

Air Quality and Dust Monitoring Monthly Report – **September** 2020

London Borough of Hillingdon



SKANSKA



Department for Transport

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High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

A report prepared by CSJV and Align JV on behalf of HS2 Ltd.

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Monthly Summary

- 1.1.1 This Summary Report is published in fulfilment of commitments detailed in the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, Annex 1: Code of Construction Practice, for the nominated undertaker to present the results of air quality and dust monitoring undertaken in the London Borough of Hillingdon (LBH) during August and September 2020 respectively.
- 1.1.2 Figure 1 to Figure 4 in Appendix A indicate the current worksites, together with air quality and dust monitoring locations.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2, which highlights: the applicable standards and guidance, as well as the air quality and dust monitoring methodologies to be implemented by nominated undertakers throughout construction.
- 1.1.4 The current phase of works commenced within the LBH in May 2018, the remaining of which are expected to be completed later in 2020. The next phase of construction works commenced in November 2019 and is expected to be completed by 2025. The current worksites, as presented in Appendix A, Figure 1 to Figure 4, include:
- 18' and 48' gas pipeline diversions, advanced planting and habitat creation, compound establishment and haul road creation;
 - Former Merck Sharpe Dohme (MSD) Breakspear Road South new site set up and haul road creation;
 - Utility diversions at Breakspear Road South;
 - Utility diversions at Cophall North and Cophall South;
 - West Ruislip Portal site set up, haul road creation and groundworks; and
 - South Ruislip mobilisation, site set up and ground works.
- 1.1.5 The Colne Valley Viaduct (CVV), Dews Lane and LTP2 worksites also fall within the administrative boundary of LBH. This phase of works commenced in July 2017 and is expected to be completed by October 2020 at the LTP2 worksite and by the end of April 2021 at the Dews Lane site. A further current phase of works at the CVV South Moorhall Road worksite commenced within LBH in September 2020 and is currently ongoing. Activities for each worksite within August, as presented in Appendix A, Figure 5 included:
- Dews Lane site:
- Site clearance - removal of grass, shrubs and tree stumps; and
 - Excavation to formation level.
- CVV LTP2 worksite:
- Load testing piles (out of hours on 1st, 2nd, 7th, 8th, 14th and 15th) on the 1st -16th September;
 - Removal of pile testing equipment with Hi-ab lorries on the 17th – 18th September;

- Dismantle and removal of welfare facilities using Hi-ab lorries on the 21st – 25th September;
- Vegetation clearance around site perimeter and central stockpile bund on the 28th – 29th September; and
- Removal of barriers and general site maintenance on the 30th September.

CVV South Moorhall Road worksite:

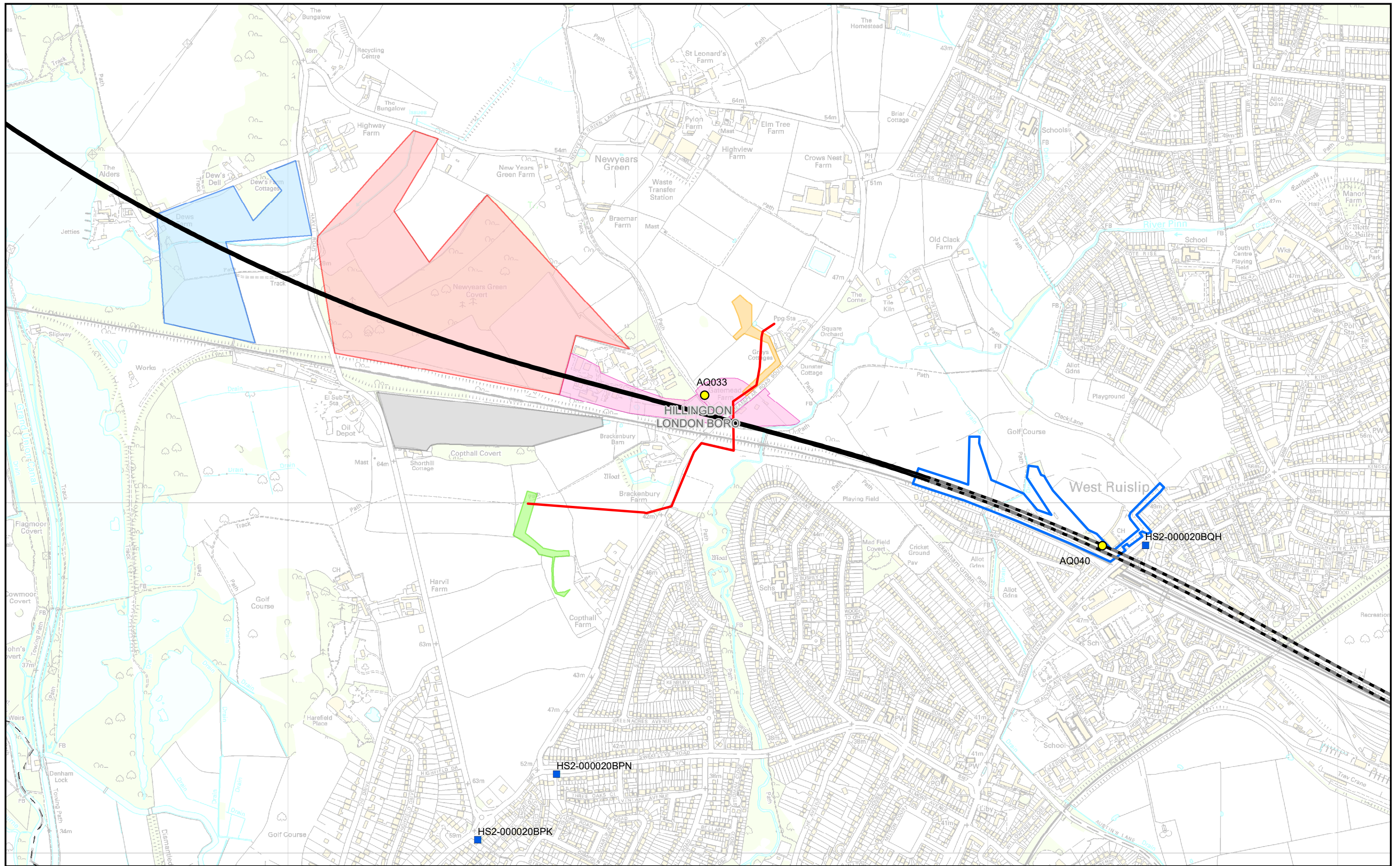
- Saw cutting, excavation of connection pits and sheet piling commencing at connection pits on the 1st – 6th September;
- Completion of excavation of pits, saw cutting, excavation of 60 m of trench and laying down the first trench boxes on the 7th – 13th September;
- Continuation of excavation of 60 m trench on the 14th – 20th September;
- Saw cutting multi-duct excavation and trial hole excavation on the 21st – 27th September; and
- Excavation of duct crossing, gas pipe component deliveries to site and welding pipework test in situ on the 28th – 30th September.

- 1.1.6 Three (3) dust monitors are installed around worksites, where demolition, earthworks, construction and trackout activities are underway. Two (2) monitors are located at the Dews Lane worksite and one (1) is located at the South Moorhall Road worksite. The sites returned a medium dust risk rating.
- 1.1.7 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 1. 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.
- 1.1.8 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.
- 1.1.9 There were three (3) dust trigger alerts recorded during the monitoring period (September 2020). Exceedances are presented in Appendix B, Table 2. All other results were in line with expected ranges.
- 1.1.10 Data capture for monitors AQ033, CVV-AQMP1-HC and DEWS-AQMP2-HC was below 90% for the month of September 2020. AQ033 and CVV-AQMP1-HC were newly installed monitors whereas monitor DEWS-AQMP2-HC experience power outages. A permanent hydrogen generator was installed on 25/09/2020 to allow for continuous monitoring of DEWS-AQMP2-HC.
- 1.1.11 Diffusion tube monitoring of Nitrogen Dioxide (NO₂) is undertaken at eleven (11) locations around highways within the LBH as part of the management of air quality where significant effects may occur as a result of the scheme.

- 1.1.12 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.
- 1.1.13 NO₂ monitoring locations and results are presented in Appendix C, Table 3, together with the 2020 running mean.
- 1.1.14 There were no (0) complaints received, relating to air quality, during this reporting period (September 2020).

Appendix A – Worksites and Monitoring Locations

Figure 1 to Figure 5: Current monitoring locations within the LBH



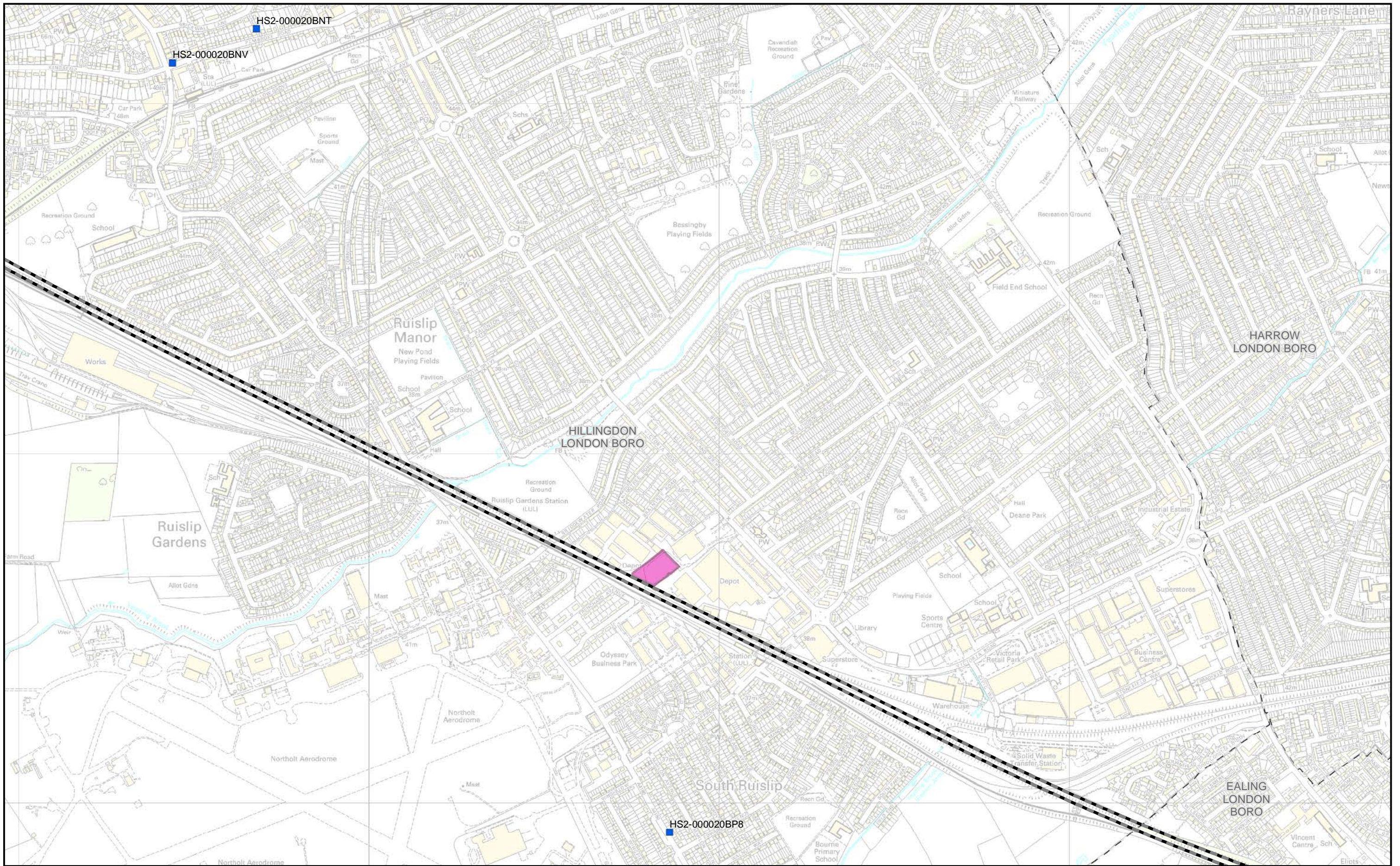
| Legend | |
|--------|-------------------------------------|
| | Route in tunnel |
| | Route on surface |
| | Diffusion tube monitoring location |
| | Dust monitoring location |
| | Trunk Main Diversion Route |
| | West Ruislip Portal |
| | Copthall North worksite |
| | Copthall South worksite |
| | 18' and 48' gas pipeline diversions |
| | Merck Sharpe Dhome worksite |
| | Utility Diversion worksite south |
| | Utility Diversion worksite north |

| | |
|------------------------------|---|
| Figure Number | |
| Figure Name | Worksites and Monitoring locations in LBH (sheet 1) |
| London Borough of Hillingdon | |

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- Legend**
- Route in tunnel
 - Route on surface
 - Diffusion tube monitoring location
 - South Ruislip Vent Shaft

Figure Number

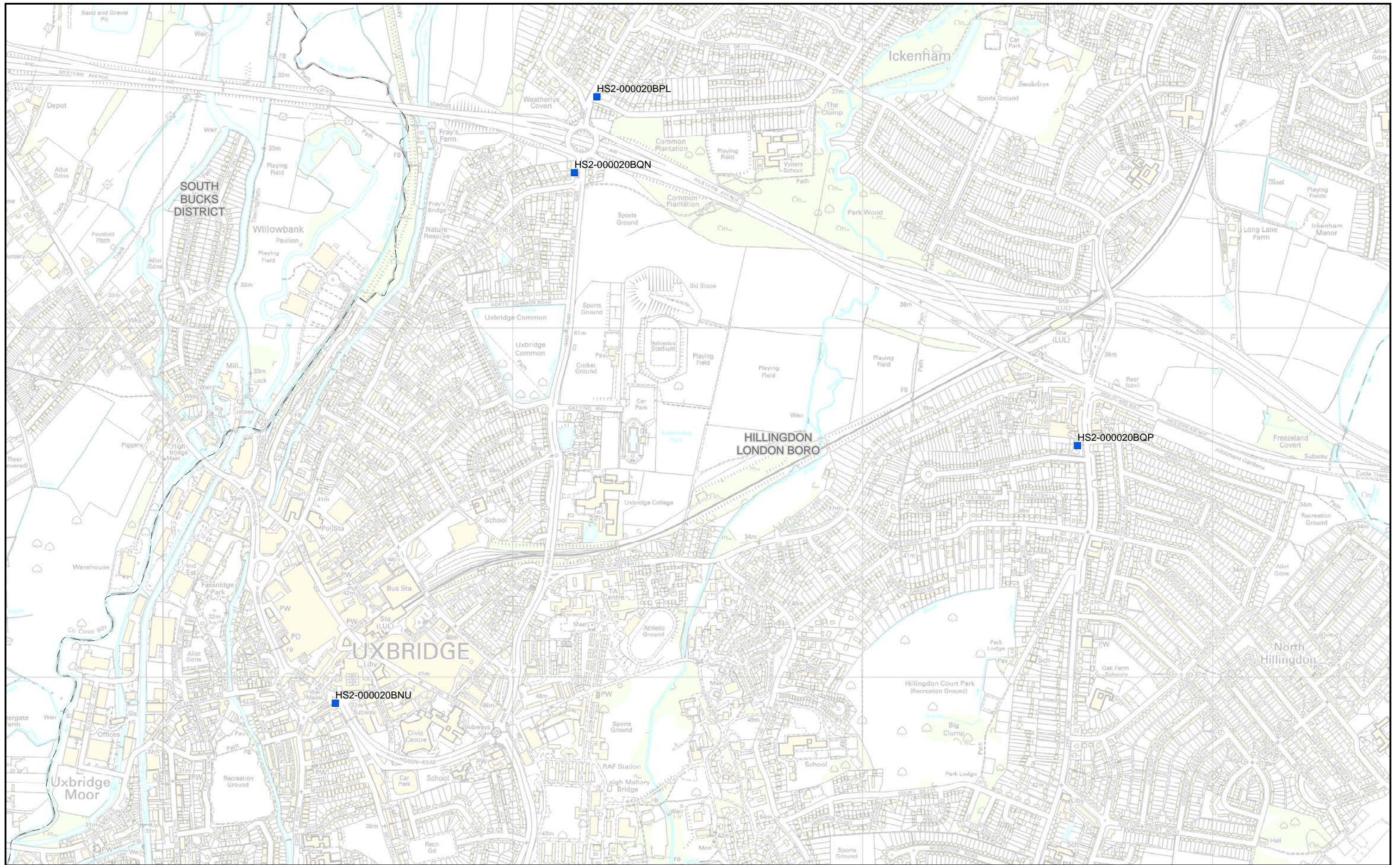
Figure Name
Worksites and Monitoring locations in LBH
 (sheet 2)




London Borough of Hillingdon

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Metres



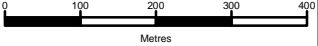
- Legend**
-  Route in tunnel
 -  Route on surface
 -  Diffusion tube monitoring location

| |
|--|
| Figure Number |
| Figure Name |
| Worksites and Monitoring locations in LBH (sheet 3) |
| London Borough of Hillingdon |



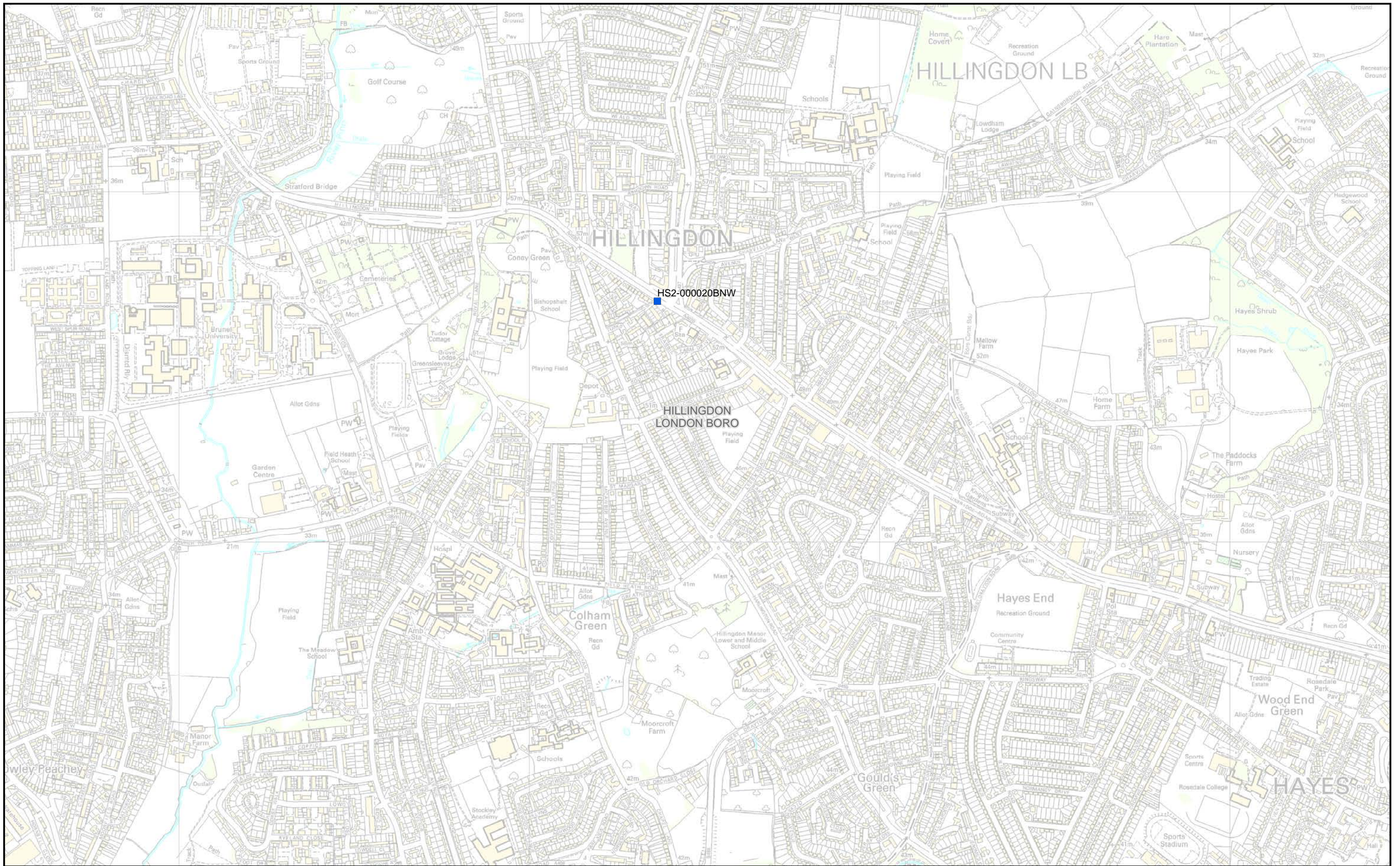
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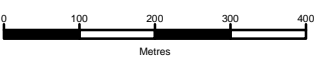
- Legend**
-  Route in tunnel
 -  Route on surface
 -  Diffusion tube monitoring location

| |
|---|
| Figure Number |
| Figure Name Worksites and Monitoring locations in LBH (sheet 4) |
| London Borough of Hillingdon |

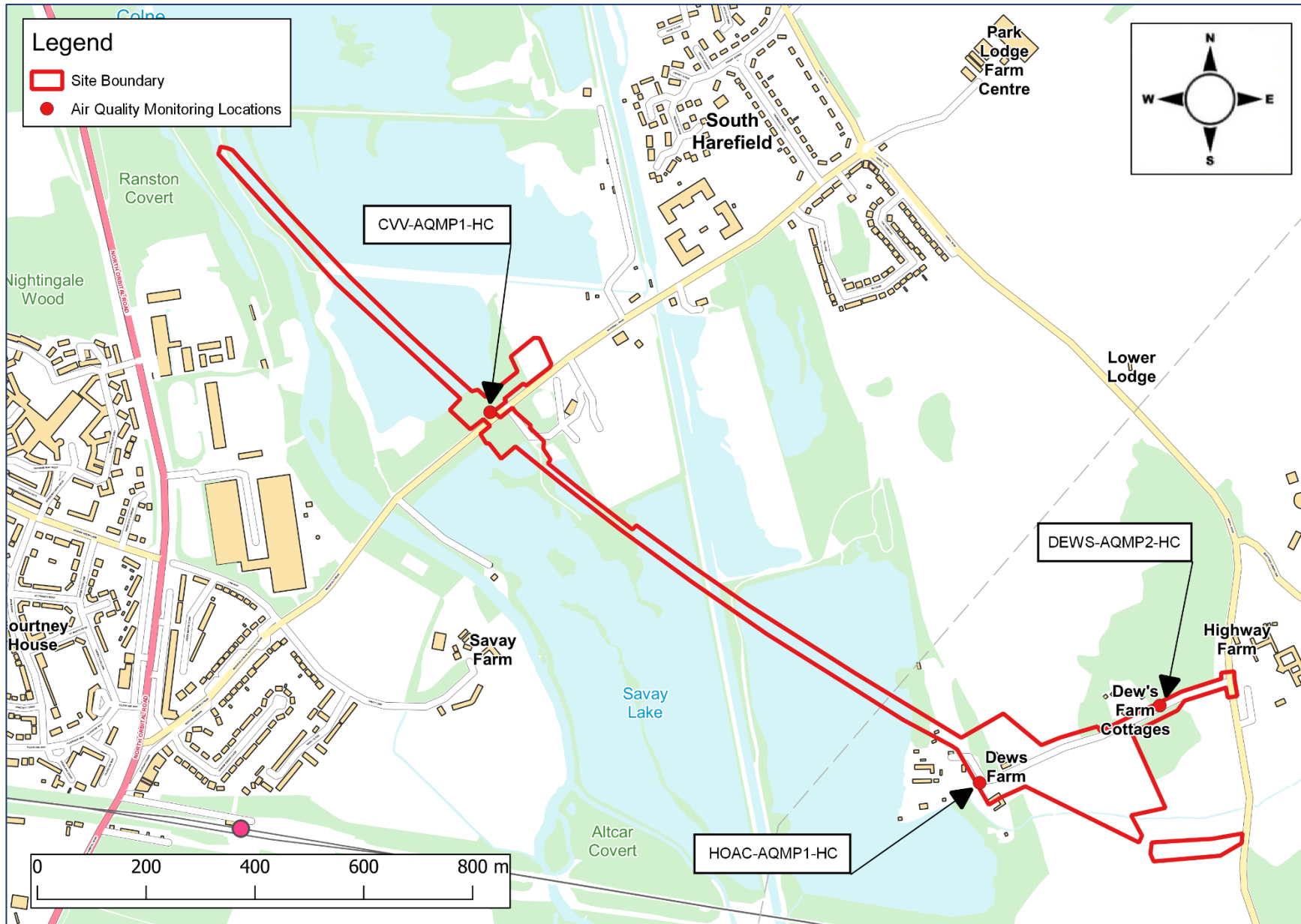

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Appendix B – Dust Monitoring Results

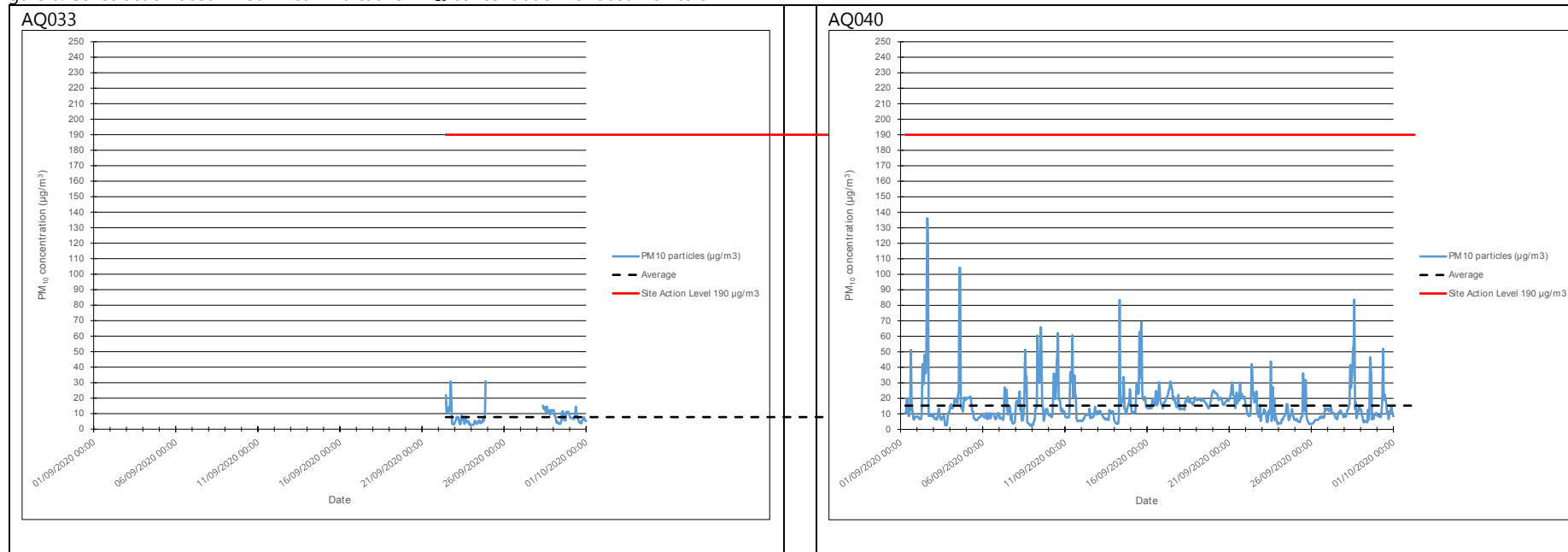
Table 1: Dust monitoring locations and September 2020 Results

| Monitoring site ID | Coordinates (X,Y) | Location description | Dust risk rating for site | Monitoring site active during period | Change to site since previous period report | Mean 1-hour PM ₁₀ concentration (µg/m ³) | Minimum 1-hour PM ₁₀ concentration (µg/m ³) | Maximum 1-hour PM ₁₀ concentration (µg/m ³) | Number of 1- hour periods exceeding trigger level of 190 µg/m ³ | Data capture (%) |
|--------------------|-------------------|---|---------------------------|--------------------------------------|---|---|--|--|--|------------------|
| AQ033 | 507045, 187352 | Breakspear Road South | M | Yes | N | 7.8 | 2.3 | 31.0 | 0 | 17.1 |
| AQ040 | 508328, 186880 | West Ruislip Golf Course | M | Yes | N | 15.3 | 2.2 | 135.7 | 0 | 99.2 |
| HOAC-AQMP1-HC | 505594, 187801 | On the western boundary of HOAC at Dews Lane | M | Yes | Yes | 14.7 | 2.8 | 105.0 | 0 | 100.0 |
| DEWS-AQMP2-HC | 505892, 187942 | Adjacent to Dew's Farm Cottages on Dews Lane | M | Yes | Yes | 19.1 | 3.7 | 188.4 | 0 | 41.0 |
| CVV-AQMP1-HC | 504679, 188475 | On the roadworks boundary along north side of Moorhall Road | M | Yes | Yes | 22.3 | 3.6 | 258.2 | 3 | 44.2 |

Table 2: Summary of exceedances of trigger level in September 2020

| Period exceeding trigger level | Worksite | Monitoring site ID | Complaint reference number (if applicable) | Reason | Resolution |
|---------------------------------------|----------------------------------|---------------------------|---|--|---|
| 18/09/2020 10:01 – 10:00 | CVV South Moorhall Road worksite | CVV-AQMP1-HC | n/a | On investigation, it was determined that the trigger alerts were not linked to Align JV works. | N/A |
| 21/09/2020 07:01 – 09:00 (x2) | CVV South Moorhall Road worksite | CVV-AQMP1-HC | n/a | Exceedances were caused by exhaust fumes from a generator located directly in front of the dust monitor. | The monitor and site set up were amended in order that the monitored concentrations accurately represent the works. |

Figure 6: 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 2020 (µg/m³)

| Monitoring Site ID | Location description | Coordinates (X, Y) | Jan | Feb | Mar ¹ | Apr ¹ | May ¹ | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean ² |
|--------------------|---|--------------------|-----|-----|------------------|------------------|------------------|-----|-----|--------------|-----|-----|-----|-----|-------------------|
| HS2-000020BNT | Lamp post on Pembroke Road | 509678, 187214 | 35 | 26 | No data | | | 19 | 14 | 18 | | | | | 23 |
| HS2-000020BNU | Cowley Road sign post at junction with Hillingdon Road | 505492, 183926 | 49 | 46 | No data | | | 33 | 31 | 33 | | | | | 38 |
| HS2-000020BNV | High Street sign post at junction with Pembroke Road | 509439, 187117 | 45 | 33 | No data | | | 32 | 26 | 30 | | | | | 33 |
| HS2-000020BNW | Signpost on A4020 Uxbridge Road at junction with Long Lane | 507365, 182687 | 43 | 32 | No data | | | 35 | 22 | 36 | | | | | 34 |
| HS2-000020BPK | Lamp post in crescent off Swakeleys Road | 506542, 186037 | 40 | 34 | No data | | | 27 | 28 | 29 | | | | | 31 |
| HS2-000020BPL | Warren Road sign post on corner of Swakeleys Road and Warren Road | 506240, 185660 | 51 | 40 | No data | | | 28 | 28 | 30 | | | | | 35 |
| HS2-000020BPN | Lamp post on B467 | 506767, 186224 | 41 | 30 | No data | | | 24 | 21 | Tube missing | | | | | 29 |
| HS2-000020BQH | Lamp post on High Road Ickenham | 508451, 186879 | 44 | 37 | No data | | | 27 | 24 | 29 | | | | | 32 |

¹ Note: Due to the Covid-19 pandemic and government lockdown it was not possible to conduct diffusion tube air quality monitoring in March, April and May 2020.

² Note: to aid interpretation and conform with best practice, the monthly measurements in this table are reported rounded to the nearest whole number. The annual mean presented here is calculated based on laboratory data to 4 significant figures, rounded to a whole number, and therefore may differ slightly to a mean derived from averaging the rounded monthly measurements in the table.

| Monitoring Site ID | Location description | Coordinates (X, Y) | Jan | Feb | Mar ¹ | Apr ¹ | May ¹ | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean ² |
|--------------------|--|--------------------|-----|-----|------------------|------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-------------------|
| HS2-000020BQN | Lamp post on Park Road | 506176, 185444 | 47 | 34 | No data | | | 34 | 26 | 35 | | | | | 35 |
| HS2-000020BQP | Sign post on Long Lane | 507614, 184663 | 45 | 33 | No data | | | 30 | 24 | 34 | | | | | 33 |
| HS2-000020BP8 | Triplicate site at South Ruislip roadside automatic monitoring station | 510858, 184916 | 39 | 32 | No data | | | 29 | 22 | 28 | | | | | 30 |