AIRBORNE DUST MONITORING AT,
SELECTED LONDON UNDERGROUND TRAIN STATIONS 2024

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CONDITIONS OF ISSUE OF REPORTS.

THIS REPORT IS ISSUED IN CONFIDENCE AND SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL FROM 4-RAIL SERVICES.

FURTHER INFORMATION.

REQUESTS FOR ADDITIONAL INFORMATION ON THE SUBJECT OF THIS REPORT OR OTHER QUERIES SHOULD BE ADDRESSED TO THE AUTHOR.

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1. INTRODUCTION

1.1. 4-RAIL Services limited were requested by the client, Claude Snowdon, Noise, Vibration and Air Quality Lead, London Underground, to undertake dust monitoring at London Underground train stations.

1.2. The scope of works in based on ES12102, The Specification - London Underground Network: Occupational exposure to dust monitoring and survey. In addition, the client requested monitoring at two DLR train stations.

1.3. The objectives listed in ES12102 for the station monitoring are the following:

- To establish work shift exposures to respirable dust for station staff;
- To measure the respirable dust levels at the platforms and gate lines of the sample group of stations;
- To replicate each static monitoring measurement with PM2.5 and PM10 aerodynamic diameter fractions;
- To analyse 24 samples in inhalable fraction from the sample group of stations for their metallic content.

2. SAMPLING STRATEGY

2.1. The following stations and sample locations were monitored based on the client request and previous monitoring:

STATION	NO. SAMPLES	LOCATIONS
Aldgate East	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (District / Hammersmith & City line) Platform 2 (District / Hammersmith & City line)
Baker Street	8	Ticket Hall / Gate Line Outside Station Supervisor office Platform 5 (Circle / Hammersmith & City line) Platform 6 (Circle / Hammersmith & City line) Platform 7 (Jubilee Line) Platform 8 (Bakerloo line) Platform 9 (Bakerloo line) Platform 10 (Jubilee line)
Bank	4	Platform 4 (Northern line) Platform 5 (Central line) Platform 9 (DLR) Platform 10 (DLR)
Canada Water	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Jubilee line) Platform 2 (Jubilee line)
Colliers Wood	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line)
Cutty Sark	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (DLR) Platform 2 (DLR)
Elephant & Castle	7	Ticket Hall / Gate Line (Northern line) Ticket Hall / Gate Line (Bakerloo line) Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line) Platform 3 (Bakerloo line) Platform 4 (Bakerloo line)

STATION	NO. SAMPLES	LOCATIONS
Embankment	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 3 (Northern line) Platform 4 (Northern line) Platform 5 (Bakerloo line) Platform 6 (Bakerloo line)
Euston Square	5	Ticket Hall / Gate Line (North side) Ticket Hall / Gate Line (South side) Outside Station Supervisor office Platform 1 (Circle / Hammersmith & City / Metropolitan line) Platform 2 (Circle / Hammersmith & City / Metropolitan line)
Hampstead	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line)
Highbury & Islington	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 3 (Victoria line) Platform 5 (Victoria line)
Holborn	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Central line) Platform 2 (Central line) Platform 3 (Piccadilly line) Platform 4 (Piccadilly line)
Kennington	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line, via Charing Cross) Platform 2 (Northern line) Platform 3 (Northern line, via Bank) Platform 4 (Northern line)
King's Cross	11	Ticket Hall / Gate Line Ticket Hall / Gate Line (Circle line) Outside Station Supervisor office Platform 1 (Circle / Hammersmith & City / Metropolitan line) Platform 2 (Circle / Hammersmith & City / Metropolitan line) Platform 3 (Victoria line) Platform 4 (Victoria line) Platform 5 (Piccadilly line) Platform 6 (Piccadilly line) Platform 7 (Northern line) Platform 8 (Northern line)
London Bridge	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line) Platform 3 (Jubilee line) Platform 4 (Jubilee line)
Mile End	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Central line) Platform 2 (District / Hammersmith & City line) Platform 3 (District / Hammersmith & City line) Platform 4 (Central line)
Moorgate	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Circle / Hammersmith & City / Metropolitan line) Platform 2 (Circle / Hammersmith & City / Metropolitan line) Platform 7 (Northern line) Platform 8 (Northern line)

STATION	NO. SAMPLES	LOCATIONS
Oxford Circus	8	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Central line) Platform 2 (Central line) Platform 3 (Bakerloo line) Platform 4 (Bakerloo line) Platform 5 (Victoria line) Platform 6 (Victoria line)
Paddington	6	Ticket Hall / Gate Line (Bakerloo line) Outside Station Supervisor office Platform 1 (Circle / District line) Platform 2 (Circle / District line) Platform 3 (Bakerloo line) Platform 4 (Bakerloo line)
Piccadilly Circus	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Bakerloo line) Platform 2 (Bakerloo line) Platform 3 (Piccadilly line) Platform 4 (Piccadilly line)
Tooting Bec	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line)
Tottenham Court Road	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Central line) Platform 2 (Central line) Platform 3 (Northern line) Platform 4 (Northern line)
Vauxhall	4	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Victoria line) Platform 2 (Victoria line)
Waterloo	8	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Northern line) Platform 2 (Northern line) Platform 3 (Bakerloo line) Platform 4 (Bakerloo line) Platform 5 (Jubilee line) Platform 6 (Jubilee line)
Westminster	6	Ticket Hall / Gate Line Outside Station Supervisor office Platform 1 (Circle / District line) Platform 2 (Circle / District line) Platform 3 (Jubilee line) Platform 4 (Jubilee line)

2.2. The following analysis was undertaken for the above locations:

PARAMETER	SAMPLE MEDIA / TECHNIQUE	LOCATIONS	ANALYSIS
Respirable Dust	Active sampling pumps with PVC filters and Cyclone sampling heads. Monitoring undertaken in line with MDHS 14/4. Sampling flowrate 2.2L/min. Limit of detection 0.02mg/m^3.	Each location	In-house gravimetric analysis accredited to UKAS ISO17025.
Inhalable Dust	Active sampling pumps with of PVC filters and IOM inhalable sampling heads. Monitoring undertaken in line with MDHS 14/4. Sampling flowrate 2.0L/min. Limit of detection 0.02mg/m^3.	One selected platform	In-house gravimetric analysis accredited to UKAS ISO17025.

PARAMETER	SAMPLE MEDIA / TECHNIQUE	LOCATIONS	ANALYSIS
PM2.5	Active sampling pumps with of PVC filters and SKC PEM PM2.5 impactor sampling heads. Sampling flowrate 2.0L/min	Each location	In-house gravimetric analysis
PM10	Active sampling pumps with of PVC filters and SKC PEM PM10 impactor sampling heads. Sampling flowrate 2.0L/min	Each location	In-house gravimetric analysis
Metals	ICP-MS analysis for aluminium*, arsenic, chromium, copper, iron oxide, nickel, manganese and zinc,	Inhalable dust sample	Subcontracted analysis to Institute of Occupational Medicine (IOM), UKAS lab. No. 0307. *non-accredited

3. HAZARD INFORMATION, EXPOSURE LIMITS & GUIDELINE VALUES

3.1. Control of Substances Hazardous to Health

3.1.1. The Control of Substances Hazardous to Health (COSHH) regulations define substances as hazardous to health as follows:

a) Substances with harmonised classification in Table 3.2 Part 3 of Annex VI of the CLP regulations which indicate the substance is very toxic, toxic, harmful, corrosive or an irritant;

b) Substances with a Health and Safety Executive approved workplace exposure limit in EH40/2005;

c) Which is a biological agent;

d) Dust of any kind, except dust which is a substance within paragraph (a) or (b) which exceeds the limits given COSHH Regulation 2 for inhalable or respirable dust;

e) Which, not being a substance falling within sub-paragraphs (a) to (d), because of its chemical or toxicological properties and the way it is used or is present at the workplace creates a risk health.

3.1.2. Where substances which are hazardous to health are present, the COSHH Regulation require employers to prevent or control the exposure to the hazardous substance.

3.1.3. Control is defined as adequate based on the following criteria:

a) The principles of good practice are applied;

b) Any WEL is not exceeded;

c) Exposure to asthmagens, carcinogen and mutagens are reduced to as low as is reasonably practicable.

3.1.4. WELs are British Occupational exposure limits that are designed to protect the health of workers.

3.1.5. WELs are concentrations of a hazardous substance in air, averaged over a period of time. The two time periods generally used in WELs are:

a) Long term 8-hour Time Weighted Average (8-hr TWA)

b) 15-minute Short-Term Exposure Limits (15-mintue STEL)

3.1.6. HSE document EH40/2005 (Fourth Edition 2020) is a list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002.

3.1.7. Note, WELs are applicable to personal samples only. Static samples are for information purposes only.

3.2. Inhalable Dust

3.2.1. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing, and is therefore available for deposition anywhere in the respiratory tract. Inhalable dust nominally comprises of dust particles with an aerodynamic diameter of <100µm (EN 481:1993 and ISO 7708:1995).

3.2.2. Inhalable dust has a WEL in COSHH 2002 L5 6th Edition, Regulation 2, of 10mg/m^3 8-hour TWA LTEL. Any substance above this limit would be considered a substance hazardous to health.

3.3. Respirable Dust

3.3.1. Respirable dust is the fraction of dust that can penetrate down to the deep lung, where gas exchange takes place. Respirable dust will have a nominal aerodynamic diameter of 4µm (EN 481:1993 and ISO 7708:1995). Respirable dust, dependent upon the specific nature, can be linked to fibrosis, scarring of the lung as well as cancer and other health complaints.

3.3.2. Respirable dust has a WEL in COSHH 2002 L5 6th Edition, Regulation 2, of 4mg/m^3 8-hour TWA LTEL. Any substance above this limit would be considered a substance hazardous to health.

3.4. Inhalable Metals

3.4.1. The table below details the exposure limits for the selected metals, based on the client scope, as detailed within the HSE EH40/2005 WELs:

SUBSTANCE	LONG-TERM EXPOSURE LIMIT (8-HOUR TIME WEIGHTED AVERAGE)
	MG/M^3
Aluminium metal / Aluminium oxides	10
Arsenic and arsenic compounds except arsine (as As)	0.1
Chromium	0.5
Copper and compounds: dust and mists (as Cu)	1
Iron Oxide, fume (as Fe)	5.0
Manganese and its inorganic compounds (as Mn)	0.2
Nickel and its inorganic compounds (except nickel tetracarbonyl):nickel and water-insoluble nickel compounds (as Ni)	0.5

3.4.2. Zinc does not currently have a limit in HSE EH40/2005.

3.5. Particulate Matter 2.5 and 10

3.5.1. Particulate Matter (PM) is a mixture of micrometre sized solid and liquid particulates of various sizes and chemical composition. It is recognised as pollutant with an impact on human health.

3.5.2. There are two fractions of particular health interest due to their sizes. These dust fractions are defined by their diameters, with aerosol particulates having a diameter of less than 10µm, known as PM10 and aerosol particulates with a diameter of less than 2.5µm, known as PM2.5. Due to their size differences, PM10 is known as the coarse fraction and PM2.5 is known as the fine fraction.

3.5.3. Exposure to particulate matter and dust can result in a wide range of health effects, predominantly to the respiratory and cardiovascular systems. Susceptibility to health effects can also be influenced by any pre-existing health conditions or age.

3.5.4. While particulate matter is known to cause adverse effects to human health, they are not assessed using Workplace Exposure Limits.

3.5.5. Sources of PM vary based on location, with the source of PM in urban environments mainly from road traffic. Within the railway environment the particulate matter mainly originates from the train wheel and rail interface, braking activity, but may also be from cementitious sources. Studies to determine concentrations and compositions of the PM2.5 within the underground environment have noted that iron oxide is the most predominant at 47% of the overall composition (J.D. Smith et al., 2020).

4. RESULTS

4.1. See Tables 1 to 25 for the summary of airborne dust monitoring results.

- See Table 1 for a summary of the results for Aldgate East;
- See Table 2 for a summary of the results for Baker Street;
- See Table 3 for a summary of the results for Bank;
- See Table 4 for a summary of the results for Canada Water;
- See Table 5 for a summary of the results for Colliers Wood;
- See Table 6 for a summary of the results for Cutty Sark;
- See Table 7 for a summary of the results for Elephant & Castle;
- See Table 8 for a summary of the results for Embankment;
- See Table 9 for a summary of the results for Euston Square;
- See Table 10 for a summary of the results for Hampstead;
- See Table 11 for a summary of the results for Highbury & Islington;
- See Table 12 for a summary of the results for Holborn;
- See Table 13 for a summary of the results for Kennington;
- See Table 14 for a summary of the results for King's Cross;
- See Table 15 for a summary of the results for London Bridge;
- See Table 16 for a summary of the results for Mile End;
- See Table 17 for a summary of the results for Moorgate;
- See Table 18 for a summary of the results for Oxford Circus;
- See Table 19 for a summary of the results for Paddington;
- See Table 20 for a summary of the results for Piccadilly Circus;
- See Table 21 for a summary of the results for Tooting Bec;
- See Table 22 for a summary of the results for Tottenham Court Road;
- See Table 23 for a summary of the results for Vauxhall;
- See Table 24 for a summary of the results for Waterloo;
- See Table 25 for a summary of the results for Westminster.

4.2. See Table 26 for a summary of the inhalable metal results.

4.3. See Table 27 for a comparison of 2023 and 2024 data.

5. DISCUSSION

5.1. Site Visit and Sampling

5.1.1. Site attendances were carried out on the following dates:

- Aldgate East station – 1st July 2024
- Canada Water station – 2nd July 2024
- Colliers Wood station – 3rd July 2024
- Hampstead station – 4th July 2024
- Highbury & Islington station – 8th July 2024
- Tooting Bec station – 9th July 2024
- Vauxhall station – 10th July 2024
- Euston Square station – 11th July 2024
- Holborn station – 15th July 2024
- Embankment station – 17th July 2024
- Kennington station – 23rd July 2024
- London Bridge station – 25th July 2024
- Mile End station – 29th July 2024
- Moorgate station – 31st July 2024
- Paddington station – 2nd August 2024
- Piccadilly Circus station – 6th August 2024
- Tottenham Court Road station – 8th August 2024
- Westminster station – 12th August 2024
- Elephant & Castle station – 14th August 2024
- Baker Street station – 16th August 2024
- Oxford Circus station – 20th August 2024
- Bank station – 22nd August 2024
- Bank station (DLR) – 23rd August 2024 (separate attendance needed due to DLR requirements)
- Waterloo station – 28th August 2024
- Cutty Sark station – 29th August 2024
- King's Cross station – 30th August 2024

5.1.2. Personal respirable samples were requested from a suitable station staff member during each attendance, however no staff volunteered.

5.1.3. Where a personal sample could not be taken, a static sample was taken outside the Station Supervisor office.

5.1.4. The sampling at Bank station on 22nd August 2024 had a reduced sampling scope following concerns raised by the station staff regarding the monitoring equipment being left unattended.

5.1.5. Due to equipment faults during the original attendance, reattendances were carried out at the following locations:

- Aldgate East station, all locations – 19th September 2024
- Moorgate station, all locations – 20th September 2024

5.1.6. Each dust fraction is sampled using a separate sample head, filter and pump. Therefore, the typical trends expected for the dust fractions, where the finer fractions typically have lower concentrations, may not be evident as the different dust fractions are sampled separately.

5.2. Aldgate East

5.2.1. The respirable dust concentrations recorded at Aldgate East station were between 0.23mg/m^3 and 0.37mg/m^3, with the highest concentration recorded on Platform 1 (Westbound, District / Hammersmith & City line) and Platform 2 (Eastbound, District / Hammersmith & City line).

5.2.2. The PM2.5 dust concentrations recorded at Aldgate East station were between 0.16mg/m^3 and 0.22mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, District / Hammersmith & City line).

5.2.3. The PM10 dust concentrations recorded at Aldgate East station were between 0.55mg/m^3 and 0.72mg/m^3, with the highest concentration recorded on Platform 1 (Westbound, District / Hammersmith & City line).

5.2.4. The inhalable dust concentration recorded at Aldgate East station Platform 2 (Eastbound, District / Hammersmith & City line) was 0.70mg/m^3.

5.3. Baker Street

5.3.1. The respirable dust concentrations recorded at Baker Street station were between 0.18mg/m^3 and 1.20mg/m^3, with the highest concentration recorded on Platform 8 (Southbound, Bakerloo line).

5.3.2. The PM2.5 dust concentrations recorded at Baker Street station were between 0.08mg/m^3 and 0.47mg/m^3, with the highest concentration recorded on Platform 8 (Southbound, Bakerloo line).

5.3.3. The PM10 dust concentrations recorded at Baker Street station were between 0.31mg/m^3 and 1.86mg/m^3, with the highest concentration recorded on Platform 8 (Southbound, Bakerloo line).

5.3.4. The inhalable dust concentration recorded at Baker Street station Platform 7 (Southbound, Jubilee line) was 1.22mg/m^3.

5.4. Bank

5.4.1. The respirable dust concentrations recorded at Bank station were between 0.42mg/m^3 and 0.75mg/m^3, with the highest concentration recorded on Platform 9 (Eastbound, DLR).

5.4.2. The PM2.5 dust concentrations recorded at Bank station were between 0.18mg/m^3 and 0.39mg/m^3, with the highest concentration recorded on Platform 5 (Westbound, Central line).

5.4.3. The PM10 dust concentrations recorded at Bank station were between 0.07mg/m^3 and 0.81mg/m^3, with the highest concentration recorded on Platform 9 (Eastbound, DLR).

5.4.4. The inhalable dust concentrations recorded at Bank station were between 0.64mg/m^3 and 0.87mg/m^3, with the highest concentration recorded on Platform 9 (Eastbound, DLR).

5.5. Canada Water

5.5.1. The respirable dust concentrations recorded at Canada Water station were between 0.20mg/m^3 and 0.60mg/m^3, with the highest concentration recorded on Platform 1 (Westbound, Jubilee line).

5.5.2. The PM2.5 dust concentrations recorded at Canada Water station were between 0.24mg/m^3 and 0.47mg/m^3, with the highest concentration recorded in the Ticket Hall / Gate Line. The next highest concentration monitored was on Platform 1 (Westbound, Jubilee line) with a concentration of 0.32mg/m^3.

5.5.3. The PM10 dust concentrations recorded at Canada Water station were between 0.33mg/m^3 and 0.80mg/m^3, with the highest concentration recorded on Platform 1 (Westbound, Jubilee line).

5.5.4. The inhalable dust concentration recorded at Canada Water station Platform 2 (Eastbound, Jubilee line) was 0.73mg/m^3.

5.6. Colliers Wood

5.6.1. The respirable dust concentrations recorded at Colliers Wood station were between 0.40mg/m^3 and 0.95mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.6.2. The PM2.5 dust concentrations recorded at Colliers Wood station were between 0.21mg/m^3 and 0.50mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.6.3. The PM10 dust concentrations recorded at Colliers Wood station were between 0.27mg/m^3 and 1.25mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.6.4. The inhalable dust concentration recorded at Colliers Wood station Platform 2 (Southbound, Northern line) was 1.13mg/m^3.

5.7. Cutty Sark

5.7.1. The respirable dust concentrations recorded at Cutty Sark station were between 0.17mg/m^3 and 0.29mg/m^3, with the highest concentration recorded on Platform 2 (Northbound, DLR).

5.7.2. The PM2.5 dust concentrations recorded at Cutty Sark station were between 0.10mg/m^3 and 0.33mg/m^3, with the highest concentration recorded on the Gate Line / Ticket Hall.

5.7.3. The PM10 dust concentrations recorded at Cutty Sark station were between 0.36mg/m^3 and 0.57mg/m^3, with the highest concentration recorded on Platform 1 (Southbound, DLR).

5.7.4. The inhalable dust concentration recorded at Cutty Sark station Platform 1 (Southbound, DLR) was 0.65mg/m^3.

5.8. Elephant & Castle

5.8.1. The respirable dust concentrations recorded at Elephant & Castle station were between 0.05mg/m^3 and 0.61mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.8.2. The PM2.5 dust concentrations recorded at Elephant & Castle station were between 0.06mg/m^3 and 0.18mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.8.3. The PM10 dust concentrations recorded at Elephant & Castle station were between 0.06mg/m^3 and 0.90mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.8.4. The inhalable dust concentration recorded at Elephant & Castle station Platform 3 (Northbound, Bakerloo line) was 0.42mg/m^3.

5.9. Embankment

5.9.1. The respirable dust concentrations recorded at Embankment station were between 0.49mg/m^3 and 1.53mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Northern line).

5.9.2. The PM2.5 dust concentrations recorded at Embankment station were between 0.39mg/m^3 and 0.85mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Northern line).

5.9.3. The PM10 dust concentrations recorded at Embankment station were between 0.84mg/m^3 and 2.23mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Northern line).

5.9.4. The inhalable dust concentration recorded at Embankment station Platform 6 (Southbound, Bakerloo line) was 1.73mg/m^3.

5.10. Euston Square

5.10.1. The respirable dust concentrations recorded at Euston Square station were between 0.14mg/m^3 and 0.43mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Circle / Hammersmith & City / Metropolitan line).

5.10.2. The PM2.5 dust concentrations recorded at Euston Square station were between <0.02mg/m^3 and 0.18mg/m^3, with the highest concentrations recorded on Platform 2 (Eastbound, Circle / Hammersmith & City / Metropolitan line).

5.10.3. The PM10 dust concentrations recorded at Euston Square station were between 0.12mg/m^3 and 0.43mg/m^3, with the highest concentrations recorded on Platform 2 (Eastbound, Circle / Hammersmith & City / Metropolitan line).

5.10.4. The inhalable dust concentration recorded at Euston Square station Platform 2 (Eastbound, Circle / Hammersmith & City / Metropolitan line) was 0.40mg/m^3.

5.11. Hampstead

5.11.1. The respirable dust concentrations recorded at Hampstead station were between <0.02mg/m^3 and 1.14mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.11.2. The PM2.5 dust concentrations recorded at Hampstead station were between 0.15mg/m^3 and 0.66mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.11.3. The PM10 dust concentrations recorded at Hampstead station were between 0.13mg/m^3 and 1.61mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.11.4. The inhalable dust concentration recorded at Hampstead station Platform 1 (Northbound, Northern line) was 1.53mg/m^3.

5.12. Highbury & Islington

5.12.1. The respirable dust concentrations recorded at Highbury & Islington station were between <0.02mg/m^3 and 0.91mg/m^3, with the highest concentration recorded on Platform 5 (Southbound, Victoria line).

5.12.2. The PM2.5 dust concentrations recorded at Highbury & Islington station were between 0.09mg/m^3 and 0.38mg/m^3, with the highest concentration recorded on Platform 5 (Southbound, Victoria line).

5.12.3. The PM10 dust concentrations recorded at Highbury & Islington station were between 0.16mg/m^3 and 1.08mg/m^3, with the highest concentration recorded on Platform 5 (Southbound, Victoria line).

5.12.4. The inhalable dust concentration recorded at Highbury & Islington station Platform 5 (Southbound, Victoria line) was 1.17mg/m^3.

5.13. Holborn

5.13.1. The respirable dust concentrations recorded at Holborn station were between 0.08mg/m^3 and 1.45mg/m^3, with the highest concentration recorded on Platform 3 (Westbound, Piccadilly line).

5.13.2. The PM2.5 dust concentrations recorded at Holborn station were between 0.30mg/m^3 and 0.76mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Central line).

5.13.3. The PM10 dust concentrations recorded at Holborn station were between 0.10mg/m^3 and 1.79mg/m^3, with the highest concentration recorded on Platform 3 (Westbound, Piccadilly line).

5.13.4. The inhalable dust concentration recorded at Holborn station Platform 3 (Westbound, Piccadilly line) was 1.80mg/m^3.

5.14. Kennington

5.14.1. The respirable dust concentrations recorded at Kennington station were between 0.23mg/m^3 and 1.02mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.14.2. The PM2.5 dust concentrations recorded at Kennington station were between 0.06mg/m^3 and 0.56mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.14.3. The PM10 dust concentrations recorded at Kennington station were between 0.19mg/m^3 and 1.87mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.14.4. The inhalable dust concentration recorded at Kennington station Platform 4 (Southbound, Northern line) was 1.14mg/m^3.

5.15. King's Cross

5.15.1. The respirable dust concentrations recorded at King's Cross station were between 0.02mg/m^3 and 1.18mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Victoria line).

5.15.2. The PM2.5 dust concentrations recorded at King's Cross station were between 0.05mg/m^3 and 0.90mg/m^3, with the highest concentration recorded on Platform 7 (Northbound, Northern line).

5.15.3. The PM10 dust concentrations recorded at King's Cross station were between 0.14mg/m^3 and 3.16mg/m^3, with the highest concentration recorded on Platform 3 (Northbound, Victoria line).

5.15.4. The inhalable dust concentration recorded at King's Cross station Platform 7 (Northbound, Northern line) was 0.88mg/m^3.

5.16. London Bridge

5.16.1. The respirable dust concentrations recorded at London Bridge station were between 0.56mg/m^3 and 1.15mg/m^3, with the highest concentration recorded on Platform 3 (Westbound, Jubilee line).

5.16.2. The PM2.5 dust concentrations recorded at London Bridge station were between 0.24mg/m^3 and 0.46mg/m^3, with the highest concentration recorded on Platform 4 (Eastbound, Jubilee line).

5.16.3. The PM10 dust concentrations recorded at London Bridge station were between 0.59mg/m^3 and 1.31mg/m^3, with the highest concentration recorded on Platform 3 (Westbound, Jubilee line).

5.16.4. The inhalable dust concentration recorded at London Bridge station Platform 4 (Eastbound, Jubilee line) was 0.91mg/m^3.

5.17. Mile End

5.17.1. The respirable dust concentrations recorded at Mile End station were between 0.21mg/m^3 and 0.71mg/m^3, with the highest concentration recorded on Platform 4 (Eastbound, Central line).

5.17.2. The PM2.5 dust concentrations recorded at Mile End station were between 0.24mg/m^3 and 0.39mg/m^3, with the highest concentration recorded on Platform 4 (Eastbound, Central line).

5.17.3. The PM10 dust concentrations recorded at Mile End station were between 0.27mg/m^3 and 0.94mg/m^3, with the highest concentration recorded on Platform 4 (Eastbound, Central line).

5.17.4. The inhalable dust concentration recorded at Mile End station Platform 4 (Eastbound, Central line) was 0.92mg/m^3.

5.18. Moorgate

5.18.1. The respirable dust concentrations recorded at Moorgate station were between 0.07mg/m^3 and 0.61mg/m^3, with the highest concentration recorded on Platform 8 (Southbound, Northern line).

5.18.2. The PM2.5 dust concentrations recorded at Moorgate station were between 0.07mg/m^3 and 1.28mg/m^3, with the highest concentration recorded on Platform 2 (Westbound, Circle / Hammersmith & City / Metropolitan line).

5.18.3. The PM10 dust concentrations recorded at Moorgate station were between 0.25mg/m^3 and 1.03mg/m^3, with the highest concentration recorded on Platform 7 (Northbound, Northern line).

5.18.4. The inhalable dust concentration recorded at Moorgate station Platform 8 (Southbound, Northern line) was 1.08mg/m^3.

5.19. Oxford Circus

5.19.1. The respirable dust concentrations recorded at Oxford Circus station were between 0.03mg/m^3 and 1.06mg/m^3, with the highest concentration recorded on Platform 6 (Northbound, Victoria line).

5.19.2. The PM2.5 dust concentrations recorded at Oxford Circus station were between 0.13mg/m^3 and 0.48mg/m^3, with the highest concentration recorded on Platform 1 (Westbound, Central line).

5.19.3. The PM10 dust concentrations recorded at Oxford Circus station were between 0.18mg/m^3 and 1.39mg/m^3, with the highest concentrations recorded on Platform 3 (Southbound, Bakerloo line).

5.19.4. The inhalable dust concentration recorded at Oxford Circus station Platform 1 (Westbound, Central line) was 1.08mg/m^3.

5.20. Paddington

5.20.1. The respirable dust concentrations recorded at Paddington station were between 0.05mg/m^3 and 1.09mg/m^3, with the highest concentration recorded on Platform 3 (Northbound, Bakerloo line).

5.20.2. The PM2.5 dust concentrations recorded at Paddington station were between <0.02mg/m^3 and 0.40mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Bakerloo line).

5.20.3. The PM10 dust concentrations recorded at Paddington station were between 0.10mg/m^3 and 1.29mg/m^3, with the highest concentration recorded on Platform 4 (Southbound, Bakerloo line).

5.20.4. The inhalable dust concentration recorded at Paddington station Platform 3 (Northbound, Bakerloo line) was 1.50mg/m^3.

5.21. Piccadilly Circus

5.21.1. The respirable dust concentrations recorded at Piccadilly Circus station were between 0.02mg/m^3 and 0.87mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Bakerloo line) and Platform 3 (Eastbound, Piccadilly line).

5.21.2. The PM2.5 dust concentrations recorded at Piccadilly Circus station were between 0.08mg/m^3 and 0.45mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Bakerloo line).

5.21.3. The PM10 dust concentrations recorded at Piccadilly Circus station were between 0.11mg/m^3 and 1.48mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Bakerloo line).

5.21.4. The inhalable dust concentration recorded at Piccadilly Circus station Platform 3 (Eastbound, Piccadilly line) was 1.35mg/m^3.

5.22. Tooting Bec

5.22.1. The respirable dust concentrations recorded at Tooting Bec station were between 0.35mg/m^3 and 0.91mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.22.2. The PM2.5 dust concentrations recorded at Tooting Bec station were between 0.29mg/m^3 and 0.45mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.22.3. The PM10 dust concentrations recorded at Tooting Bec station were between 0.32mg/m^3 and 1.13mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Northern line).

5.22.4. The inhalable dust concentration recorded at Tooting Bec station Platform 2 (Southbound, Northern line) was 1.01mg/m^3.

5.23. Tottenham Court Road

5.23.1. The respirable dust concentrations recorded at Tottenham Court Road station were between 0.05mg/m^3 and 0.95mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Central line).

5.23.2. The PM2.5 dust concentrations recorded at Tottenham Court Road station were between 0.11mg/m^3 and 0.48mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Central line).

5.23.3. The PM10 dust concentrations recorded at Tottenham Court Road station were between 0.20mg/m^3 and 1.24mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Central line).

5.23.4. The inhalable dust concentration recorded at Tottenham Court Road station Platform 3 (Northbound, Northern line) was 0.45mg/m^3.

5.24. Vauxhall

5.24.1. The respirable dust concentrations recorded at Vauxhall station were between 0.15mg/m^3 and 1.62mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Victoria line).

5.24.2. The PM2.5 dust concentrations recorded at Vauxhall station were between 0.14mg/m^3 and 0.67mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Victoria line).

5.24.3. The PM10 dust concentrations recorded at Vauxhall station were between 0.23mg/m^3 and 1.66mg/m^3, with the highest concentration recorded on Platform 1 (Northbound, Victoria line).

5.24.4. The inhalable dust concentration recorded at Vauxhall station Platform 1 (Northbound, Victoria line) was 1.59mg/m^3.

5.25. Waterloo

5.25.1. The respirable dust concentrations recorded at Waterloo station were between 0.28mg/m^3 and 1.35mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.25.2. The PM2.5 dust concentrations recorded at Waterloo station were between 0.10mg/m^3 and 0.48mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.25.3. The PM10 dust concentrations recorded at Waterloo station were between 0.35mg/m^3 and 1.75mg/m^3, with the highest concentration recorded on Platform 2 (Southbound, Northern line).

5.25.4. The inhalable dust concentration recorded at Waterloo station Platform 6 (Eastbound, Jubilee line) was 0.32mg/m^3.

5.26. Westminster

5.26.1. The respirable dust concentrations recorded at Westminster station were between 0.04mg/m^3 and 0.49mg/m^3, with the highest concentration recorded on Platform 3 (Eastbound, Jubilee line).

5.26.2. The PM2.5 dust concentrations recorded at Westminster station were between 0.08mg/m^3 and 0.18mg/m^3, with the highest concentration recorded on Platform 4 (Westbound, Jubilee line).

5.26.3. The PM10 dust concentrations recorded at Westminster station were between 0.13mg/m^3 and 0.47mg/m^3, with the highest concentration recorded on Platform 2 (Eastbound, Circle / District line).

5.26.4. The inhalable dust concentration recorded at Westminster station Platform 3 (Eastbound, Jubilee line) was 0.53mg/m^3.

5.27. Inhalable Metal Results

5.27.1. The inhalable aluminium concentrations recorded were between <0.003mg/m^3 and 0.022mg/m^3, with the highest concentrations recorded at Holborn (Platform 3, Westbound Piccadilly line) and King's Cross (Platform 7, Northbound Northern line). The next highest aluminium concentration was recorded at Embankment (Platform 6, Southbound Bakerloo line), with a concentration of 0.019mg/m^3.

5.27.2. The inhalable arsenic concentrations recorded were all below the limit of detection for the techniques used.

5.27.3. The inhalable copper concentrations recorded were between <0.001mg/m^3 and 0.004mg/m^3, with the highest concentrations recorded at Cutty Sark (Platform 1, Southbound DLR) and Bank (Platform 9, Eastbound DLR). The next highest copper concentration was recorded at Mile End (Platform 4, Eastbound Central line) and Oxford Circus (Platform 1, Westbound Central line), with a concentration of 0.003mg/m^3. Note, the remaining inhalable copper concentrations recorded were all below the limit of detection for the techniques used.

5.27.4. The inhalable chromium, total, concentrations recorded were between <0.001mg/m^3 and 0.003mg/m^3, with the highest concentrations recorded at Embankment (Platform 6, Southbound Bakerloo line), Holborn (Platform 3, Westbound Piccadilly line), Baker Street (Platform 7, Southbound Jubilee line), Piccadilly Circus (Platform 3, Eastbound Piccadilly line), Moorgate (Platform 8, Southbound Northern line) and Vauxhall (Platform 1, Northbound Victoria line).

5.27.5. The inhalable iron, as iron oxide, concentrations recorded were between 0.203mg/m^3 and 1.192mg/m^3, with the highest concentration recorded at Embankment (Platform 6, Southbound Bakerloo line). The next highest iron concentration was recorded at Holborn (Platform 3, Westbound Piccadilly line), with a concentration of 1.113mg/m^3.

5.27.6. The inhalable nickel concentrations recorded were all below the limit of detection for the techniques used.

5.27.7. The inhalable manganese concentration recorded were between <0.002mg/m^3 and 0.006mg/m^3, with the highest concentrations recorded at Embankment (Platform 6, Southbound Bakerloo line) and Holborn (Platform 3, Westbound Piccadilly line). The next highest manganese concentrations were recorded at Paddington (Platform 3, Northbound, Bakerloo line), Moorgate (Platform 8, Southbound Northern line) and Vauxhall (Platform 1, Northbound Victoria line), with a concentration of 0.005mg/m^3.

5.27.8. The inhalable zinc concentrations recorded were between <0.001mg/m^3 and 0.003mg/m^3, with the highest concentration recorded at Cutty Sark (Platform 1, Southbound DLR). The next highest zinc concentration was recorded at Bank (Platform 9, Eastbound DLR), with a concentration of 0.002mg/m^3. Note, the remaining inhalable zinc concentrations recorded were all below the limit of detection for the techniques used.

6. CONCLUSIONS

6.1. There were no exceedances to the COSHH limit for respirable and inhalable dust during the monitoring. The concentrations recorded were all below half the limit for dust of any composition to be considered hazardous to health.

6.2. There were no exceedances to the HSE EH40 Workplace Exposure Limits for the selected inhalable metals during the monitoring. The parameters monitored were all below half of the relevant workplace exposure limits, with the majority below a tenth of the relevant workplace exposure limits.

6.3. For the inhalable metals selected, iron was the main metal present. The iron is most likely from steel from the rail environment. The steel would also account for the presence of manganese in the inhalable dust. Note, the EH40 WEL for iron is applicable to iron fume.

6.4. The non-platform areas monitored, such as the ticket hall or gate lines, typically had lower airborne dust concentrations compared to the platform areas.

6.5. The respirable dust concentrations recorded are compared to the data obtained in 2023, see Table 27. See report 4RS-VT-230004-R728928 Rev 3 for the previously obtained data. Some observations on the comparison are as follows:

- The data shows that the mean of all the respirable dust concentrations in the 2024 monitoring was slightly higher compared to the results obtained in the 2023 monitoring, but the data is within the standard deviation of each other so the increase would not be considered significant;
- The data showed that most of the locations of the ten highest respirable dust concentrations were different in the 2024 monitoring compared to the results in the 2023 monitoring;
- Vauxhall (Platform 2, Southbound Victoria line), had the highest respirable dust concentration recorded, at 1.62mg/m^3, during the 2024 monitoring. The same location had the second-highest respirable dust concentration recorded, at 1.09mg/m^3, during the 2023 monitoring;
- The data shows that the mean of the platform area respirable dust concentrations in the 2024 monitoring was slightly higher compared to the results obtained in the 2023 monitoring, but the data is within the standard deviation of each other so the increase would not be considered significant;
- The data shows that there was no significant difference between the mean of the non-platform area respirable dust concentrations in the 2024 monitoring compared to the result obtained in the 2023 monitoring;
- The comparison of mean respirable dust concentrations is undertaken for information purposes only; but it should be noted that the respirable dust concentrations are likely to vary daily.

7. REFERENCES

EH40/2005 Workplace Exposure Limits, Fourth Edition 2020.

HSE L5 Sixth Edition, Control of Substances Hazardous to Health Regulations, 2002 (as amended) – Approved Code of Practice and guidance. 2013.

MDHS 14/4 – General methods for sampling and gravimetric analysis of respirable, thoracic and inhalable aerosols. 06/2014.

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TABLE 1. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – ALDGATE EAST

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	19/09/2024 09:31 to 14:00	0.23	-	-	-
Platform 1 - Westbound, District / Hammersmith & City line	Static	19/09/2024 09:50 to 13:57	0.37	0.16	0.72	-
Platform 2 - Eastbound, District / Hammersmith & City line	Static	19/09/2024 09:45 to 13:52	0.37	0.22	0.57	0.70
Ticket Hall / Gate Line – West	Static	19/09/2024 09:40 to 13:54	0.27	0.16	0.55	-

TABLE 2. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – BAKER STREET

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	16/08/2024 09:15 to 13:15	0.18	-	-	-
Platform 5 - Eastbound, Circle / Hammersmith & City line	Static	16/08/2024 09:10 to 13:18	0.33	0.08	0.53	-
Platform 6 - Westbound, Circle / Hammersmith & City line	Static	16/08/2024 09:05 to 13:09	0.37	0.18	0.62	-
Platform 7 - Southbound, Jubilee line	Static	16/08/2024 08:56 to 12:59	0.89	0.42	1.19	1.22
Platform 8 - Southbound, Bakerloo line	Static	16/08/2024 08:52 to 12:56	1.20	0.47	1.86	-
Platform 9 - Northbound, Bakerloo line	Static	16/08/2024 08:47 to 12:54	1.08	0.24	1.59	-
Platform 10 - Northbound, Jubilee line	Static	16/08/2024 08:44 to 12:52	0.71	0.36	0.97	-
Ticket Hall / Gate Line - Circle / Hammersmith & City / Metropolitan line	Static	16/08/2024 09:16 to 13:16	0.23	0.08	0.31	-

TABLE 3. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – BANK

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Platform 4 - Northbound, Northern line	Static	22/08/2024 09:26 to 13:26	0.42	0.18	0.61	0.64
Platform 5 - Westbound, Central line	Static	22/08/2024 09:16 to 13:16	0.74	0.39	0.07	-
Platform 9 - Eastbound, DLR	Static	23/08/2024 09:55 to 14:00	0.75	0.21	0.81	0.87
Platform 10 - Eastbound, DLR	Static	23/08/2024 09:58 to 14:00	0.51	Filter Damaged	0.79	0.76

TABLE 4. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – CANADA WATER

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	02/07/2024 09:32 to 13:32	0.21	-	-	-
Platform 1 - Westbound, Jubilee line	Static	02/07/2024 09:13 to 13:25	0.60	0.32	0.80	-
Platform 2 - Eastbound, Jubilee line	Static	02/07/2024 09:20 to 13:28	0.39	0.24	0.79	0.73
Ticket Hall / Gate Line	Static	02/07/2024 09:28 to 13:34	0.20	0.47	0.33	-

TABLE 5. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – COLLIERS WOOD

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	03/07/2024 09:11 to 13:17	0.40	-	-	-
Platform 1 - Northbound, Northern line	Static	03/07/2024 09:05 to 13:14	0.82	0.50	1.25	-
Platform 2 - Southbound, Northern line	Static	03/07/2024 08:53 to 13:12	0.95	0.42	1.20	1.13
Ticket Hall / Gate Line	Static	03/07/2024 09:15 to 13:21	0.29	0.21	0.27	-

TABLE 6. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – CUTTY SARK

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	29/08/2024 09:59 to 14:00	0.20	-	-	-
Platform 1 - Southbound, DLR	Static	29/08/2024 09:49 to 13:50	0.25	0.30	0.57	0.65
Platform 2 - Northbound, DLR	Static	29/08/2024 09:54 to 13:57	0.29	0.10	0.42	-
Ticket Hall / Gate Line	Static	29/08/2024 10:01 to 14:03	0.17	0.33	0.36	-

TABLE 7. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – ELEPHANT & CASTLE

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	14/08/2024 09:14 to 13:33	0.05	-	-	-
Platform 1 - Northbound, Northern line	Static	14/08/2024 09:44 to 13:45	0.61	0.18	0.90	-
Platform 2 - Southbound, Northern line	Static	14/08/2024 09:46 to 13:47	0.32	0.07	0.24	-
Platform 3 - Northbound, Bakerloo line	Static	14/08/2024 09:41 to 13:43	0.28	0.15	0.42	0.42
Platform 4 - Northbound, Bakerloo line	Static	14/08/2024 09:36 to 13:41	0.44	0.12	0.37	-
Ticket Hall / Gate Line - Bakerloo line	Static	14/08/2024 09:19 to 13:35	0.05	0.06	0.06	-
Ticket Hall / Gate Line - Northern line	Static	14/08/2024 09:50 to 13:50	0.20	0.12	0.31	-

TABLE 8. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – EMBANKMENT

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	17/07/2024 08:34 to 12:05	0.49	-	-	-
Platform 3 - Northbound, Northern line	Static	17/07/2024 09:00 to 12:24	1.33	0.45	2.12	-
Platform 4 - Southbound, Northern line	Static	17/07/2024 08:53 to 12:21	1.53	0.85	2.23	-
Platform 5 - Northbound, Bakerloo line	Static	17/07/2024 08:48 to 12:16	1.40	0.62	1.61	-
Platform 6 - Southbound, Bakerloo line	Static	17/07/2024 08:37 to 12:10	1.16	0.39	1.66	1.73
Ticket Hall / Gate Line	Static	17/07/2024 09:08 to 12:27	0.50	0.57	0.84	-

TABLE 9. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – EUSTON SQUARE

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	11/07/2024 09:34 to 13:36	0.14	-	-	-
Platform 1 - Westbound, Circle / Hammersmith & City / Metropolitan line	Static	11/07/2024 09:12 to 13:26	0.41	0.11	0.35	-
Platform 2 - Eastbound, Circle / Hammersmith & City / Metropolitan line	Static	11/07/2024 09:04 to 13:21	0.43	0.18	0.43	0.40
Ticket Hall / Gate Line - North side	Static	11/07/2024 09:31 to 13:34	0.18	0.10	0.28	-
Ticket Hall / Gate Line - South side	Static	11/07/2024 09:22 to 13:30	0.19	<0.02	0.12	-

TABLE 10. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – HAMPSTEAD

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	04/07/2024 09:35 to 13:49	<0.02	-	-	-
Platform 1 - Northbound, Northern line	Static	04/07/2024 09:52 to 13:54	0.91	0.66	1.61	1.53
Platform 2 - Southbound, Northern line	Static	04/07/2024 09:55 to 13:59	1.14	0.62	1.53	-
Ticket Hall / Gate Line	Static	04/07/2024 09:35 to 13:51	0.04	0.15	0.13	-

TABLE 11. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – HIGHBURY & ISLINGTON

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	08/07/2024 09:19 to 13:10	<0.02	-	-	-
Platform 3 - Northbound, Victoria line	Static	08/07/2024 09:04 to 13:06	0.60	0.32	0.51	-
Platform 5 - Southbound, Victoria line	Static	08/07/2024 08:55 to 13:00	0.91	0.38	1.08	1.17
Ticket Hall / Gate Line	Static	08/07/2024 09:14 to 13:08	0.10	0.09	0.16	-

TABLE 12. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – HOLBORN

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	15/07/2024 08:44 to 12:47	0.08	-	-	-
Platform 1 - Westbound, Central line	Static	15/07/2024 08:58 to 12:58	0.79	0.32	1.04	-
Platform 2 - Eastbound, Central line	Static	15/07/2024 09:07 to 13:07	0.97	0.76	1.06	-
Platform 3 - Westbound, Piccadilly line	Static	15/07/2024 09:16 to 13:16	1.45	0.61	1.79	1.80
Platform 4 - Eastbound, Piccadilly line	Static	15/07/2024 09:25 to 13:25	1.15	0.41	1.48	-
Ticket Hall / Gate Line	Static	15/07/2024 08:42 to 12:51	0.12	0.30	0.10	-

TABLE 13. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – KENNINGTON

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	23/07/2024 09:11 to 13:13	0.30	-	-	-
Platform 1 - Northbound, Northern line	Static	23/07/2024 09:02 to 13:07	0.79	0.06	0.94	-
Platform 2 - Southbound, Northern line	Static	23/07/2024 08:46 to 13:01	1.02	0.56	1.87	-
Platform 3 - Northbound, Northern line	Static	23/07/2024 09:08 to 13:11	0.74	0.47	1.17	-
Platform 4 - Southbound, Northern line	Static	23/07/2024 08:53 to 13:05	0.77	0.41	1.04	1.14
Ticket Hall / Gate Line	Static	23/07/2024 09:16 to 13:17	0.23	0.32	0.19	-

TABLE 14. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – KING'S CROSS

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	30/08/2024 09:23 to 12:23	0.06	-	-	-
Platform 1 - Westbound, Circle / Hammersmith & City / Metropolitan line	Static	30/08/2024 08:57 to 13:01	0.26	0.16	0.50	-
Platform 2 - Eastbound, Circle / Hammersmith & City / Metropolitan line	Static	30/08/2024 09:02 to 13:05	0.30	0.22	0.48	-
Platform 3 - Northbound, Victoria line	Static	30/08/2024 09:10 to 09:11	0.83	0.35	3.16	-
Platform 4 - Southbound, Victoria line	Static	30/08/2024 09:02 to 13:07	1.18	0.44	1.37	-
Platform 5 - Westbound, Piccadilly line	Static	30/08/2024 09:18 to 13:18	1.11	0.50	1.93	-
Platform 6 - Eastbound, Piccadilly line	Static	30/08/2024 09:25 to 13:26	0.74	0.24	0.96	-
Platform 7 - Northbound, Northern line	Static	30/08/2024 09:33 to 13:34	0.69	0.90	1.18	0.88
Platform 8 - Southbound, Northern line	Static	30/08/2024 09:39 to 13:41	0.91	0.47	1.31	-
Ticket Hall / Gate Line	Static	30/08/2024 09:18 to 13:18	0.02	0.05	0.14	-
Ticket Hall / Gate Line - Circle / Hammersmith & City / Metropolitan line	Static	30/08/2024 09:09 to 13:09	0.09	0.20	0.16	-

TABLE 15. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – LONDON BRIDGE

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	25/07/2024 09:26 to 13:34	0.57	-	-	-
Platform 1 - Northbound, Northern line	Static	25/07/2024 08:58 to 13:20	0.84	0.34	0.99	-
Platform 2 - Southbound, Northern line	Static	25/07/2024 08:42 to 13:26	0.92	0.37	1.21	-
Platform 3 - Westbound, Jubilee line	Static	25/07/2024 09:15 to 13:16	1.15	0.42	1.31	-
Platform 4 - Eastbound, Jubilee line	Static	25/07/2024 09:07 to 13:11	0.56	0.46	0.88	0.91
Ticket Hall / Gate Line	Static	25/07/2024 09:22 to 13:31	0.60	0.24	0.59	-

TABLE 16. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – MILE END

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	29/07/2024 09:11 to 13:20	0.21	-	-	-
Platform 1 - Westbound, Central line	Static	29/07/2024 09:03 to 13:15	0.56	0.29	0.37	-
Platform 2 - Westbound, District / Hammersmith & City line	Static	29/07/2024 09:06 to 13:16	0.45	0.24	0.63	-
Platform 3 - Eastbound, District / Hammersmith & City line	Static	29/07/2024 08:57 to 13:13	0.63	0.31	0.78	-
Platform 4 - Eastbound, Central line	Static	29/07/2024 08:52 to 13:11	0.71	0.39	0.94	0.92
Ticket Hall / Gate Line	Static	29/07/2024 09:10 to 13:18	0.23	0.25	0.27	-

TABLE 17. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – MOORGATE

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	20/09/2024 09:20 to 13:30	0.27	-	-	-
Platform 1 - Eastbound, Circle / Hammersmith & City / Metropolitan line	Static	20/09/2024 09:40 to 13:42	0.57	0.07	0.25	-
Platform 2 - Westbound, Circle / Hammersmith & City / Metropolitan line	Static	20/09/2024 09:38 to 13:45	0.20	1.28	0.33	-
Platform 7 - Northbound, Northern line	Static	20/09/2024 09:30 to 13:36	0.17	0.30	1.03	-
Platform 8 - Southbound, Northern line	Static	20/09/2024 09:33 to 13:38	0.61	0.40	0.97	1.08
Ticket Hall / Gate Line	Static	20/09/2024 09:22 to 13:33	0.07	0.23	0.41	-

TABLE 18. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – OXFORD CIRCUS

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	20/08/2024 10:07 to 14:10	0.03	-	-	-
Platform 1 - Westbound, Central line	Static	20/08/2024 09:35 to 13:46	0.89	0.48	1.00	1.08
Platform 2 - Eastbound, Central line	Static	20/08/2024 09:26 to 13:39	0.63	0.38	0.86	-
Platform 3 - Southbound, Bakerloo line	Static	20/08/2024 09:03 to 13:29	0.86	0.32	1.39	-
Platform 4 - Northbound, Bakerloo line	Static	20/08/2024 09:50 to 13:52	0.67	0.28	0.74	-
Platform 5 - Southbound, Victoria line	Static	20/08/2024 09:11 to 13:31	0.68	0.45	1.08	-
Platform 6 - Northbound, Victoria line	Static	20/08/2024 09:42 to 13:55	1.06	0.39	1.24	-
Ticket Hall / Gate Line	Static	20/08/2024 10:03 to 14:07	0.11	0.13	0.18	-

TABLE 19. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – PADDINGTON

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	02/08/2024 10:14 to 14:15	0.05	-	-	-
Platform 1 - Westbound, District / Circle line	Static	02/08/2024 09:37 to 13:40	0.07	<0.02	Negative result	-
Platform 2 - Eastbound, District / Circle line	Static	02/08/2024 09:30 to 13:45	0.08	0.05	0.10	-
Platform 3 - Northbound, Bakerloo line	Static	02/08/2024 09:48 to 13:55	1.09	0.37	1.27	1.50
Platform 4 - Southbound, Bakerloo line	Static	02/08/2024 10:01 to 14:01	0.95	0.40	1.29	-
Ticket Hall / Gate Line - Bakerloo Line	Static	02/08/2024 10:10 to 14:10	0.48	0.22	0.49	-

TABLE 20. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – PICCADILLY CIRCUS

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	06/08/2024 09:27 to 13:34	0.03	-	-	-
Platform 1 - Northbound, Bakerloo line	Static	06/08/2024 08:59 to 13:16	0.81	0.42	1.14	-
Platform 2 - Southbound, Bakerloo line	Static	06/08/2024 08:48 to 13:20	0.87	0.45	1.48	-
Platform 3 - Eastbound, Piccadilly line	Static	06/08/2024 09:20 to 13:28	0.87	0.38	1.43	1.35
Platform 4 - Westbound, Piccadilly line	Static	06/08/2024 09:07 to 13:24	0.83	0.35	0.73	-
Ticket Hall / Gate Line	Static	06/08/2024 09:31 to 13:36	0.02	0.08	0.11	-

TABLE 21. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – TOOTING BEC

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	09/07/2024 09:05 to 13:05	0.50	-	-	-
Platform 1 - Northbound, Northern line	Static	09/07/2024 08:55 to 12:55	0.75	0.45	1.13	-
Platform 2 - Southbound, Northern line	Static	09/07/2024 08:52 to 12:52	0.91	0.31	0.32	1.01
Ticket Hall / Gate Line	Static	09/07/2024 09:04 to 13:05	0.35	0.29	0.54	-

TABLE 22. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – TOTTENHAM COURT ROAD

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	08/08/2024 09:00 to 13:01	0.05	-	-	-
Platform 1 - Westbound, Central line	Static	08/08/2024 09:13 to 13:13	0.66	0.40	0.90	-
Platform 2 - Eastbound, Central line	Static	08/08/2024 09:18 to 13:18	0.95	0.48	1.24	-
Platform 3 - Northbound, Northern line	Static	08/08/2024 09:38 to 13:38	0.81	0.33	0.88	0.45
Platform 4 - Southbound, Northern line	Static	08/08/2024 09:30 to 13:30	0.77	0.41	0.28	-
Ticket Hall / Gate Line	Static	08/08/2024 08:55 to 12:58	0.45	0.11	0.20	

TABLE 23. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – VAUXHALL

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	10/07/2024 09:20 to 13:26	0.26	-	-	-
Platform 1 - Northbound, Victoria line	Static	10/07/2024 09:01 to 13:13	0.89	0.67	1.66	1.59
Platform 2 - Southbound, Victoria line	Static	10/07/2024 09:06 to 13:18	1.62	0.65	0.92	-
Ticket Hall / Gate Line	Static	10/07/2024 09:17 to 13:22	0.15	0.14	0.23	-

TABLE 24. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – WATERLOO

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	28/08/2024 11:08 to 13:40	0.54	-	-	-
Platform 1 - Northbound, Northern line	Static	28/08/2024 09:19 to 13:19	1.02	0.17	1.59	-
Platform 2 - Southbound, Northern line	Static	28/08/2024 09:11 to 13:11	1.35	0.48	1.75	-
Platform 3 - Northbound, Bakerloo line	Static	28/08/2024 09:30 to 13:31	0.99	0.47	0.85	-
Platform 4 - Southbound, Bakerloo line	Static	28/08/2024 09:25 to 13:25	1.05	0.44	1.46	-
Platform 5 - Westbound, Jubilee line	Static	28/08/2024 09:03 to 13:04	0.46	0.23	Pump failed	-
Platform 6 - Eastbound, Jubilee line	Static	28/08/2024 08:55 to 12:58	0.28	0.10	0.35	0.32
Ticket Hall / Gate Line	Static	28/08/2024 09:39 to 13:39	0.44	0.22	0.59	-

TABLE 25. SUMMARY OF STATION AIRBORNE DUST MONITORING RESULTS – WESTMINSTER

LOCATION	PERSONAL/ STATIC	DATE/TIME	RESPIRABLE CONCENTRATION / MG.M^{-3}	PM2.5 CONCENTRATION / MG.M^{-3}	PM10 DUST CONCENTRATION / MG.M^{-3}	INHALABLE DUST CONCENTRATION / MG.M^{-3}
Outside Station Supervisor office	Static	12/08/2024 09:46 to 14:13	0.04	-	-	-
Platform 1 - Westbound, District / Circle line	Static	12/08/2024 09:34 to 14:02	0.43	0.17	0.38	
Platform 2 - Eastbound, District / Circle line	Static	12/08/2024 09:41 to 14:08	0.48	0.16	0.47	-
Platform 3 - Eastbound, Jubilee line	Static	12/08/2024 09:20 to 13:40	0.49	0.08	0.38	0.53
Platform 4 - Westbound, Jubilee line	Static	12/08/2024 09:26 to 13:56	0.23	0.18	0.35	-
Ticket Hall / Gate Line	Static	12/08/2024 09:47 to 14:14	0.11	0.08	0.13	-

TABLE 26. SUMMARY OF STATION INHALABLE METALS RESULTS

LOCATION	DATE	AIR VOLUME / L	CR CONC. / MG.M^{-3}	MN CONC. / MG.M^{-3}	Fe_2O_3 CONC. / MG.M^{-3}	NI CONC. / MG.M^{-3}	CU CONC. / MG.M^{-3}	ZN CONC. / MG.M^{-3}	AS CONC. / MG.M^{-3}	AL CONC. / MG.M^{-3}
Aldgate East - Platform 2 Eastbound, District / Hammersmith & City line	19/09/2024 09:45 to 13:52	494	<0.001	0.002	0.394	<0.001	<0.001	<0.001	<0.001	0.003
Baker Street - Platform 7 Southbound, Jubilee line	16/08/2024 08:56 to 12:59	486	0.003	0.004	0.947	<0.001	<0.001	<0.001	<0.001	0.010
Bank - Platform 4 Northbound, Northern line	22/08/2024 09:26 to 13:26	480	<0.001	<0.003	0.459	<0.001	<0.001	<0.001	<0.001	0.003
Bank - Platform 9 Eastbound, DLR	23/08/2024 09:55 to 14:00	490	<0.001	<0.002	0.324	<0.001	0.004	0.002	<0.001	<0.003
Canada Water - Platform 2 Eastbound, Jubilee line	02/07/2024 09:20 to 13:28	496	0.001	<0.002	0.426	<0.001	<0.001	<0.001	<0.001	<0.003
Colliers Wood - Platform 2 Southbound, Northern line	03/07/2024 08:53 to 13:11	516	0.002	0.003	0.755	<0.001	<0.001	<0.001	<0.001	0.005
Cutty Sark - Platform 1 Southbound, DLR	29/08/2024 09:49 to 13:50	482	<0.001	<0.002	0.366	<0.001	0.004	0.003	<0.001	0.004
Elephant & Castle - Platform 3 Northbound, Bakerloo line	14/08/2024 09:41 to 13:43	484	<0.001	<0.002	0.293	<0.001	<0.001	<0.001	<0.001	0.003
Embankment - Platform 6 Southbound, Bakerloo line	17/07/2024 08:37 to 12:07	420	0.003	0.006	1.192	<0.001	<0.001	<0.001	<0.001	0.019
Euston Square - Platform 2 Eastbound, Circle / Hammersmith & City / Metropolitan line	11/07/2024 09:04 to 13:21	514	<0.001	<0.002	0.241	<0.001	<0.001	<0.001	<0.001	<0.003
Hampstead - Platform 1 Northbound, Northern line	04/07/2024 09:52 to 13:54	484	0.002	0.004	1.057	<0.001	<0.001	<0.001	<0.001	0.006
Highbury & Islington - Platform 5 Southbound, Victoria line	08/07/2024 08:55 to 13:00	490	0.002	<0.002	0.714	<0.001	<0.001	<0.001	<0.001	0.009

LOCATION	DATE	AIR VOLUME / L	CR CONC. / MG.M^{-3}	MN CONC. / MG.M^{-3}	Fe_2O_3 CONC. / MG.M^{-3}	NI CONC. / MG.M^{-3}	CU CONC. / MG.M^{-3}	ZN CONC. / MG.M^{-3}	AS CONC. / MG.M^{-3}	AL CONC. / MG.M^{-3}
Holborn - Platform 3 Westbound, Piccadilly line	15/07/2024 09:16 to 13:16	480	0.003	0.006	1.113	<0.001	<0.001	<0.001	<0.001	0.022
Kennington - Platform 4 Southbound, Northern line	23/07/2024 08:53 to 13:05	504	0.002	0.003	0.748	<0.001	<0.001	<0.001	<0.001	0.004
King's Cross - Platform 7 Northbound, Northern line	30/08/2024 09:33 to 13:34	482	<0.001	<0.002	0.506	<0.001	<0.001	<0.001	<0.001	0.022
London Bridge - Platform 4 Eastbound, Jubilee line	25/07/2024 09:07 to 13:11	488	0.002	0.003	0.712	<0.001	<0.001	<0.001	<0.001	0.005
Mile End - Platform 4 Eastbound, Central line	29/07/2024 08:52 to 13:11	518	<0.001	<0.002	0.657	<0.001	0.003	<0.001	<0.001	0.005
Moorgate - Platform 8 Southbound, Northern line	20/09/2024 09:33 to 13:38	490	0.003	0.005	0.715	<0.001	<0.001	<0.001	<0.001	0.007
Oxford Circus - Platform 1 Westbound, Central line	20/08/2024 09:35 to 13:46	502	0.002	0.003	0.753	<0.001	0.003	<0.001	<0.001	0.009
Paddington - Platform 3 Northbound, Bakerloo line	02/08/2024 09:49 to 13:55	492	0.002	0.005	0.998	<0.001	<0.001	<0.001	<0.001	0.017
Piccadilly Circus - Platform 3 Eastbound, Piccadilly line	06/08/2024 09:20 to 13:28	496	0.003	0.004	0.908	<0.001	<0.001	<0.001	<0.001	0.017
Tooting Bec - Platform 2 Southbound, Northern line	09/07/2024 08:52 to 12:52	480	0.001	0.003	0.748	<0.001	<0.001	<0.001	<0.001	0.009
Tottenham Court Road - Platform 3 Northbound, Northern line	08/08/2024 10:10 to 13:38	416	<0.001	<0.003	0.287	<0.001	<0.001	<0.001	<0.001	<0.003
Vauxhall - Platform 1 Northbound, Victoria line	10/07/2024 09:01 to 13:13	504	0.003	0.005	1.055	<0.001	<0.001	<0.001	<0.001	0.015
Waterloo - Platform 6 Eastbound, Jubilee line	28/08/2024 08:55 to 12:58	486	<0.001	<0.002	0.203	<0.001	<0.001	<0.001	<0.001	<0.003
Westminster - Platform 3 Eastbound, Jubilee line	12/08/2024 09:20 to 13:40	520	<0.001	<0.002	0.357	<0.001	<0.001	<0.001	<0.001	<0.003

TABLE 27. COMPARISON OF 2023 AND 2024 DATA – HIGHEST RESPIRABLE DUST CONCENTRATIONS

2023			2024		
LOCATION	DATE	RESPIRABLE DUST CONCENTRATION / MG.M^{-3}	LOCATION	DATE	RESPIRABLE DUST CONCENTRATION / MG.M^{-3}
Vauxhall – Platform 1 Northbound Victoria line	03/05/2023 09:29 to 14:03	1.23	Vauxhall – Platform 2 Southbound Victoria line	10/07/2024 09:06 to 13:18	1.62
Vauxhall – Platform 2 Southbound Victoria line	03/05/2023 09:38 to 14:05	1.09	Embankment – Platform 4 Southbound Northern line	17/07/2024 08:53 to 12:21	1.53
Hampstead – Platform 1 Northbound Northern line	27/04/2023 09:17 to 14:20	1.07	Holborn – Platform 3 Westbound Piccadilly line	15/07/2024 09:16 to 13:16	1.45
Highbury & Islington – Platform 3 Northbound Victoria line	28/04/2023 09:19 to 14:25	1.06	Embankment – Platform 5 Northbound Bakerloo line	17/07/2024 08:48 to 12:16	1.40
Bank – Platform 4 Northbound Northern line	01/06/2023 09:38 to 12:10	1.03	Waterloo – Platform 2 Southbound Northern line	28/08/2024 09:11 to 13:11	1.35
Tottenham Court Road – Platform 2 Eastbound Central line	17/05/2023 09:42 to 14:48	1.01	Embankment – Platform 3 Northbound Northern line	17/07/2024 09:00 to 12:24	1.33
Oxford Circus – Platform 5 Southbound Victoria line	23/05/2023 09:37 to 14:10	0.99	Baker Street – Platform 8 Southbound Bakerloo line	16/08/2024 08:52 to 12:56	1.20
Tottenham Court Road – Platform 1 Westbound Central line	17/05/2023 09:36 to 14:44	0.99	King's Cross – Platform 4 Southbound Victoria line	30/08/2024 09:02 to 13:07	1.18
Oxford Circus – Platform 3 Southbound Bakerloo line	23/05/2023 09:33 to 14:11	0.96	Embankment – Platform 6 Southbound Bakerloo line	17/07/2024 08:37 to 12:10	1.16
Tooting Bec – Platform 2 Southbound Northern line	02/05/2023 09:11 to 14:15	0.95	Holborn – Platform 4 Eastbound Piccadilly line	15/07/2024 09:25 to 13:25	1.15
Mean – 2023 (all respirable results)		**0.49 (SD = 0.29)**	**Mean – 2024 (all respirable results)**		**0.56 (SD = 0.38)**
Mean – 2023 (all platform results)		**0.65 (SD = 0.23)**	**Mean – 2024 (all platform results)**		**0.74 (SD = 0.34)**
Mean – 2023 (all non-platform results)		**0.22 (SD = 0.15)**	**Mean – 2024 (all non-platform results)**		**0.22 (SD = 0.16)**