

Air Quality and Dust Monitoring Monthly Report – August 2021

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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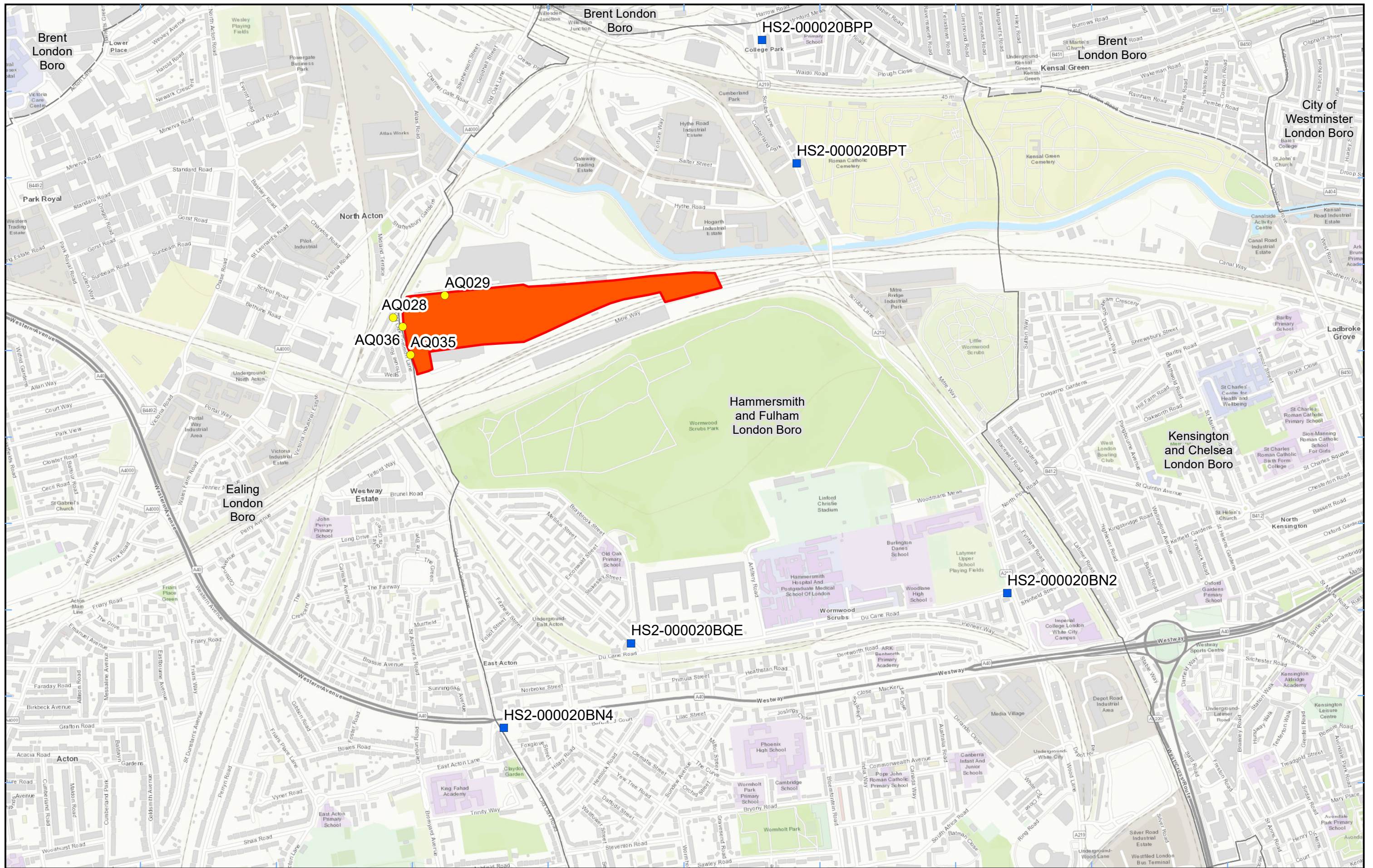
Monthly Summary

- 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 July and August 2021 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, Figures 1 and 2, includes:
- Old Oak Common Depot and mobilisation and new site set up for the station works.
 - Ground reduction works;
 - Permanent Accommodation Building construction;
 - Vegetation Clearance;
 - HEX railway sidings demolition;
 - Construction of temporary haul roads;
 - Drainage installation;
 - Piling and excavation activities;
 - Platform, guide wall and muck away activities;
 - Top soil striping – Wormwood Scrubs; and
 - Haul Road Excavation and backfill.
- 1.1.5 Four (4) dust monitors are installed around the worksite, where earthworks, construction and trackout activities are underway. This site returned a medium 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 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 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 eleven (11) dust trigger alerts recorded during this monitoring period (August 2021). Triggers are presented in Appendix B, Table 2. All other results in line with the expected ranges.
- 1.1.9 Data capture was below 90% for monitors AQ029 and AQ036. AQ029 was replaced on two occasions during August 2021, with the replacement monitor developing a fault which led to the low data capture. Monitor AQ036 was disconnected for rerouting cables which led to the low data capture.
- 1.1.10 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at seven (7) locations around highways within the LBHF 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 were received during this reporting period.

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

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Map Number

Map Name

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

**London Borough of Hammersmith
and Fulham**

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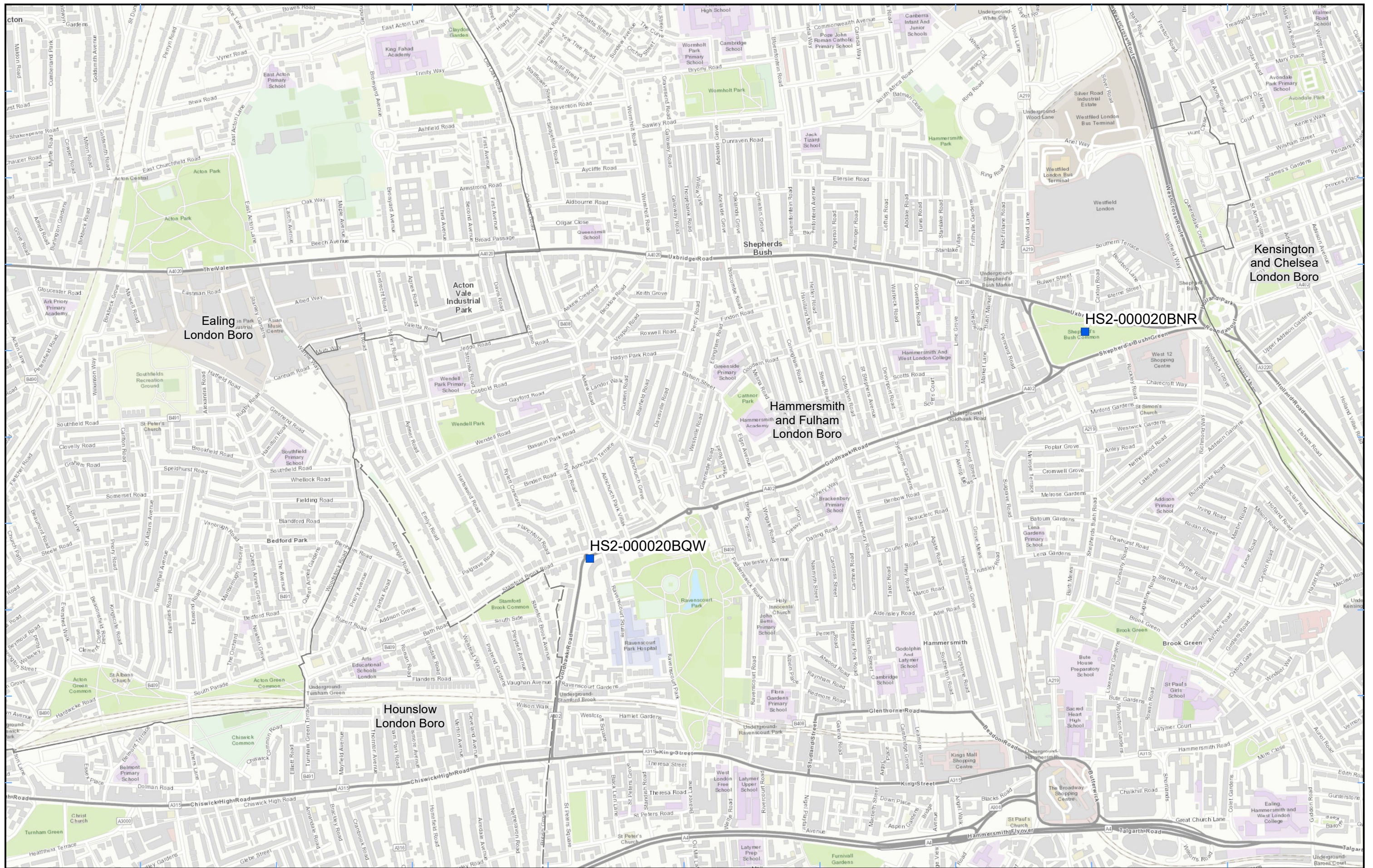
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Legend
 Diffusion Tube
 District Borough Unitary Boundaries

Map Number
 Map Name
**Monitoring Locations In LBHF
 (Sheet 2)**
**London Borough of Hammersmith
 and Fulham**


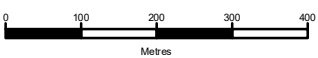
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Appendix B – Dust Monitoring Results

Table 1 Dust Monitoring locations and August 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 (%)
AQ028	521302, 182067	Wells House Road	M	Yes	N	25.2	2.0	205.2	1	100.0
AQ029	521453, 182132	Old Oak Common	H	Yes	N	11.2	1.6	52.7	0	66.3
AQ035	521353, 181959	Old Oak Common	H	Yes	N	27.3	2.3	345.8	10	100.0
AQ036	521330, 182041	Old Oak Common	H	Yes	N	9.5	1.6	33.0	0	85.2

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

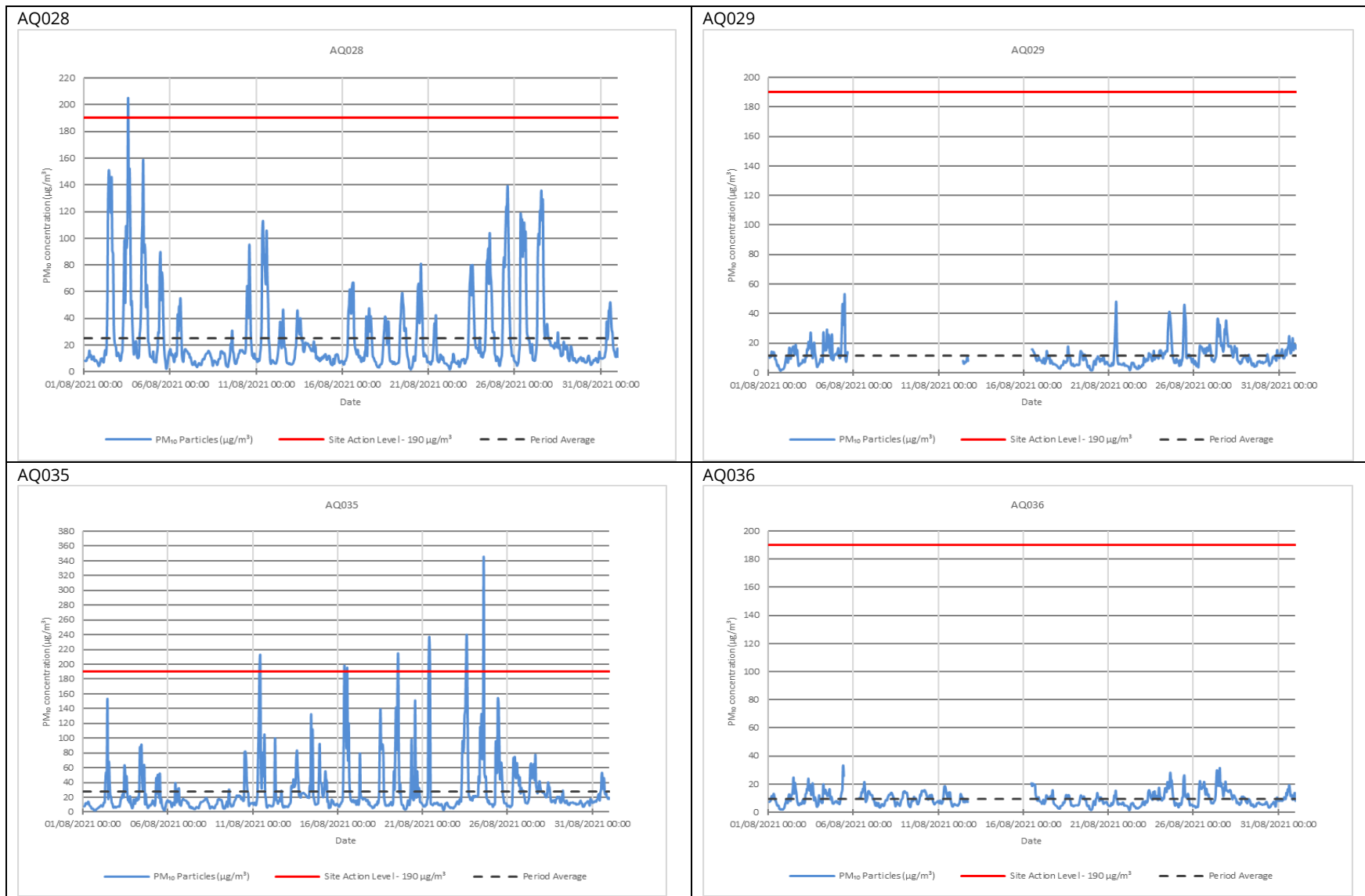
Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ028	03/08/2021 14:01-15:00 205.2 µg/m ³	<p>Activities on site at the time of the trigger alert were as follows:</p> <ul style="list-style-type: none"> Ecology - Strimming vegetation activities were occurring in North west corner of the site and Chipping Timber. Site Accommodation - A Z45 mobile elevating work platform (boom lift) was in use at the time of the exceedance, but not in close proximity to the monitor. Piling and DWall West Box – D-wall on Zone 1 and 2 + Piling Zone 2 Central Box – No D-wall – Muck Away was happening 	<p>The roadsweeper was instructed to sweep up and down Old Oak Common Lane.</p> <p>The site team will continue to implement best practice dust mitigation measures when undertaking vegetation clearance works.</p> <p>The movements of the Z45 mobile elevating work platform were temporarily limited.</p> <p>At the time of the alert there were 2 bowsers on site.</p> <p>1 2000L browser was working across all work areas until 1pm and a new 9000L browser was active from 1pm across the West box down to zone</p>

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
			<p>There were also 4 jet washes in place which are used for the restricted work areas that the bowsers cannot be taken. The wheel wash is active with all vehicles undertaking activities passing through prior to leaving the site. Best practicable means are followed as per the S61 requirements.</p> <p>Dust suppression measures in place site wide using a 9t dumper and dust suppression bowser dampening down haul roads. Hex rail sidings demolition works have a static dust suppression unit in place dampening down works area and stockpiles prior to loading demolition arisings.</p> <p>Activities on site are not likely to have caused the exceedance. There was a significant amount of suppression deployed to reduce dust. The north-westerly wind direction at the time suggests an external factor, but this source could not be established. We are investigating the possibility that the roadsweeper may have caused the trigger alert.</p> <p>Mitigation continues to be applied across the site</p>
AQ035	<p>11/08/2021 08:01 – 09:00; 195.1 µg/m³ 09:01 – 10:00; 211.3 µg/m³</p>	<p>Demolition works to substation by main site entrance complete. Demolition to Heathrow Express way railway sidings ongoing with break out of redundant platforms and rail lines. Loading of demolition arisings onto tippers for removal from site</p> <p>Two lorries are on site, and both crane and mobile elevating work platforms (MEWPs) not in operation. All other works are ongoing inside the Modular Building.</p> <p>Site deliveries and site vehicles moving on site haul roads. The monitor sits on a 2-way site access and is adjacent to the public road. The volume of diesel vehicles from work vehicles and to a lesser extent from road vehicles are likely to cause spike of dust.</p> <p>No activities in the North side of site during the alert. Monitor located at a great distance from this work area. Low level vegetation strimming on AD1A and AD1B.</p>	<p>Static oscillating dust suppression units in place for dampening down demolition works area and stockpiles prior to loading. This unit covers a span of 20m radius. A 9 tonne dumper is on rotation ensuring work areas and access roads are dampened down. Image of dust suppression unit used on site is provided below in Figure 3. The crane and MEWPs are to be monitored for dust once we start the lifting operations and dampening down to be done to stop dust. Monitor dust prior to delivery of units and when craning, also when lorries depart site.</p> <p>Road sweeper broken down at 8.15am. The water bowser was employed constantly when sweeper was out of commission. Additionally, the traffic supervisor was damping done the road at the main delivery gate. Replacement to arrive at 11.30am on site to suppress dust.</p> <p>Best Practical Means measures in place in the northern areas of site. A 9000l bowser in use and 6000l bowser in use. The low-level vegetation trimming works are not anticipated to cause any dust, and are not in close proximity to AQ035. However, the vegetation works will continue to implement best practice dust</p>

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
			mitigation where applicable. Ongoing monitoring of works by area supervisor for the low-level vegetation trimming. The trimming is not taken during high winds as this may increase risk of dust generation and dust travelling.
AQ035	<p>16/08/2021 08:01 – 09:00; 198.3 µg/m³ 09:01 – 10:00; 195.6 µg/m³</p>	<p>Demolition to Heathrow Express way railway sidings as part of the 3.1 infrastructure works to the south of the monitor. No works in progress since 12.00 today</p> <p>Internal works only, no external activities apart from vehicles (vans) arriving to park on site. Site deliveries and site vehicles moving on site haul roads. The monitor sits on a 2-way site access and is adjacent to the public road. The volume of diesel vehicles from work vehicles and to a lesser extent from road vehicles are likely to cause spike of dust. West Box, Central Box, no activity near AQ035. Tidying up in AD8.1 following completion of vegetation clearance. This includes snagging so there may be a very limited amount of vegetation clearance using a chainsaw.</p>	<p>for dampening down demolition works area and stockpiles prior to loading off site. This unit covers a span of 20m radius. A 9 tonne dumber is on rotation ensuring work areas and access roads are dampened down. Image of dust suppression unit used on site is provided below in Figure 3.</p> <p>No actions required as AQ35 is the main entrance to site where all large vehicles enter.</p> <p>There was a new road sweeper driver and he needed to be site inducted. The road sweeper did not start until 09:45. Water bowser and water hose were being used at main gate while the new driver was being inducted.</p> <p>Water bowsers used to damp down piling platforms. Traffic marshals using water hose at main gate.</p> <p>The low-level vegetation trimming works are anticipated to generate negligible quantities of dust, and are not in close proximity to AQ035. Dust emissions will be continuously monitored and if the works do start generating significant dust emissions, appropriate mitigation will be implemented.</p>
	<p>19/08/2021 12:01 – 13:00 212.3 µg/m³</p>	<p>Vehicles were entering and leaving site on haul roads at the time of the exceedance. The monitor sits on a 2-way site access and is adjacent to the public road. The volume of diesel vehicles from work vehicles and to a lesser extent from road vehicles are likely to cause spike of dust. The clearance of low-level vegetation was occurring in AD1A and AD1B at the time of the exceedance.</p> <p>The demolition of Heathrow Express railway sidings were occurring on this day, but no works were being carried out at the time of the exceedance. Other works on site were located in the West Box and Central Box, internal works and roof works. These works</p>	<p>A road sweeper was in use continually on haul roads. An image of road conditions is provided below in Figure 4.</p> <p>Other actions taken include the traffic marshal using a water hose at the site entrance to dampen down the road.</p> <p>The clearance of vegetation would generate negligible quantities of dust and would be localised to the immediate area. Best practice was implemented but no addition actions were proposed. Best practice was implemented but no addition actions were proposed.</p> <p>A bowser was operational during the shift. Best practice was implemented but no addition actions were proposed.</p>

Monitoring site ID	Period exceeding trigger level	Investigation	Outcomes / Resolution / Remedial measures implemented
		<p>were not in close proximity to the monitor and are unlikely to have contributed to the exceedance.</p>	
	<p>21/08/2021 08:01 – 09:00; 237.2 µg/m³ 09:01 – 10:00; 209.3 µg/m³</p>	<p>Vehicles entering and leaving site. These vehicles are moving on site haul roads directly next to monitor AQ035. West Box, Zone 2 - Concreting D-wall Panel S18 – lorries driving past AQ035 on haul road. No other works were carried out in the vicinity to the monitor at the time of the alerts</p>	<p>Continually using road sweeper and water bowser on site haul roads. All vehicles go through wheel wash before leaving site. No earthworks undertaken so no damping down of piling platform was required. Work area located at a considerable distance and as such, closer AQ monitors are to trigger prior to AQ035 in the event of high dust dispersion</p>
	<p>23/08/2021 12:01 – 13:00; 199.5 µg/m³ 13:01 – 14:00; 238.9 µg/m³</p>	<p>15 vehicles delivering to site during the time of the alerts. No external works/ machine works close to monitor at the time of alert Reinstatement of Hex railway sidings West Box, Central Box, East Box</p>	<p>Use of water bowser and water hose constantly at site entrance for vehicles. Relocation of the monitor has been raised, which is currently close to existing road level, due to number of alerts being received. No dusty activity works being undertaken. Reinstatement of exiting area. backfilling of area. Continual monitoring by area supervisor. Dust suppression in place utilising MOTOFOG. Two bowsers operating to wet down northern working areas</p>
	<p>24/08/2021 13:01 – 14:00 345.8 µg/m³</p>	<p>Road sweeper was continuing regular dampening down activities and was kept next to the monitor during the exceedance.</p>	<p>The team manning the road sweeper have been informed of this and will ensure the sweeper will have a clear route to prevent a reoccurrence of the exceedance. Additionally, a review of the monitoring locations is scheduled to ensure the monitors are providing dust exceedances reflective of the works on-site. The findings of the review will be sent across to London Borough of Ealing Council when completed.</p>

Figure 3: Construction dust 1-hour mean indicative PM₁₀ concentration for dust monitors



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
HS2-000020BN2	Lamp post on Du Cane Road	523092, 181264	52	49	46	42	45	Tube Missing	35						45
HS2-000020BN4	End of cycle lane sign on Old Oak Road	521625, 180871	55	49	47	54	48	43	34						47
HS2-000020BNR	Lamp posts in Shepherd's Bush Common	523481, 179871	42	39	34	33	34	25	26						33
HS2-000020BPP	Sign post on A219 Scrubs Lane, South of Harrow Road	522378, 182877	48	52	40	40	39	37	42						43
HS2-000020BPT	Controlled Zone/Zone Ends road sign on A219 Scrubs Lane, north of Hythe Road	522478, 182517	52	52	44	45	42	36	34						43
HS2-000020BQE	Lamp post next to No 11 Wulfstan Street	521996, 181118	38	33	33	29	27	19	21						29
HS2-000020BQW	Lamp post on A402 Goldhawk Road	522037, 179209	44	44	39	36	35	34	26						37

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.