaries

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Map Number

Map Name

**Worksite and Monitoring Locations
In LBE (Sheet 1)**

London Borough of Ealing



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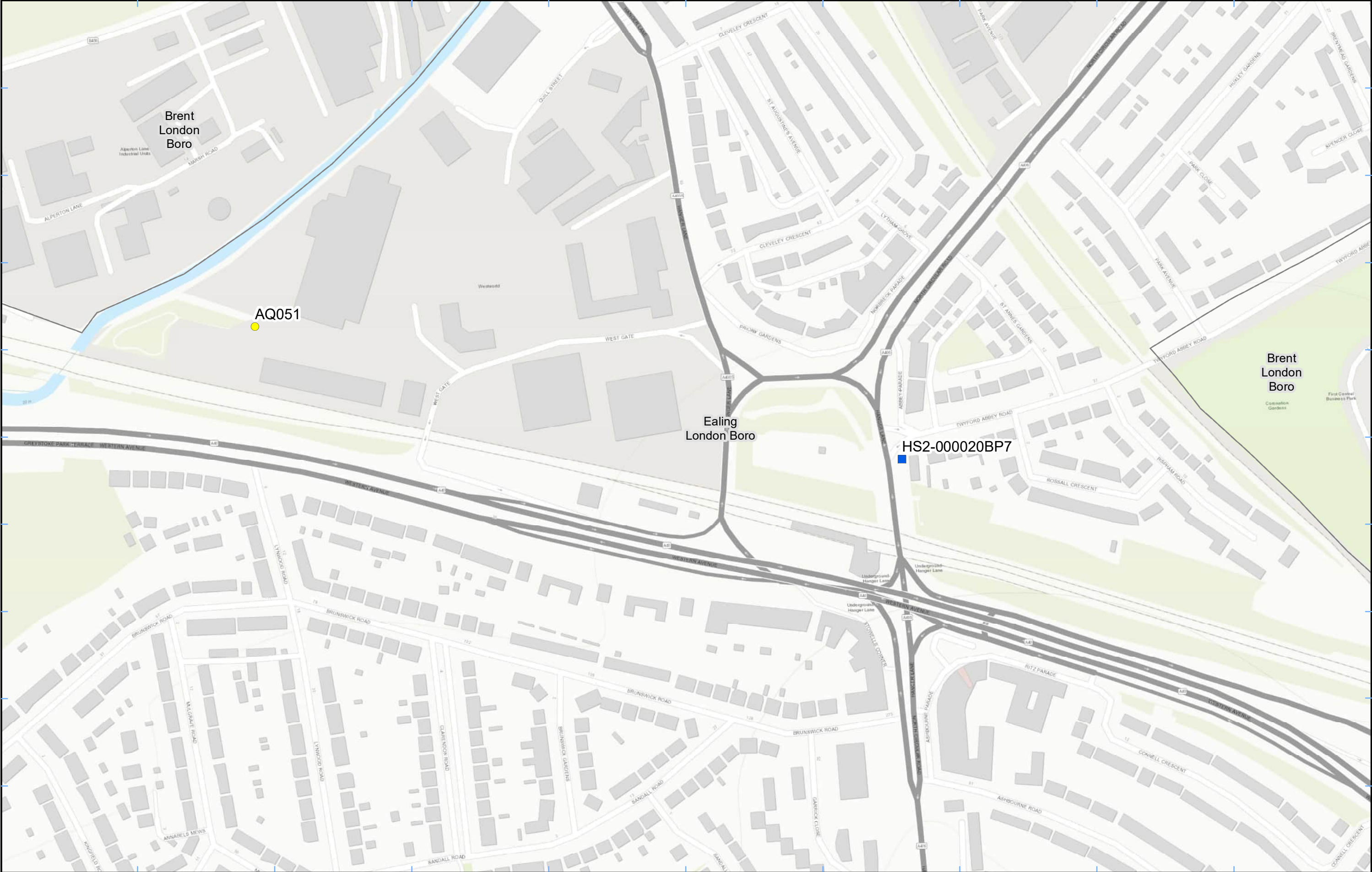
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Date: 26/04/22



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

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Map Number

Map Name

Monitoring Locations
In LBE (Sheet 2)

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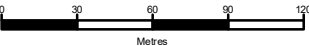
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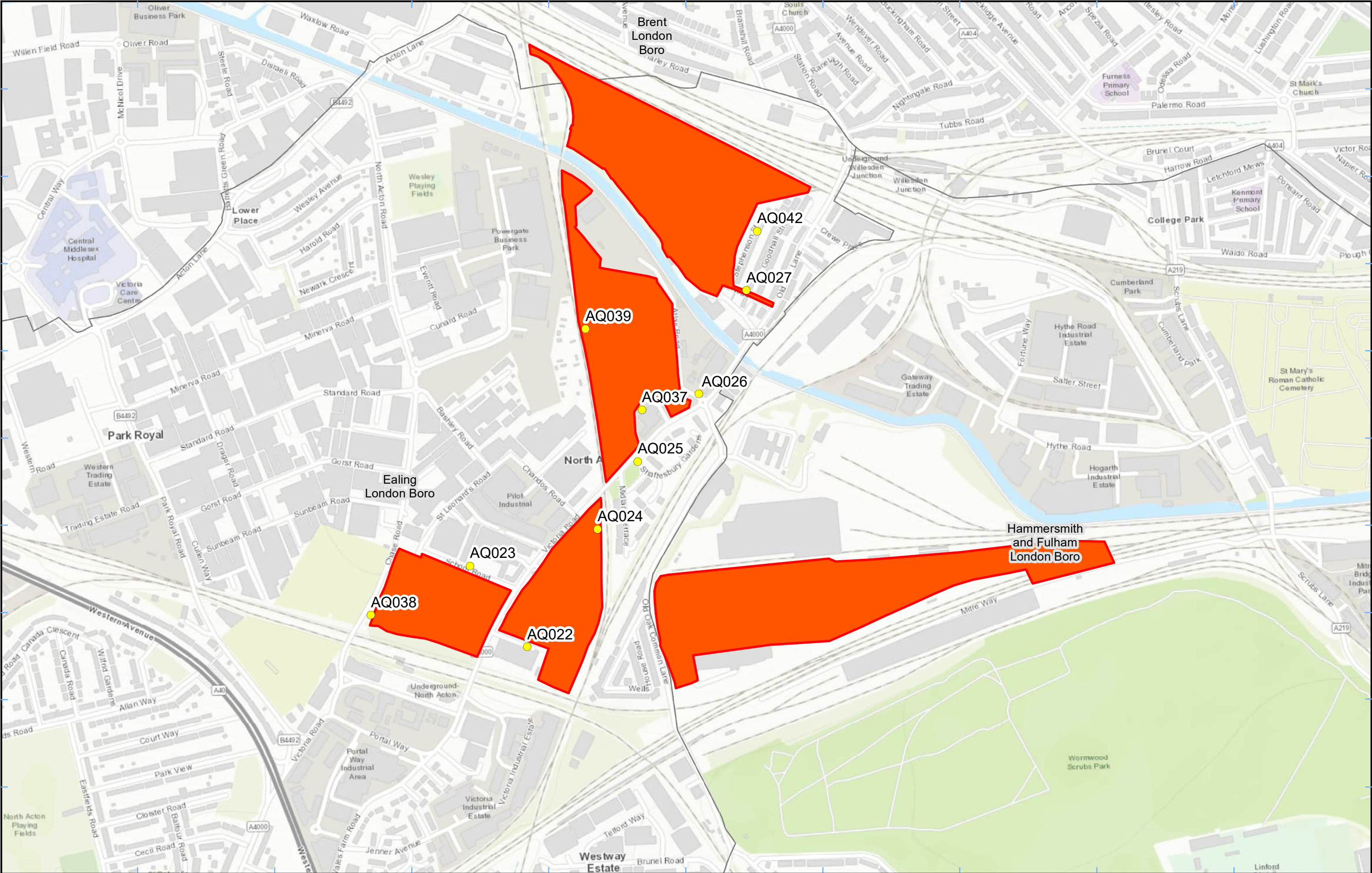
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Legend

Dust Monitor

District Borough Unitary Boundaries

Ealing

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Map Number

Map Name

Worksite and Monitoring Locations
In LBE (Sheet 3)

London Borough of Ealing

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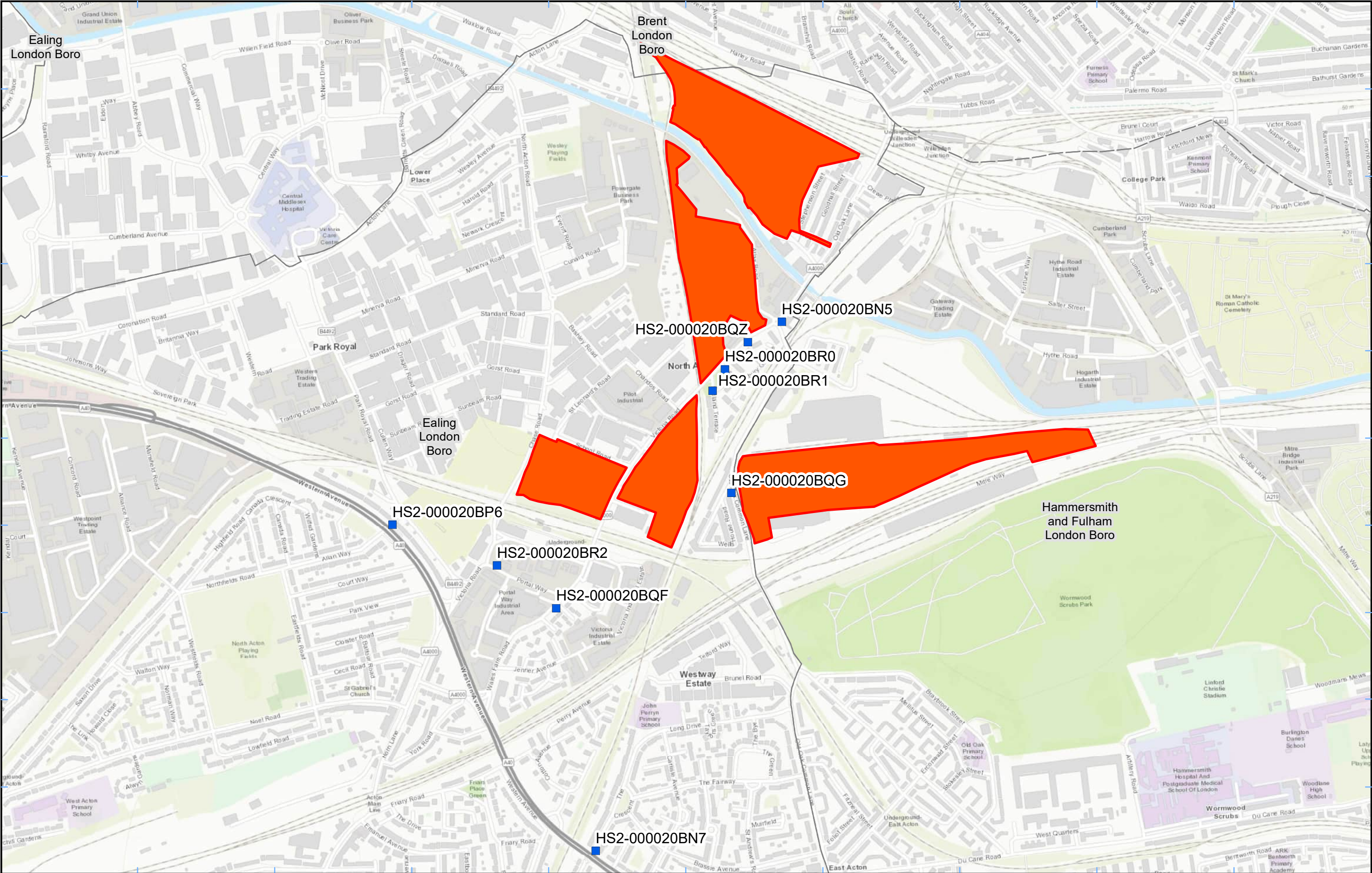
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Meters

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Doc Number:

Date: 07/06/22



Legend

Diffusion Tube

District Borough Unitary Boundaries

Worksite

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Map Number

Map Name

**Worksite and Monitoring Locations
In LBE (Sheet 4)**

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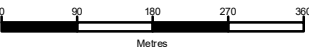
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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and June 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 (%)
AQ022	521072, 181985	Boden House	M	Yes	N	16.2	2.2	56.3	0	100.0
AQ023	520956, 182149	School Road	M	Yes	N	14.8	1.5	95.1	0	100.0
AQ024	521214, 182223	Braitrim House	M	Yes	N	16.3	2.5	82.4	0	100.0
AQ025	521295, 182360	Victoria Road	M	Yes	N	18.0	2.3	87.6	0	100.0
AQ026	521419, 182497	Old Oak Lane	M	Yes	N	27.3	2.3	106.9	0	100.0
AQ027	521515, 182706	Channel Gate Road	M	Yes	N	19.5	4.54	52.07	0	8.8
AQ028	521302, 182067	Wells House Road	M	Yes	N	28.8	1.5	300.0	2	100.0
AQ032	513402, 184536	Badminton Close	M	Yes	N	9.9	1.6	40.2	0	100.0
AQ037	521304, 182464	Atlas Road	M	Yes	N	14.4	1.9	59.3	0	100.0
AQ038	520756, 182049	Chase Road	M	Yes	N	11.8	1.5	309.2	1	98.6
AQ039	521190, 182628	Atlas Road 2	M	Yes	N	2.4	0.1	15.5	0	100.0
AQ042	521537, 182826	Stephenson Road	M	Yes	N	6.8	0.87	38.87	0	87.8

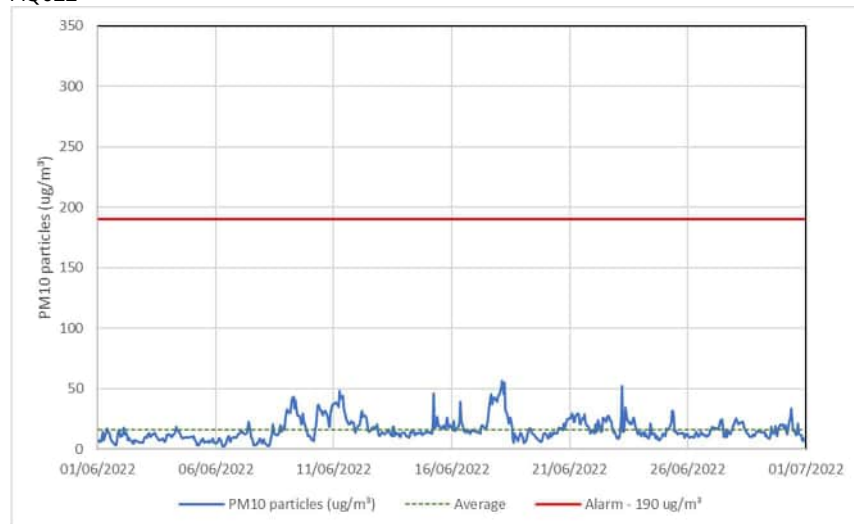
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
AQ043	513468, 184504	Mandeville Road	M	Yes	N	11.0	1.2	69.4	0	60.4
AQ046	515593, 183764	Green Park Way	M	Yes	N	15.1	1.5	242.3	1	99.2
AQ051	517951, 182788	Westgate	M	Yes	N	19.7	2.7	152.2	0	100.0

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

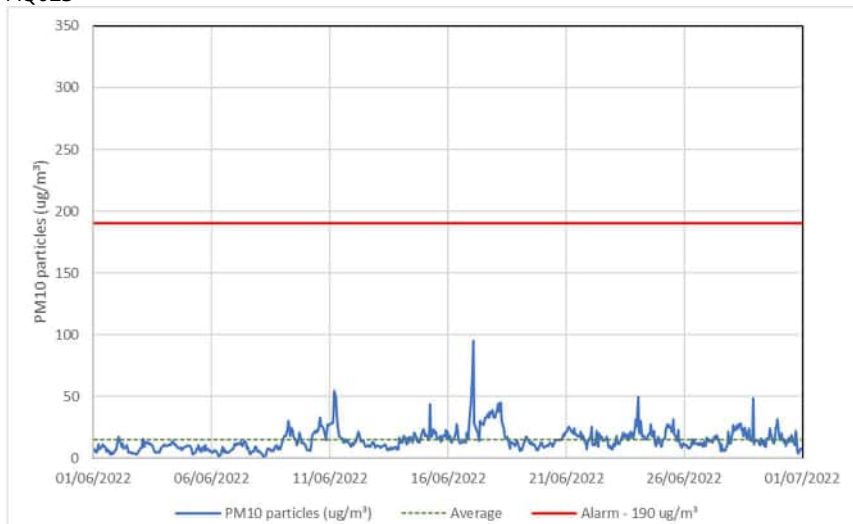
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ038	15/06/2022 16:00-17:00; 309.2 µg/m ³	This was due to a period of power loss to the monitor with both the pump and heater losing power and running on internal battery for short period overnight and then restarting when the power was restored.	N/A
AQ028	16/06/2022 10:00-10:59; 300.0 µg/m ³ 11:00-11:59; 248.0 µg/m ³	Delivery vehicles are entering and leaving site during the time of alert. During time of alert (08.00 – 10.00), crane loading wagon was taking place.	As noted previously on 15/06/22, road sweeper and use of hose at entrances to dampen down haul routes were on-going during time of alerts on 16/06/2022. Upon review of data from nearby monitors (AQ035 & AQ036 – see LBHF report) during the time of all alerts, there are elevated PM ₁₀ concentrations present during the day across the 15/06/2022 and 16/06/2022 that coincide with hot, dry conditions. These conditions are also noted to give rise to higher PM ₁₀ concentrations within the information present in the UK Government website regarding Concentrations of particulate matter (PM ₁₀ and PM _{2.5}). As a result, this will have contributed to the PM ₁₀ concentrations levels being above the exceedance threshold of 190 µg/m ³ . Works in the local area were investigated and none were found to be close to contribute to the exceedance alerts
AQ046	30/06/2022 13:00-14:00; 242.3 µg/m ³	At the time of the isolated trigger alert from the dust monitor (AQ046), which is located on the eastern boundary of the Greenpark Way Vent Shaft site, a wagon was being loaded with excavated material near to the monitoring location It is considered this was the cause of the isolated trigger and limited to the near vicinity of the activity and monitor, not reflective of wider site conditions. Dust suppression was available and being use at the time.	Works were stopped on receipt of the trigger alert and the materials and damped-down before loading recommenced. The site team will continue to ensure dust suppression is available and deployed where required during the works.

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

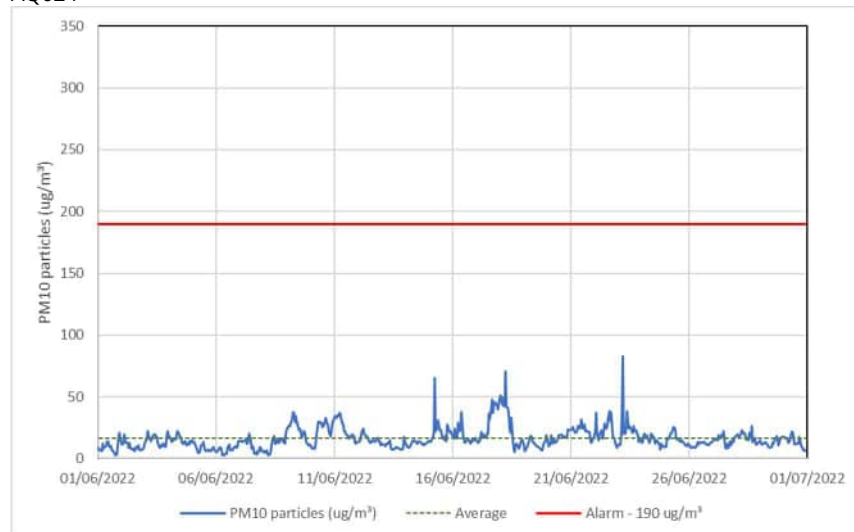
AQ022



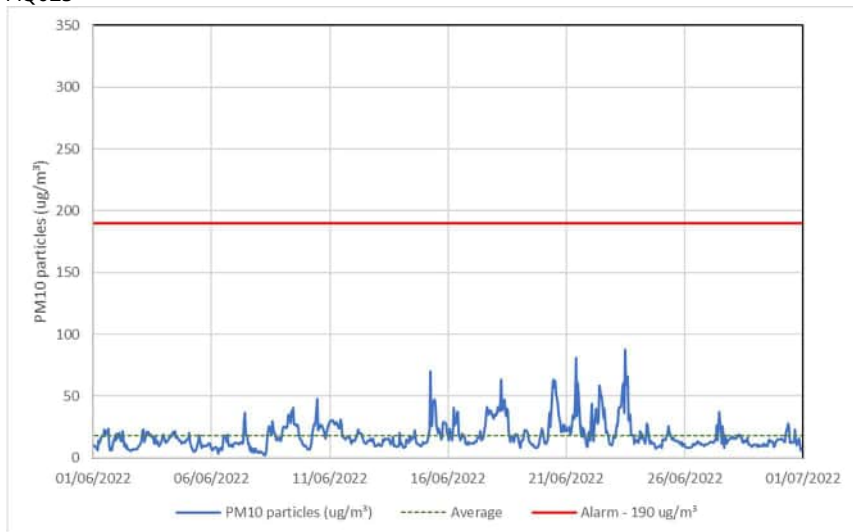
AQ023



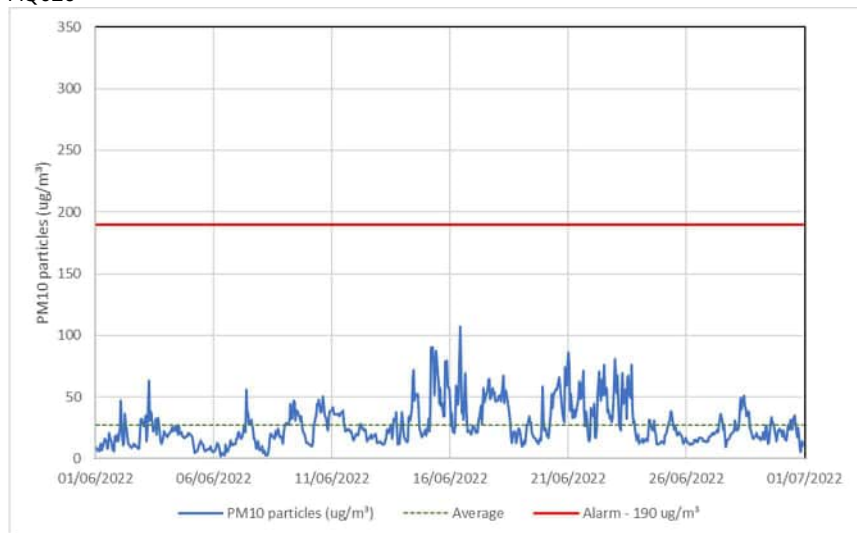
AQ024



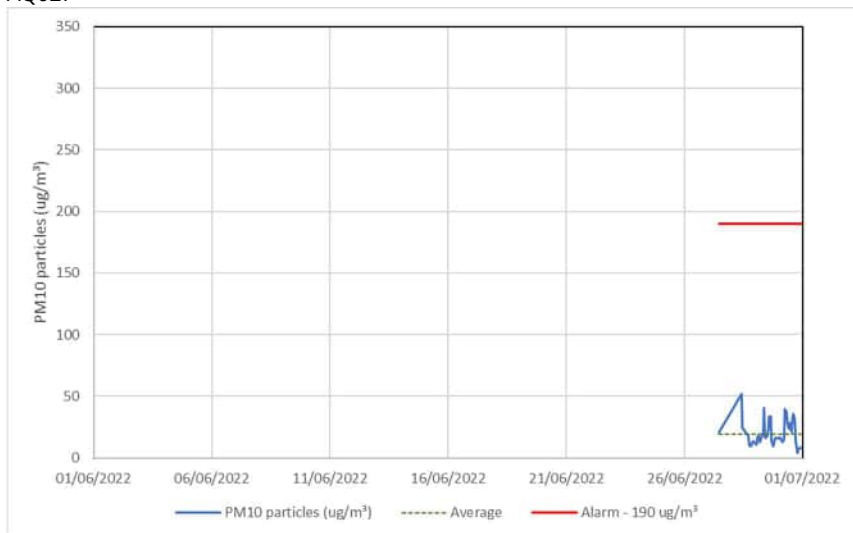
AQ025



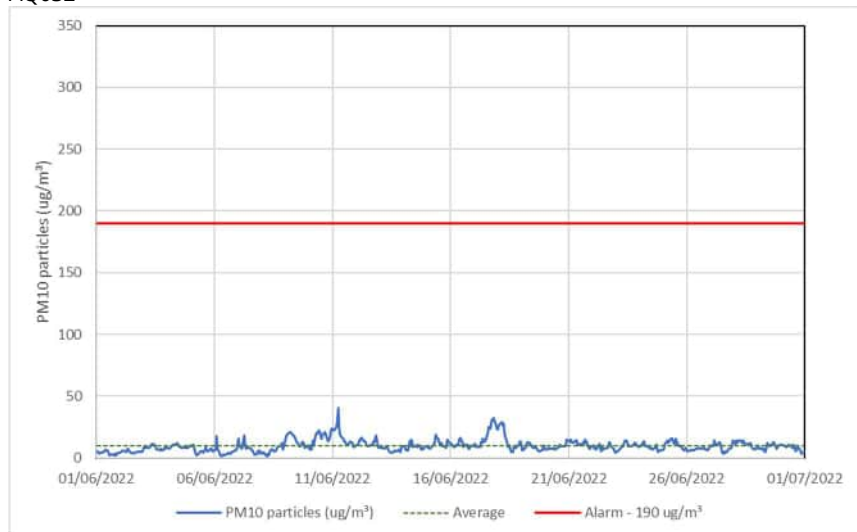
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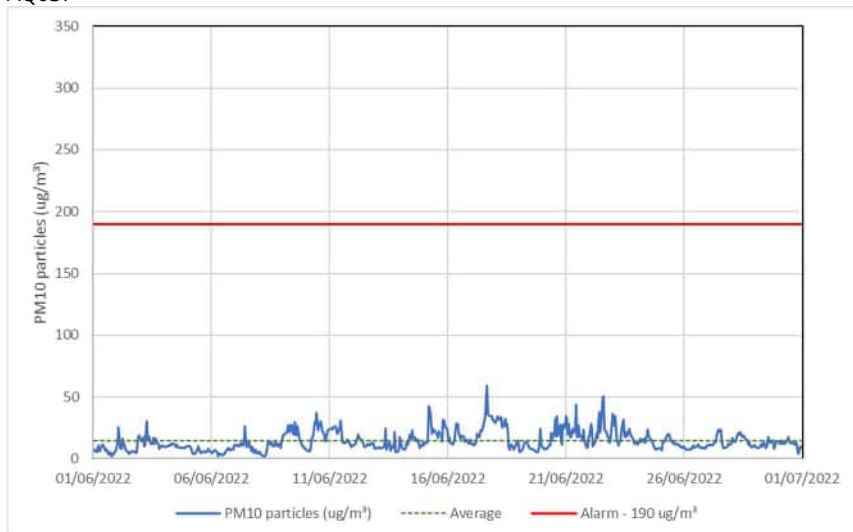
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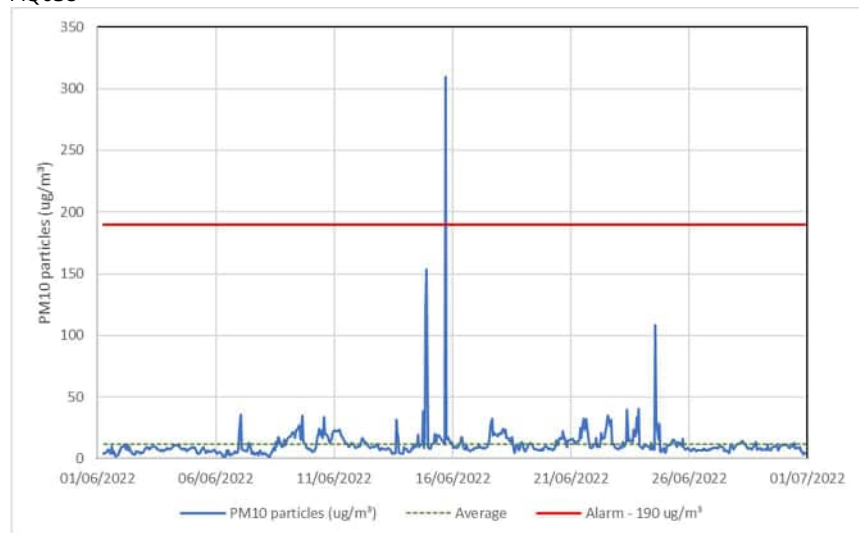
AQ032



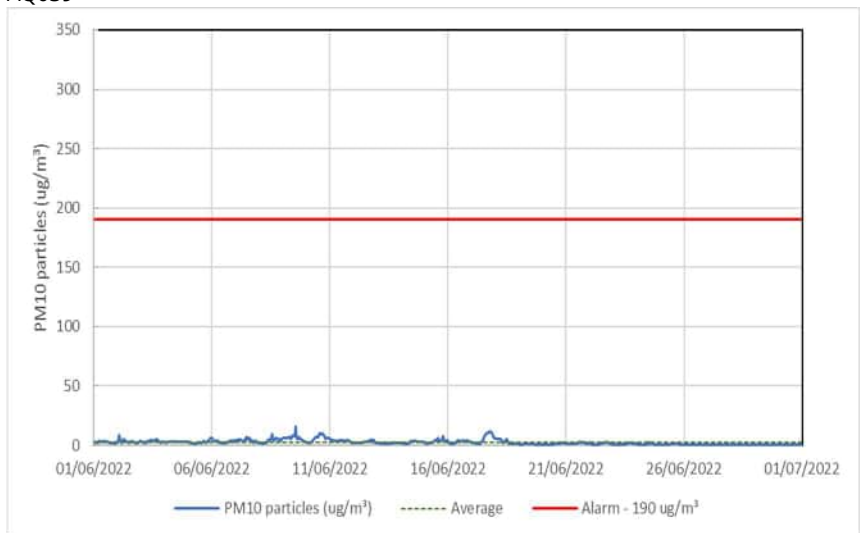
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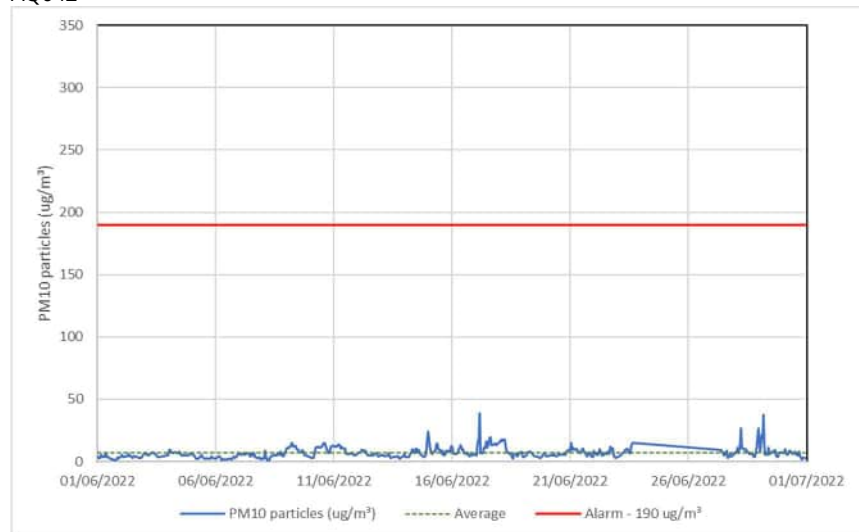
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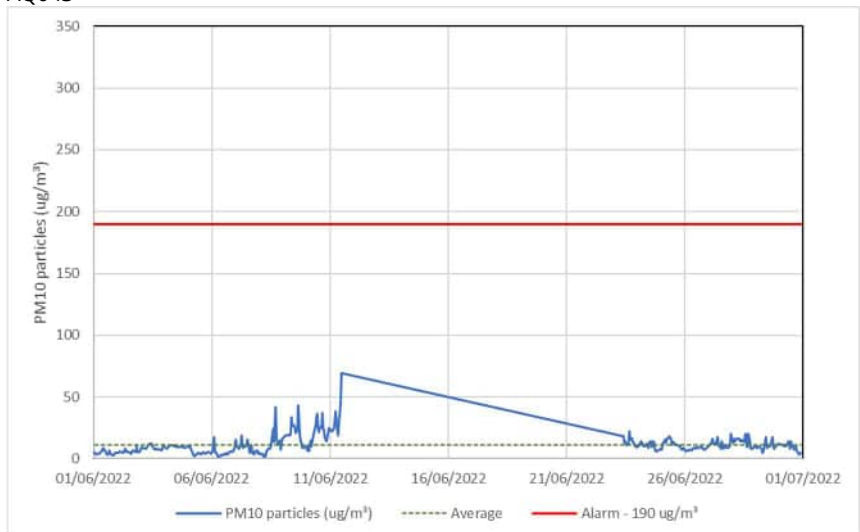
AQ039



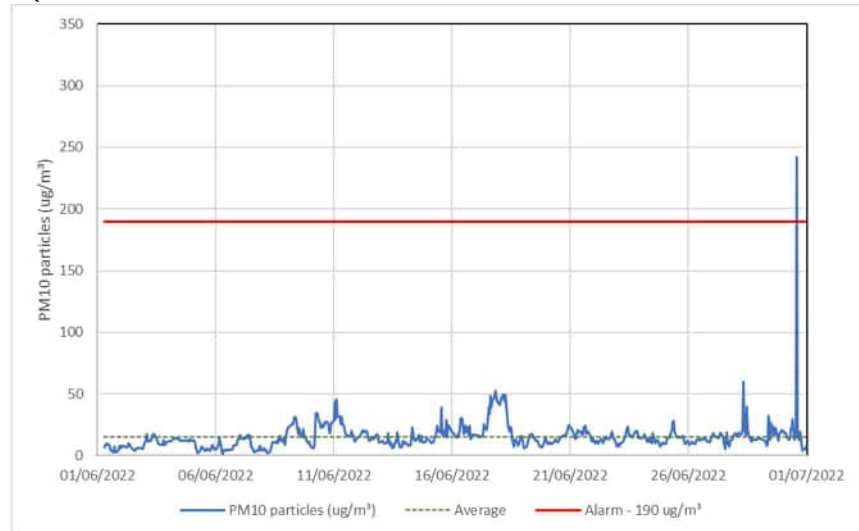
AQ042



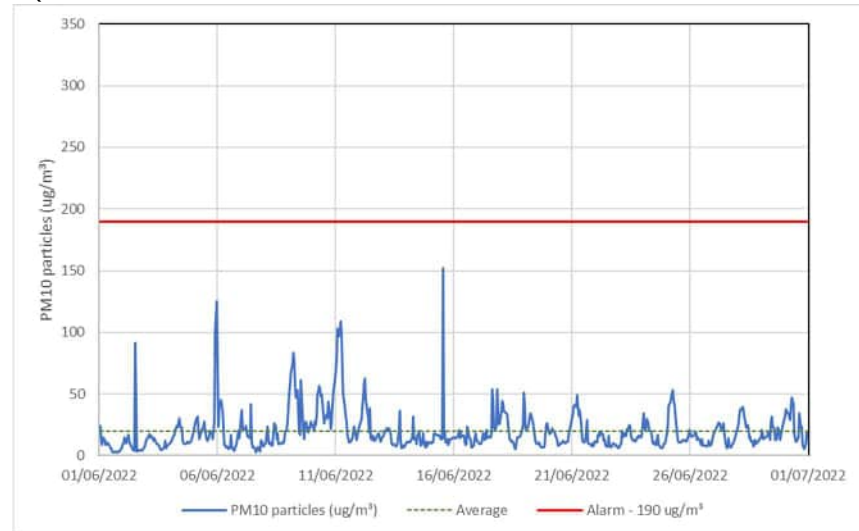
AQ043



AQ046



AQ051



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
HS2-000020BN5	Sign post on Victoria Road	521443, 182477	65	52	55	39	36								50
HS2-000020BN7	The Approach street sign	520959, 181102	76	Tube Missing	46	41	45								52
HS2-000020BQF	Conway Drive sign post	520856, 181733	66	44	62	55	No data								57
HS2-000020BQG	Lamp post outside No 1. Wells House Road on Old Oak Common Lane	521312, 182033	Tube Missing	38	50	37	37								40
HS2-000020BQZ	Lamp post on Victoria Road opposite Tudor House	521354, 182425	49	45	57	47	42								48
HS2-000020BR0	Sign post on Shaftesbury Gardens	521295, 182354	50	33	40	30	24								35
HS2-000020BR1	Lamp post on Midland Terrace	521263, 182298	43	30	38	30	21								32
HS2-000020BR2	Lamp post on Victoria Road outside Papa John's	520702, 181844	Tube Missing	Tube Missing	62	Tube Missing	Tube Missing								62

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
HS2-000020BP6	Triplicate site next to the Ealing, Western Avenue Acton roadside automatic monitoring station	520430, 181950	63	45	50	37	38								47
HS2-000020BP7	Triplicate site next to the Ealing, Hangar Lane Gyratory roadside automatic monitoring station	518537, 182708	87	67	65	Tube Missing	66								71