HS2

July 2022

Air Quality and Dust Monitoring Monthly Report – July 2022

London Borough of Hammersmith and Fulham

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 Hammersmith and Fulham (LBHF) during June and July 2022 respectively.

1.1.2 Figure 1 and Figure 2 in Appendix A indicate the current worksite 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 Construction works commenced in August 2020 and is expected to be completed by 2025. The current worksite, as presented in Appendix A, Figure 1 and Figure 2, includes:

- Old Oak Common Depot and mobilisation and new site set up for the station works.
- Material movements - GWML
- Construction of temporary haul roads
- Drainage / utility installation
- Piling and D-Wall activities - East / Central Box
- Site Entrance Works
- D-wall breakdown - East / West.
- Capping beam construction - East Box
- Capping beam construction / fixing rebar for propping beam and slabs - West Box
- Breaking down of D-wall / excavation in - West box.
- Conveyor Commissioning
- Manhole Construction / Pipe jacking / Tunnelling / shutter striking - Wormwood Scrubs

1.1.5 Four (4) dust monitors are installed around worksites, where works are underway. These sites returned a medium 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 3. 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_{10} concentrations of 190 µg/m^3, 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 (July 2022) and are reported in Appendix B, Table 3.

1.1.9 Data capture was below 90% for monitor AQ036 due to monitor faults that have since been resolved.

1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO_2) is undertaken at seven (7) locations around highways within the LBHF as part of the management of air quality where significant effects June 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 NO_2 monitoring locations and results are presented in Appendix C, Table 4, together with the 2022 running mean.

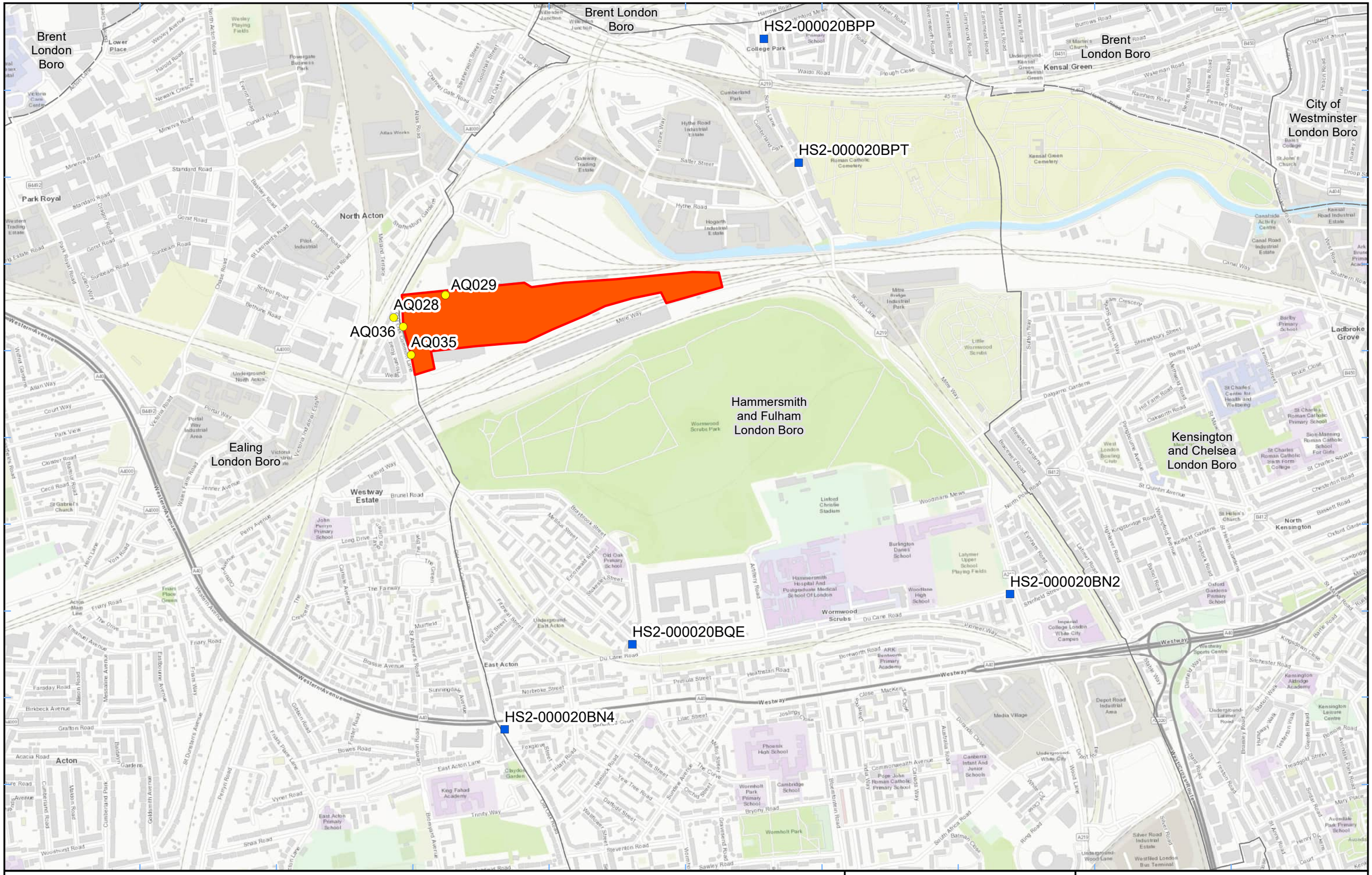
1.1.13 Table 1 provides a summary of the complaint information related to dust or air quality received during the reporting period, together with the findings of any related investigations.

Table 1: Summary of complaints received during July 2022 in LBHF

Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
HS2-22-79620-E	Kildun Court	Resident complained about the dust on their property and wanted to know when this would be cleaned.	Closed. Resident was informed that HS2 do not offer window cleaning for properties across the country, and information was given regarding the cleaning regime of Old Oak Common Lane and use of dust suppressants on site.

Appendix A – Worksites and Monitoring Locations

Figure 1 and 2: Worksites and monitoring locations within the LBHF



Legend

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

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Map Number

Map Name

Worksite and Monitoring Locations In LBHF (Sheet 1)

London Borough of Hammersmith and Fulham

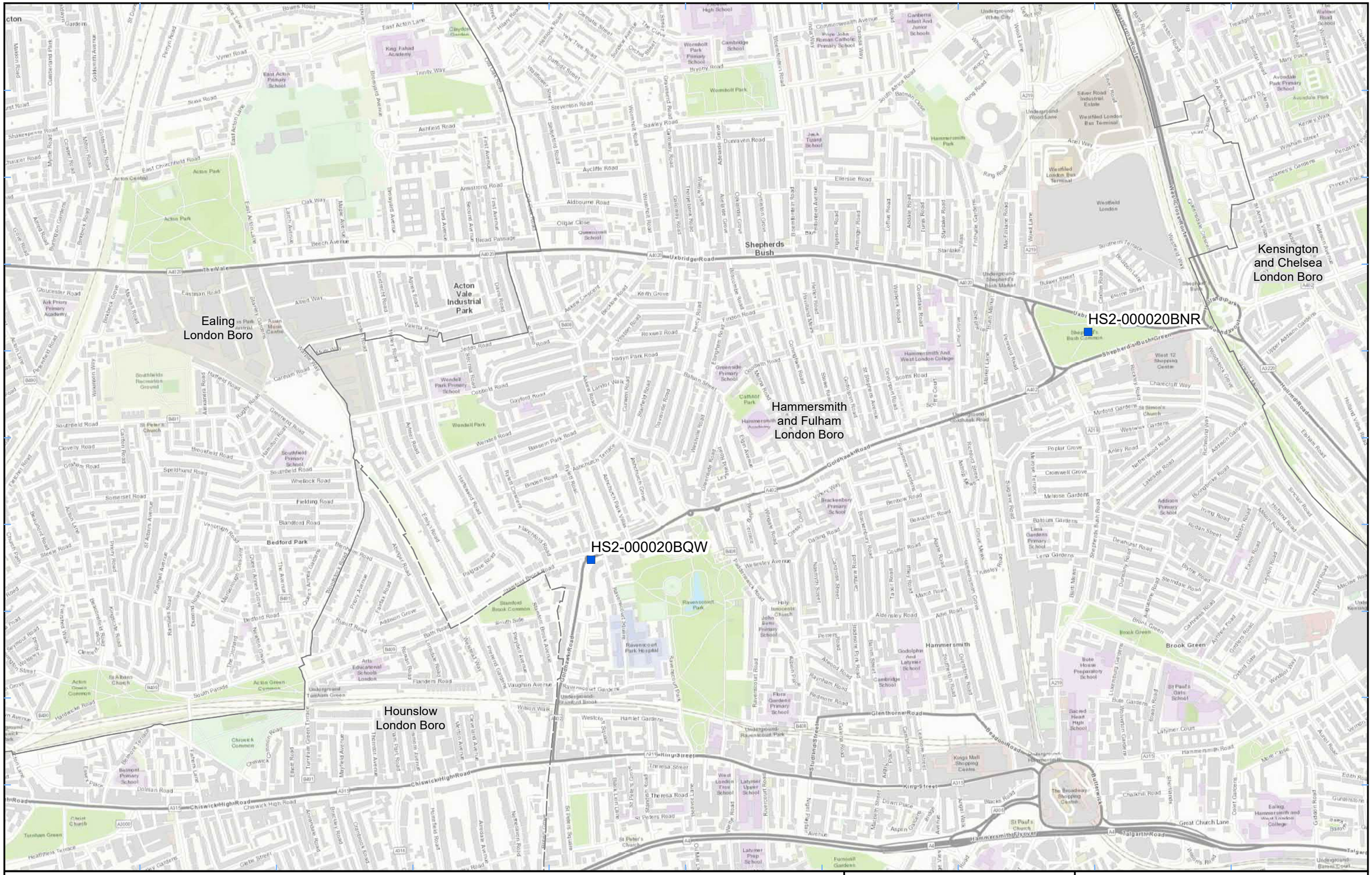
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number:

Date: 21/02/22



Legend

- Diffusion Tube
- District Borough Unitary Boundaries

Map Number

Map Name

Monitoring Locations In LBHF (Sheet 2)

London Borough of Hammersmith and Fulham

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400

Metres

Doc Number:

Date: 08/12/20

Appendix B – Dust Monitoring Results

Table 2: Dust Monitoring locations and July 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 ($\mu g/m^3$)	Minimum 1-hour PM_{10} concentration ($\mu g/m^3$)	Maximum 1-hour PM_{10} concentration ($\mu g/m^3$)	Number of 1-hour periods exceeding trigger level of 190 $\mu g/m^3$	Data capture (%)
AQ028	521302, 182067	Wells House Road	M	Yes	N	26.1	2.8	155.5	0	100.0
AQ029	521453, 182132	Old Oak Common	H	Yes	N	8.5	2.1	80.5	0	100.0
AQ035	521353, 181959	Old Oak Common	H	Yes	N	23.5	3.5	323.3	3	97.7
AQ036	521330, 182041	Old Oak Common	H	Yes	N	14.5	2.4	80.0	0	80.9

Table 3: Summary of exceedances of trigger level in July 2022.

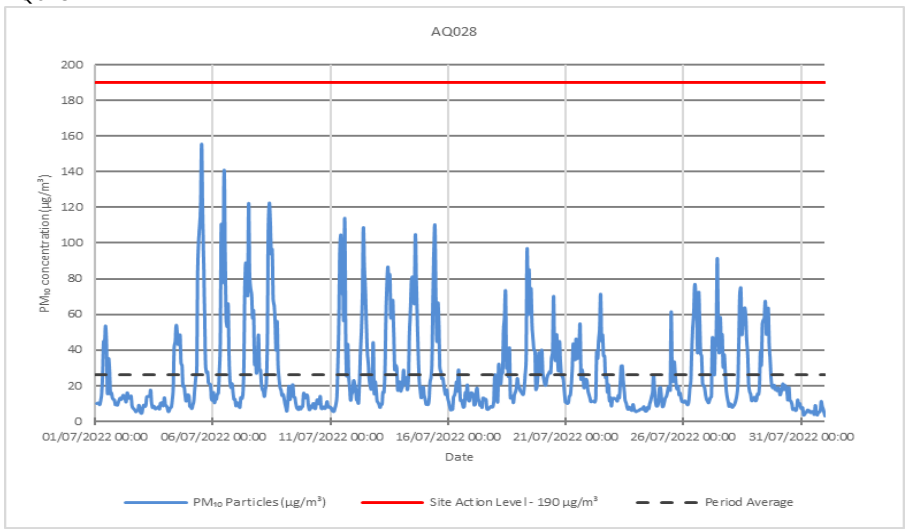
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ035	07/07/2022 11:01 – 12:00; 323.3 $\mu g/m^3$	In area 5 there were breaking out of slab works at the time of the alert.	The jet washer and water bowser has been in use throughout the day in the area we are working close to the dust monitor – see images 1-3 from the morning/lunchtime as evidence of dampening down and damp site conditions. See image 4 taken after the alert showing additional dampening down with the water bowser. Upon review of data from nearby monitors (AQ028, AQ035 & AQ036) during the time of all alerts, there are elevated PM10 concentrations present during the day that coincide with hot, dry

			conditions. These conditions are also noted to give rise to higher PM10 concentrations within the information present in the UK Government website regarding Concentrations of particulate matter (PM10 and PM2.5). As a result, this will have contributed to the PM10 concentrations levels being above the exceedance threshold of 190 µg/m3. Works in the local area were investigated and none were found to be close to contribute to the exceedance alerts
AQ035	16/07/2022 08:01 – 09:00; 201.3 µg/m^3 19/07/2022 07:01 – 08:00; 209.7 µg/m^3	- Public road Vehicle movements on OOCL - HGV movements - Welding steel beams within the 8m deep Reception Shaft Installing drainage and backfilling works around site entrance.	Jet bowsers 1000L (for concrete breaking / ground and stockpiles) Motofogs / Dustlayers (used for large areas and stockpiles) Road sweepers (site haul roads / OOCL / WHR) Wheel Wash (for all site vehicles exiting site) Towable water bowsers with 1000L, 2000L and 10000L capacities (Used for large areas and haul roads) Cutting equipment with Dust Extractors Continuous dampening down of works area using various BPM measures(photo examples below) Not site related and direct result of the current heat wave. UK Air - Air pollution forecast During the current heat wave, widespread areas of air pollution are expected for much of Britain, but especially the south and east in fine, settled and very hot conditions as air from continental Europe bolsters local sources of pollution. Lonodn Air – Imperial college London Air arriving in the UK is expected to be re-circulated air, having spent time over the

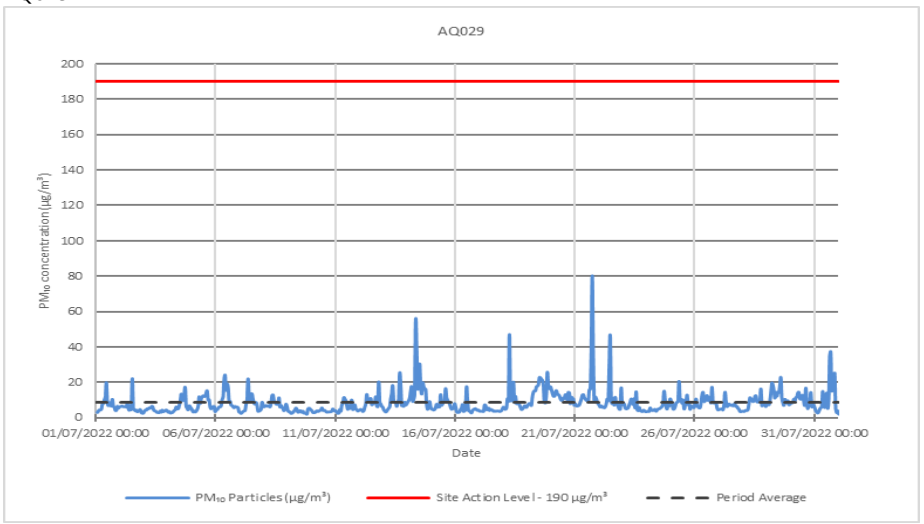
			South of the UK and London a few days before, then swinging around and travelling over urban and industrial areas of Holland, Belgium and northern France, before arriving back into London and the south east. A low altitude air-feed originating from northern France passing close to the Paris region is forecast. Air arriving along both paths, is likely to have picked up pollution en-route raising the impact on pollution in Britain. Upon review of data from the nearby monitor (AQ028) during the time of all alerts, there are elevated PM10 concentrations present during the day that coincide with hot, dry conditions. These conditions are also noted to give rise to higher PM10 concentrations within the information present in the UK Government website regarding Concentrations of particulate matter (PM10 and PM2.5). As a result, this will have contributed to the PM10 concentrations levels being above the exceedance threshold of 190 µg/m3.

Figure 3: Construction dust 1-hour mean indicative PM_{10} concentration for dust monitors

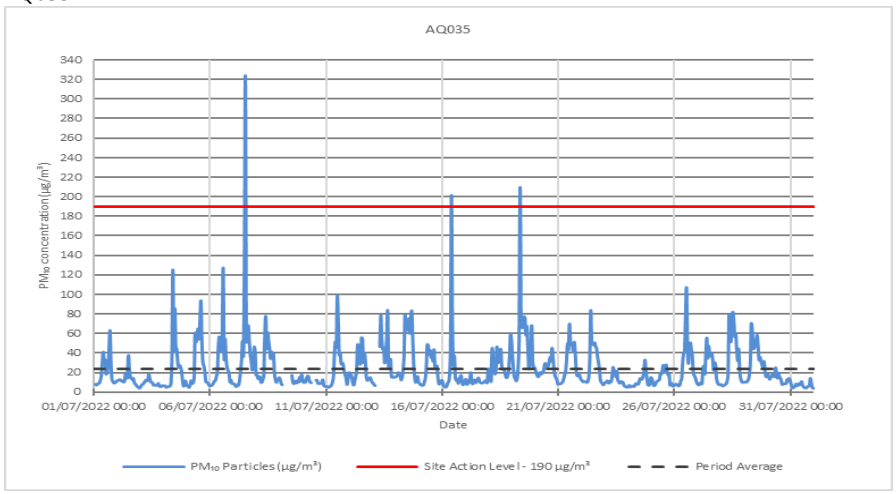
AQ028



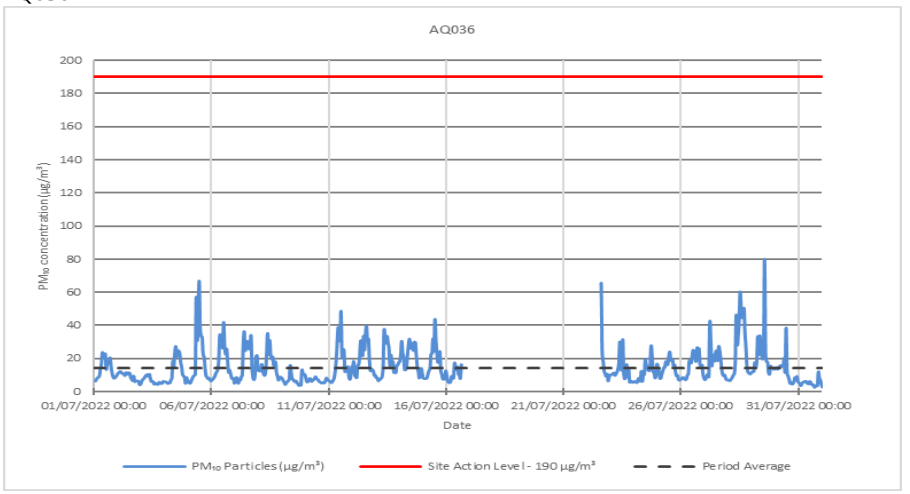
AQ029



AQ035



AQ036



Appendix C – Air Quality Monitoring Results

Table 4: NO_2 monitoring locations around highways NO_2 concentrations and monthly monitoring results with running mean for 2022 (µg/m^3)

Monitoring Site ID	Location description	Coordinates (X, Y)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean[1]
HS2-000020BN2	Lamp post on Du Cane Road	523092, 181264	55	Tube Missing	54	42	35	38							45
HS2-000020BN4	End of cycle lane sign on Old Oak Road	521625, 180871	55	34	50	42	Tube Missing	36							43
HS2-000020BNR	Lamp posts in Shepherd's Bush Common	523481, 179871	48	No Data	Tube Missing	Tube Missing	Tube Missing	22							35
HS2-000020BPP	Sign post on A219 Scrubs Lane, South of Harrow Road	522378, 182877	63	44	48	39	36	Tube Missing							46
HS2-000020BPT	Controlled Zone/Zone Ends road sign on A219 Scrubs Lane, north of Hythe Road	522478, 182517	61	42	49	38	36	35							43
HS2-000020BQE	Lamp post next to No 11 Wulfstan Street	521996, 181118	44	30	38	26	21	20							30
HS2-000020BQW	Lamp post on A402 Goldhawk Road	522037, 179209	59	36	Tube Missing	34	26	Tube Missing							39

[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.*