May 2023

# HS2

Air Quality and Dust Monitoring Monthly Report - May 2023 Buckinghamshire Council

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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 dust monitoring undertaken in the Buckinghamshire Council (BC) during May 2023.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for May 2023.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from <a href="www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2">www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2</a>, 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 worksites, as presented in Appendix A, Figures 1-7, include:

#### **CVV LTP1 worksite**

- North Embankment Compound: compound operation;
- DWSC Compound: compound operation;
- Haul Road and Jetty Maintenance River Colne to GUC: operation and maintenance;
- Ground Investigation Works: GI works;
- Pier Construction: arch form deck FRC works for pile cap and pier, standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- ATFS: site preparation, bulk earthworks fill, permanent drainage;
- Pumping water management;
- Satellite welfare;
- · Generator farms;
- Core Drilling of Concrete;
- Pile Trimming;
- A412 Gas Crossing Emergency Dismantling;
- Fencing;
- Environmental Maintenance;
- Cofferdam Excavation: cofferdam excavation, dewatering, waling beams and concrete plugs;
- River Colne Crossing: Emergency removal of obstruction to RC Crossing;
- Launching Girder and Deck Works: Span segmental erection with launching gantry, shoring steel structure erection and dismantling, internal post-tensioning (PT) and grouting and external PT;
- Deck Finishes Logistics: preparation and operation of storage yards and installation of below deck access provision, traffic management on the deck surface, installation of parapets, noise barriers, troughs, pipes, steel works and other minor material to the

storage yards and deck, installation of accesses top of the deck (HAKI stairs) and foundation works in the north embankment, deck finishes support plan;

- Deck Finishes On-deck Construction: construction of robust kerbs, installation of parapets, construction of concrete stitch and filling of voids and top openings;
- Deck Finishes In-deck Construction: diaphragm walls and concrete works within the deck, drainage works within the deck and steel works within the deck; and
- Landscaping: advanced Works including removal of cofferdams, early earthworks including ground profiling and cut, Initial ground drainage including manhole chamber and early soil (subsoil and topsoil) placement.

#### **Chalfont St Peter Vent Shaft**

- General Site Activities;
- Road Maintenance Works;
- Connection to Tunnels: concrete floors; and
- Basement Construction: headhouse concrete works.

#### **Amersham Vent Shaft**

- General Site Activities:
- Internal Structure: concrete walls and floors;
- Tunnel Connections; and
- Basement Construction: headhouse basement internals and demolition of D-wall.

#### **Chalfont St Giles Vent Shaft**

- General Site Activities;
- Road Maintenance Works;
- Connections to Tunnels: concrete floors; and
- Basement Construction: excavate to formations and basement internals & headhouse concrete works;

#### Little Missenden Vent Shaft

- General site activity;
- Internal Structures; remaining walls and slabs; and
- Small basement construction; headhouse basement internals.

#### **Chesham Road Vent Shaft**

- General site activity: general compound;
- Internal Structure: walls, slabs and staircases, and
- Ground Level Works: headhouse ATS concrete works.

#### **North Portal work site**

- Access Road: drainage and services, scrape formation, hardstanding and kerbing, asphalt and signage;
- Piling Platform Area 1: traffic management and temporary access from Firth Hill Road;
- North Portal Compound: general plant;
- North Portal Road: general plant;
- North-Portal Tracks Platform: scraping / hardstanding / surfacing / services / drainage;
- Piling Platform Removal: dismantling related to areas D., D.2 piling platforms;
- Headwall Capping-Beam and Excavation: excavation / RC works/ temporary propping;
- Portal Drainage: excavation / drainage installation / backfilling; and
- Porous Portal Structure: RC works and concrete pours.

#### **North Chilterns Area**

#### South Heath:

• No works were carried out in this area.

#### Potters Row:

- New compound installation;
- Stockpile movement.

#### **Hunts Green:**

• No works carried out for this period.

#### **Grimms Ditch:**

No works carried out for this period.

#### Chesham Lane:

• Stockpile Movement.

#### Wendover Bus 55:

• Stockpile Movement.

#### **Ellesborough Road:**

- Steel fixing, shuttering and pouring to the Ellesborough Road Bridge Western Ballast wall;
- Drainage installation and embankment construction to the Ellesborough Road diversion;

- Kerbing at Ellesborough Road; and
- Pour of bases and Installation of L walls at the Ellesborough Road Diversion.

#### Nash Lee Road:

- Site Maintenance;
- Mass Haul for SMSE further North;
- Excavation and Replace earthworks at Risborough Road and Risborough Bridge.

#### Nash Lee Lane:

• Tie-in works for the new diversion, grass cutting, fencing and signage, lining.

#### **Bacombe Lane:**

- Construction of Bacombe Lane Temporary offline road;
- Plant Crossing Topsoil strip

#### **Small Dean Viaduct:**

- Ground investigation works;
- De stumping and enablement works for utility diversion;
- Excavation, and pipe install for the utility diversion;
- Grouting and piling;
- Security area access improvement and Bus stop extension;
- Site resident hoarding;
- Surface water management; and
- Platform and haul road building.

#### Wendover Town:

- Pour of concrete wall in the batching plant;
- Stripping of Topsoil/subsoil for the Wendover Green Tunnel Construction of Slurry Wall welding area; and
- Cable jointing and pulling.

#### **Grove Farm:**

- Temporary Surface Water management;
- V-Ditch works; and
- Installation of Boreholes.

#### **Calvert Area**

#### **Station Road:**

Vegetation clearance works along Station Road.

#### Woodlands Farm:

- River Ray Culvert construction of headwalls and waterproofing
- Adams Accommodation Underbridge no works
- Woodlands Culvert waterproofing and technical backfill
- Mass haulage of aggregate
- Edgcott Road Overbridge no works

#### FCC / School Hill:

- Secant Retaining Wall works paused
- Mass haulage of aggregate
- Shepherds Furze Culvert dig and replace (D&R) under structure and installation of precast concrete units.
- School Hill Batching Plant production of concrete

#### Other works:

- EWR Culvert
- Charndon Lodge Pumping Station
- Charndon Lodge Underbridge
- East West Rail Overbridge
- IMD West Culvert
- IMD East Culvert
- Addison Road Overbridge
- Addison Road permanent highway diversion
- SCL/08 Overbridge
- West Street utility diversions
- SGN pipeline diversion
- Gawcott Road temporary highway diversion
- Perry Hill Overbridge
- Portway Culvert
- OXD / EWR Line Earthworks
- Calvert Cutting Earthworks
- IMD Earthworks
- Sheephouse Wood North Culvert
- Megaditch sheet piling (for CAG2 and Greatmoor No. 4 culvert excavation)
- Greatmoor No. 3 culvert
- GUN28 Overbridge

- Doddershall No. 6 culvert
- Doddershall No. 7 culvert

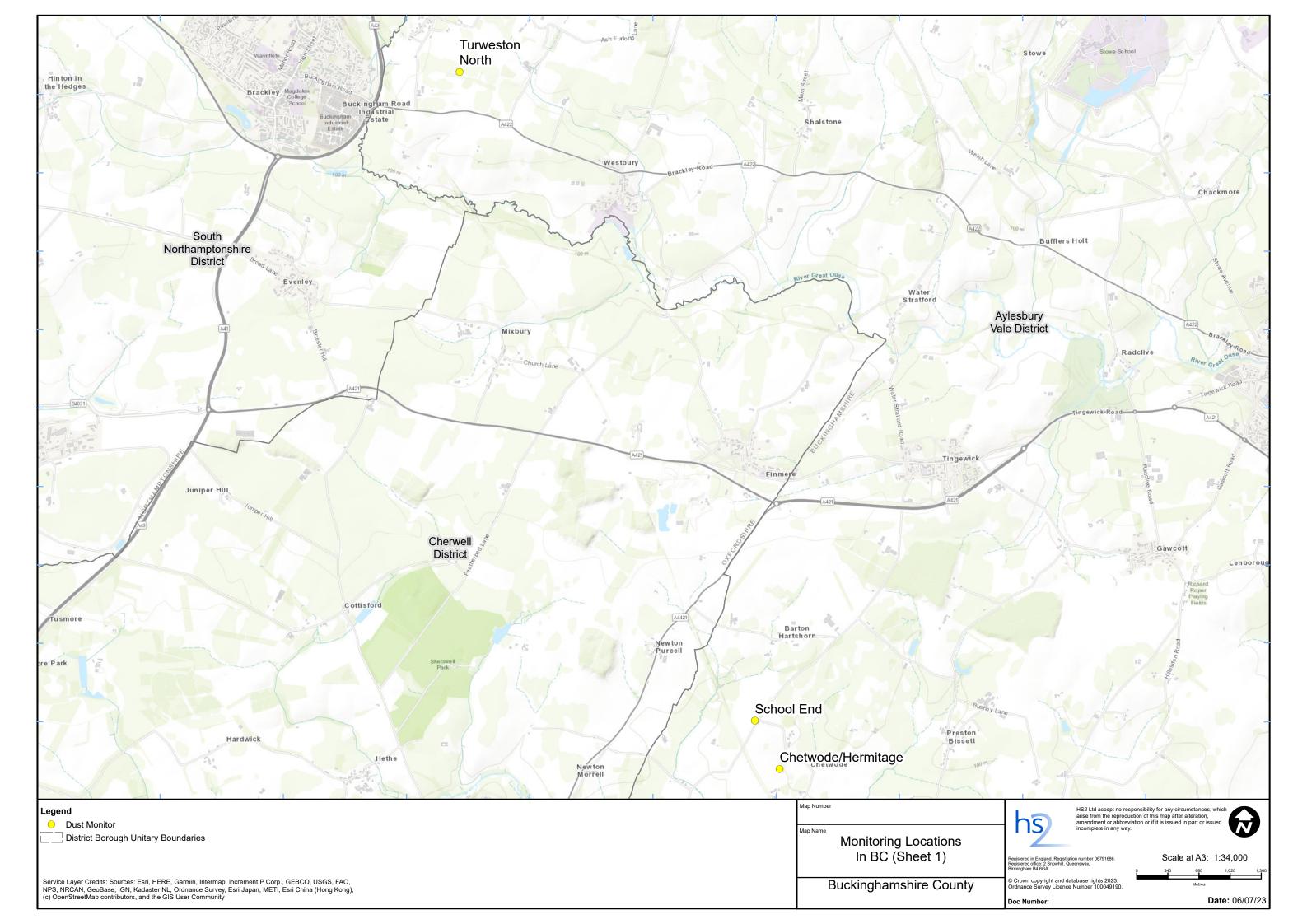
#### **Twyford to Greatworth**

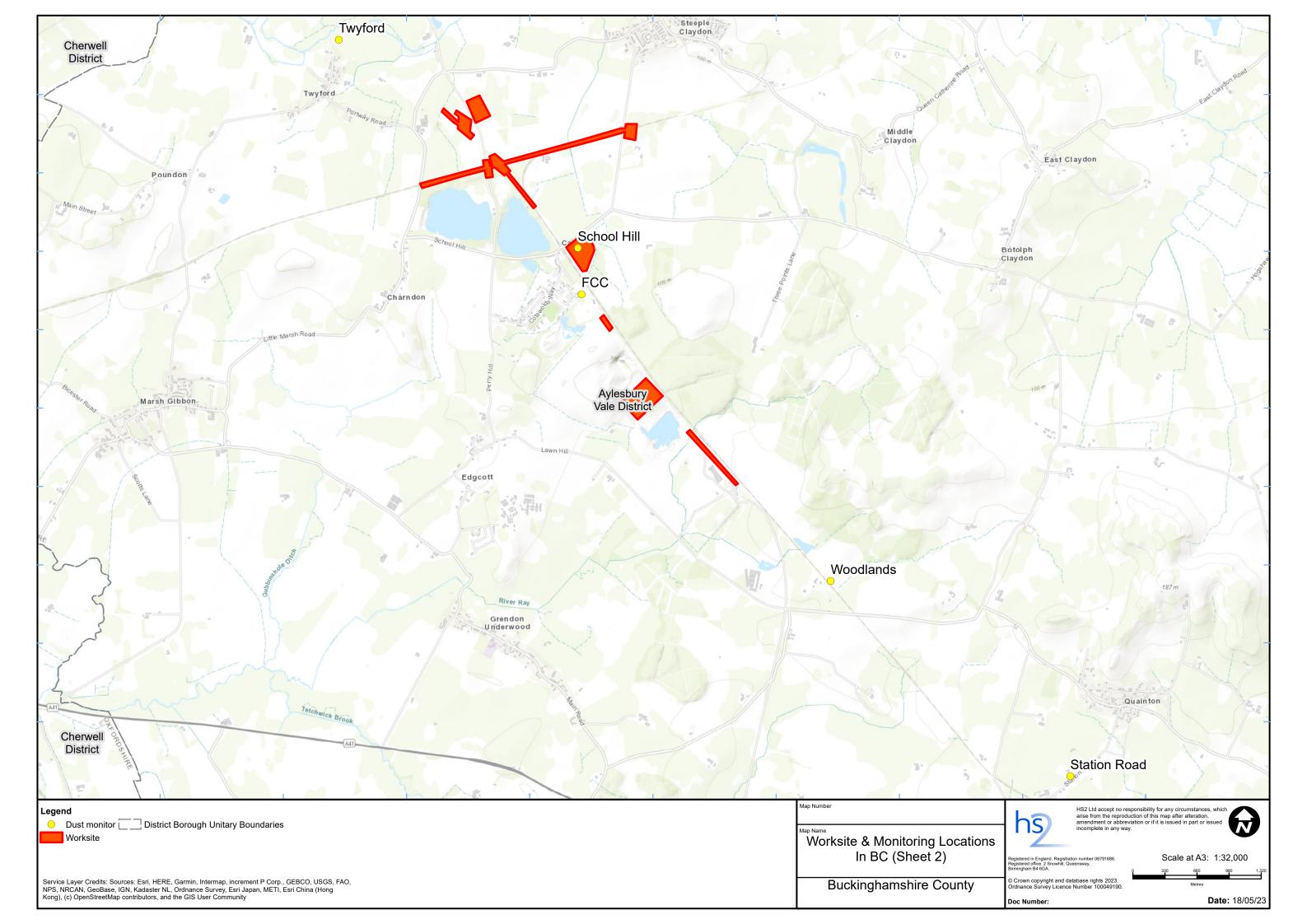
#### Turweston North:

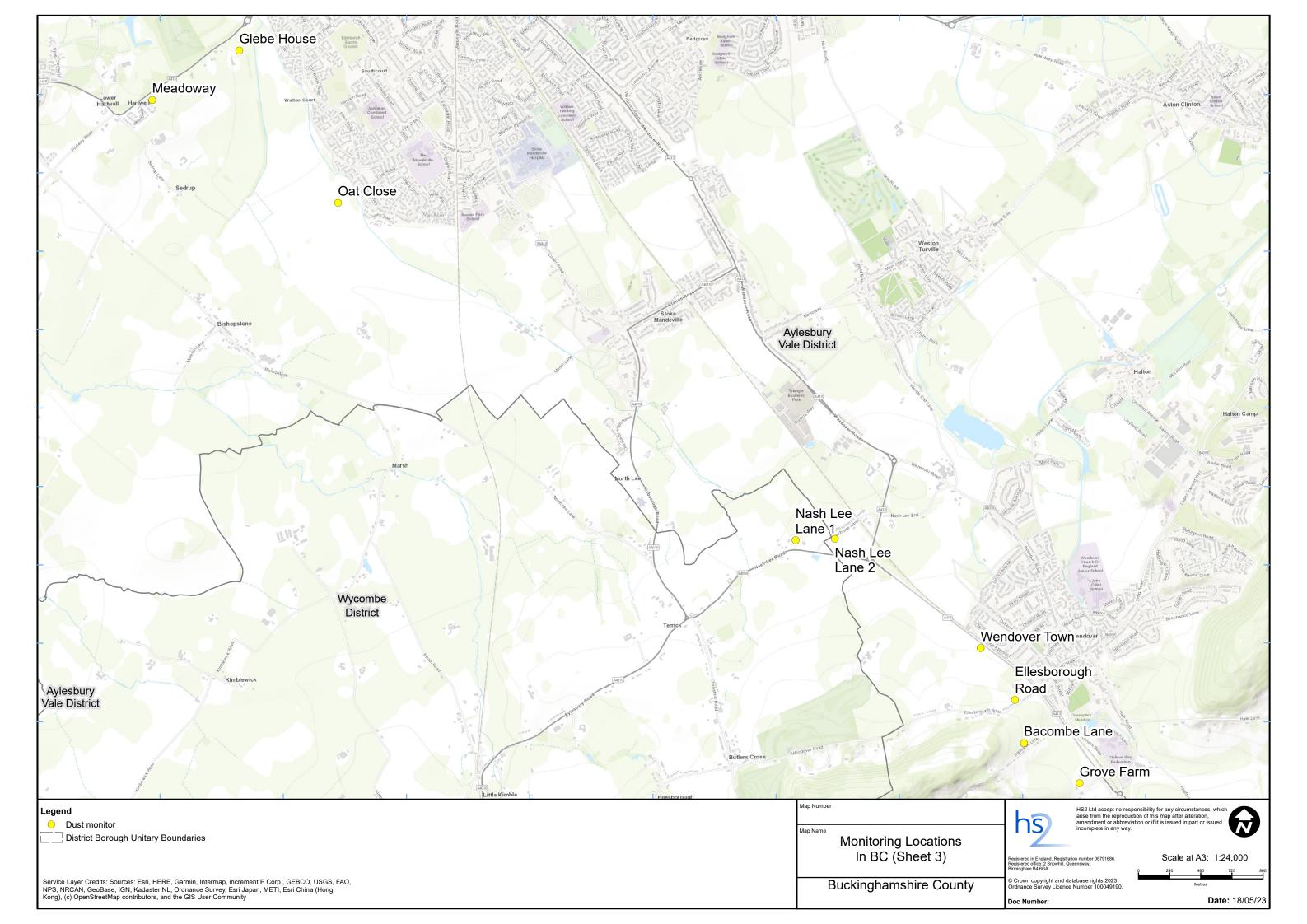
- Slab protection
- Steel Fixing
- Road Diversion
- Haul Road Maintenance
- 1A1 deliveries
- 1.1.5 Thirty-seven (37) dust monitors are installed around the worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for May 2023 are presented in Appendix B, Table 1, together with a line chart of monthly data from each dust monitor presented in Figure 8. All continuous dust monitoring is undertaken using indicative monitors. Despite being Environment Agency (MCERTS) certified, indicative monitors carry a higher level of uncertainty than reference monitors, and therefore cannot be strictly compared with Air Quality Standards for human health and the environment. The purpose of the monitoring undertaken is to ensure the effectiveness of the on-site mitigation.
- 1.1.7 The trigger level for  $PM_{10}$  concentrations of 190  $\mu$ g/m³, measured as a 1-hour mean, in accordance with the updated guidance document 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (December 2018)' has been applied.
- 1.1.8 Data capture was below 90% for multiple monitors due to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using solar/wind power. No data was recorded for South Heath, Station Road, Glebe House and Hunts Green for the month of May 2023, due to the monitors being retrieved from site. Low data capture for Grimms Ditch, FCC, Chetwode Hermitage, Meadoway and School End were due to the monitors being reinstalled.
- 1.1.9 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.
- 1.1.10 No (0) complaints were received during the monitoring period (May 2023).

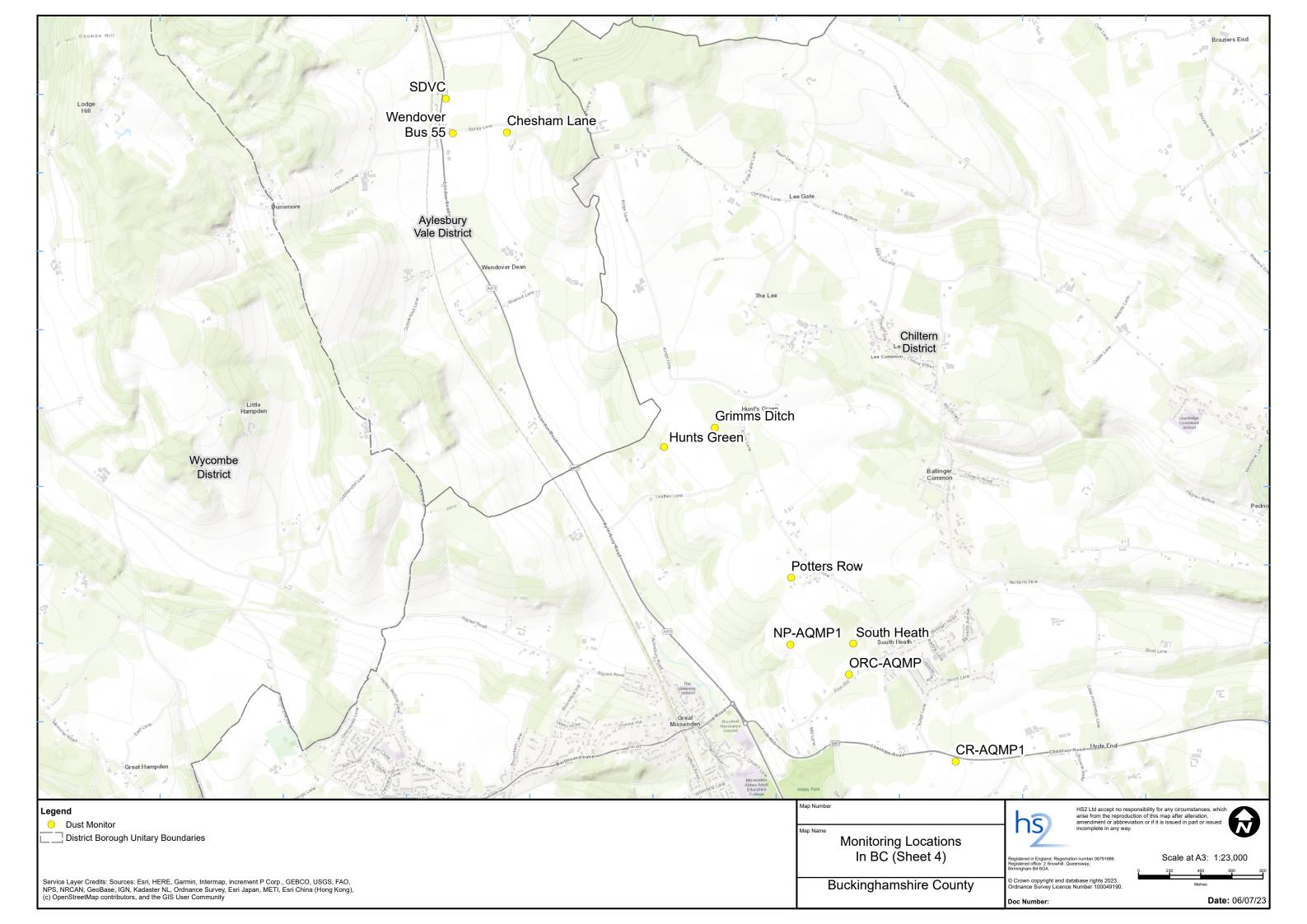
## **Appendix A - Worksite and Dust Monitoring Locations**

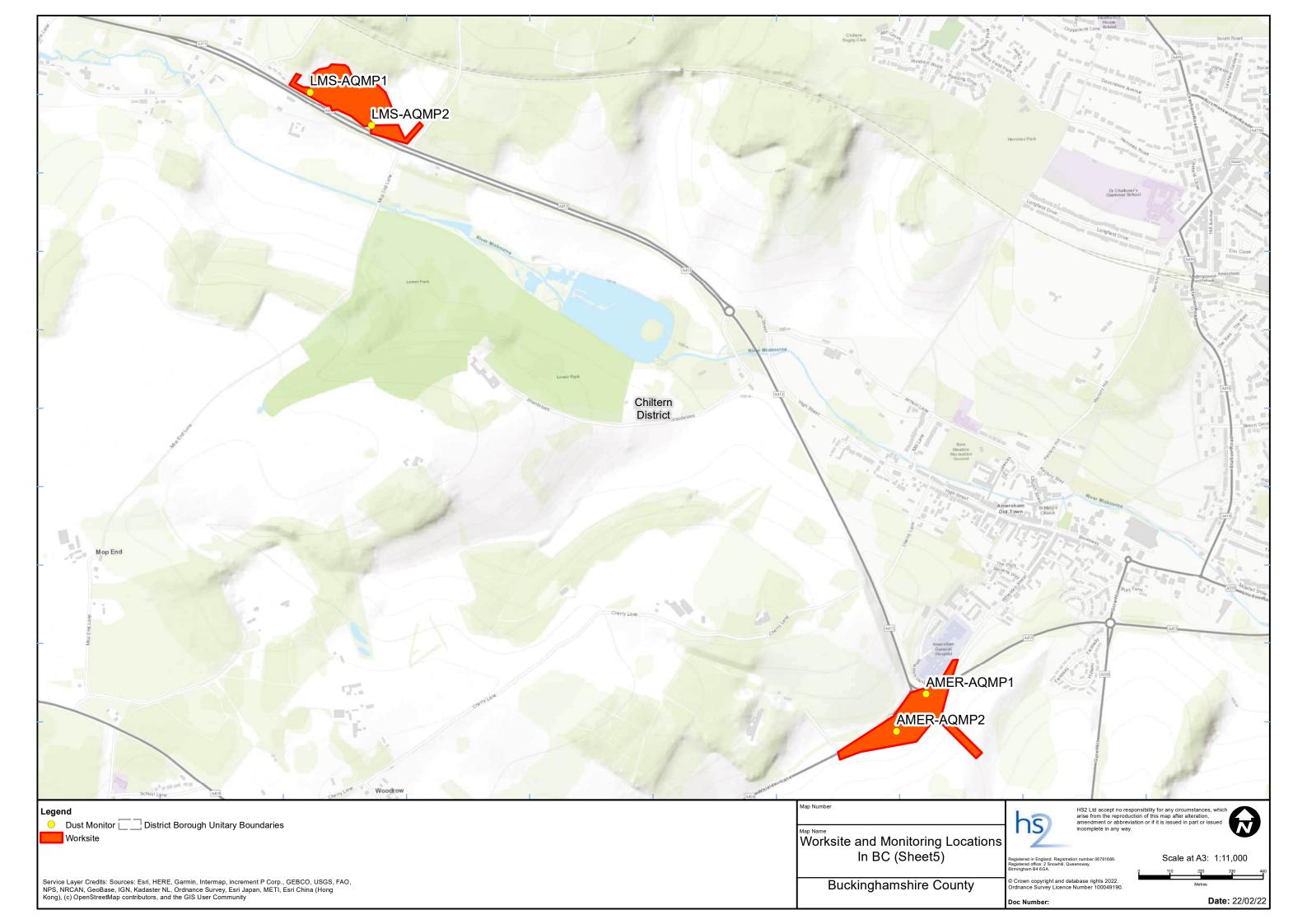
Figures 1-7: Worksite and Monitoring locations within BC

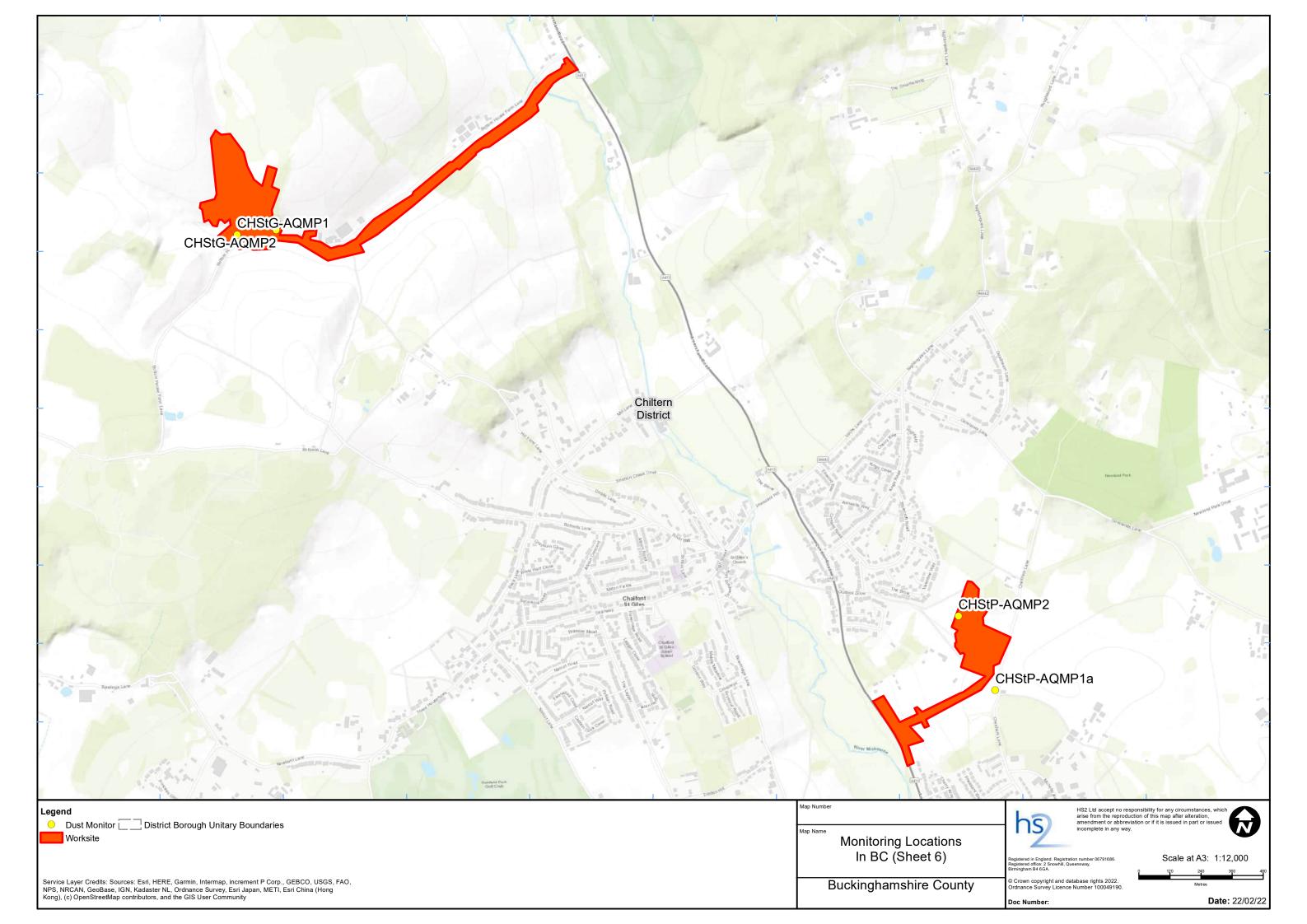


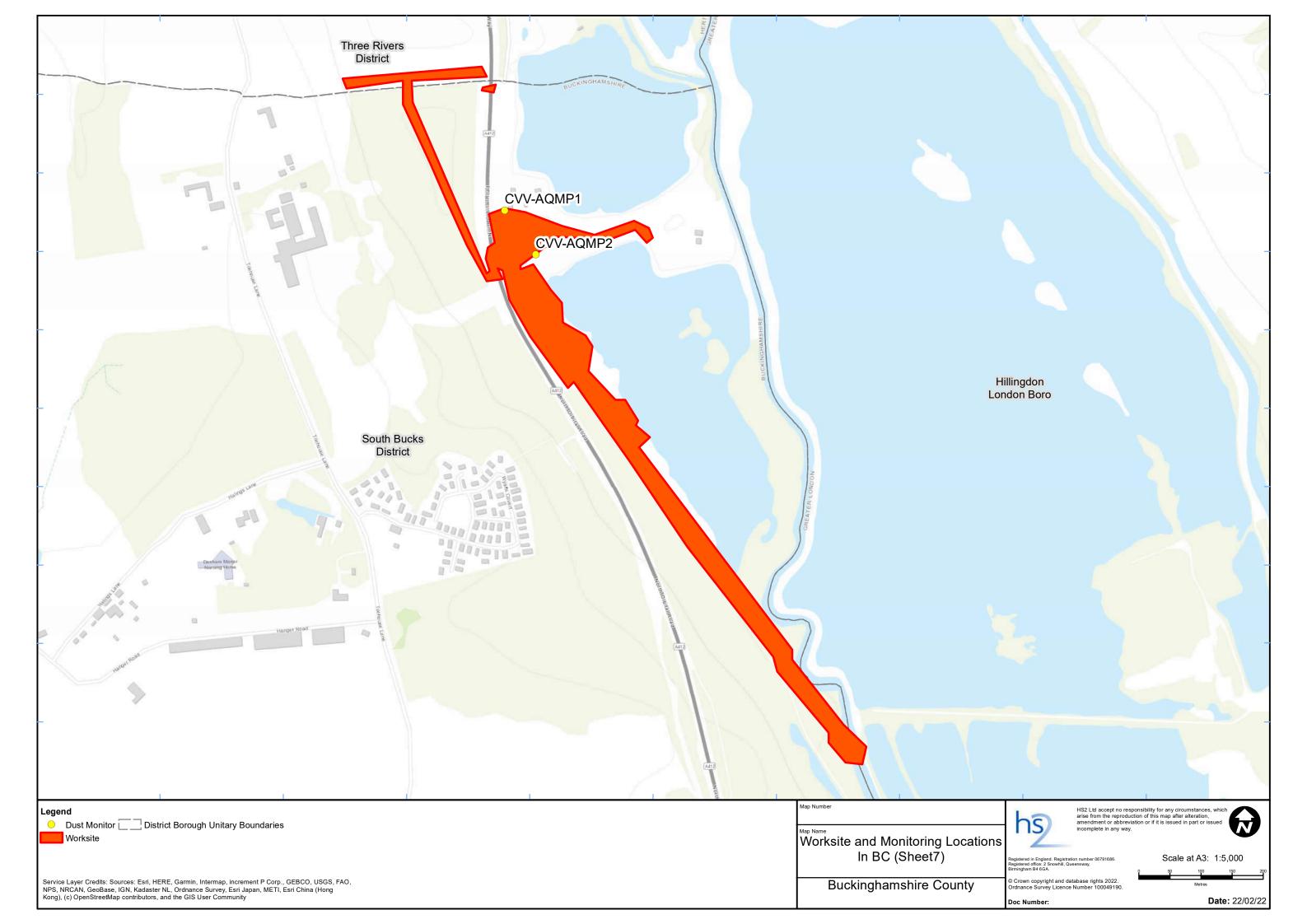












## **Appendix B - Dust Monitoring Results**

Table 1: Dust monitoring locations and May 2023 Results

| Monitoring site ID | Coordinates<br>(X,Y) | Location<br>description   | Dust<br>risk<br>rating<br>for site | Monitoring<br>site active<br>during<br>period | Change<br>to site<br>since<br>previous<br>period<br>report | Mean<br>1-hour PM <sub>10</sub><br>concentration<br>(μg/m³) | Minimum<br>1-hour PM <sub>10</sub><br>concentration<br>(µg/m³) | Maximum<br>1-hour PM <sub>10</sub><br>concentration<br>(μg/m³) | Number of<br>1-hour periods<br>exceeding<br>trigger level of<br>190 µg/m³ | Data capture<br>(%) |
|--------------------|----------------------|---|------------------------------------|---|--|---|--|--|---|---------------------|
| CVV-AQMP1          | 503612,<br>189846    | On the north<br>boundary of LTP1                                      | М                                  | Yes   | Yes  | 7.5   | 1.0  | 46.0   | 0   | 100.0               |
| CVV-AQMP2          | 503662,<br>189775    | On the south boundary of LTP1   | М                                  | Yes   | Yes  | 7.8   | 1.0  | 30.0   | 0   | 100.0               |
| CHStP-AQMP1a       | 500093,<br>192996    | Relocated from<br>CHStP-NMP1 to<br>site-boundary<br>outside residence | М                                  | Yes   | Yes  | 8.0   | 1.0  | 51.0   | 0   | 100.0               |
| CHStP-AQMP2        | 499951,<br>193282    | On the western boundary of the site                                   | М                                  | Yes   | Yes  | 7.5   | 1.0  | 42.0   | 0   | 100.0               |
| AMER-AQMP1         | 495367,<br>196722    | On the north-<br>eastern boundary<br>of Amersham                      | М                                  | Yes   | Yes  | 7.6   | 1.0  | 28.0   | 0   | 98.7                |
| AMER-AQMP2         | 495263,<br>196590    | On the south-<br>western boundary<br>of Amersham                      | М                                  | Yes   | Yes  | 7.6   | 1.0  | 27.0   | 0   | 98.7                |
| CHStG-AQMP1        | 497170,<br>194752    | On the southern boundary close to Hobbs Hole Cottage                  | М                                  | Yes   | Yes  | 7.3   | 1.0  | 28.0   | 0   | 99.3                |
| CHStG-AQMP2        | 497320,<br>194770    | On southern<br>boundary next to<br>carpark                            | М                                  | Yes   | Yes  | 7.2   | 1.0  | 29.0   | 0   | 99.9                |
| LMS-AQMP1          | 493190,<br>198848    | On the south-west of the site   | М                                  | Yes   | Yes  | 7.3   | 1.0  | 25.0   | 0   | 88.8                |
| LMS-AQMP2          | 493407,<br>198731    | On the south-east of the site   | М                                  | Yes   | Yes  | 7.5   | 1.0  | 27.0   | 0   | 100.0               |

| Monitoring site ID                 | Coordinates<br>(X,Y) | Location<br>description                           | Dust<br>risk<br>rating<br>for site | Monitoring<br>site active<br>during<br>period | Change<br>to site<br>since<br>previous<br>period<br>report | Mean<br>1-hour PM₁₀<br>concentration<br>(μg/m³) | Minimum<br>1-hour PM <sub>10</sub><br>concentration<br>(μg/m³) | Maximum<br>1-hour PM <sub>10</sub><br>concentration<br>(μg/m³) | Number of<br>1-hour periods<br>exceeding<br>trigger level of<br>190 µg/m³ | Data capture<br>(%) |
|------------------------------------|----------------------|---|------------------------------------|---|--|---|--|--|---|---------------------|
| CR-AQMP1                           | 491291,<br>201143    | On the Chesham<br>Road Vent Shaft                 | М                                  | Yes   | Yes  | 7.4   | 1.0  | 30.0   | 0   | 100.0               |
| ORC-AQMP                           | 490503,<br>201786    | Orchard Cottage<br>South-eastern Site<br>Boundary | М                                  | Yes   | Yes  | 7.4   | 1.0  | 24.0   | 0   | 100.0               |
| NP-AQMP1                           | 490069,<br>202008    | North Portal Site<br>Entrance                     | М                                  | Yes   | Yes  | 8.5   | 1.0  | 29.0   | 0   | 77.6                |
| School Hill (CAL-<br>AQMP2) - Dust | 469003,<br>224740    | School Hill<br>Compound                           | М                                  | Yes   | Yes  | 8.9   | 1.0  | 28.0   | 0   | 70.3                |
| School End – Dust                  | 463666,<br>230049    | School End,<br>Chetwode                           | М                                  | Yes   | Yes  | 9.9   | 4.0  | 34.0   | 0   | 12.8                |
| South Heath – Dust                 | 490534,<br>202014    | Bury Farm, South<br>Heath                         | М                                  | Yes   | Yes  | -   | -  | -  | -   | -                   |
| Potter Rows – Dust                 | 490075,<br>202502    | Potters Row, South<br>Heath                       | М                                  | Yes   | Yes  | 23.9  | 1.0  | 754.0  | 11  | 99.6                |
| Grimms Ditch – Dust                | 489135,<br>203468    | Leather Lane, The<br>Lee, South Heath             | М                                  | Yes   | Yes  | 8.2   | 1.0  | 21.0   | 0   | 24.2                |
| Hunts Green – Dust                 | 489511,<br>203611    | The Lee, South<br>Heath                           | М                                  | Yes   | Yes  | -   | -  | -  | -   | -                   |
| Chesham Lane - Dust                | 487974,<br>205794    | Chesham Lane, The<br>Lee, Wendover                | М                                  | Yes   | Yes  | 7.3   | 1.0  | 34.0   | 0   | 99.5                |
| Wendover Bus 55 -<br>Dust          | 487574,<br>205787    | Chesham Lane, The<br>Lee, Wendover                | М                                  | Yes   | Yes  | 7.7   | 1.0  | 38.0   | 0   | 99.5                |
| Meadoway – Dust                    | 479803,<br>212178    | Aylesbury,<br>Buckinghamshire                     | М                                  | Yes   | Yes  | 8.7   | 1.0  | 23.0   | 0   | 27.2                |
| Oat Close – Dust                   | 481237,<br>211384    | Oat Close,<br>Bishopstone,<br>Aylesbury           | М                                  | Yes   | Yes  | 7.5   | 1.0  | 39.0   | 0   | 72.7                |
| Twyford - Dust                     | 466544,<br>226883    | Twyford,<br>Buckinghamshire                       | М                                  | Yes   | Yes  | 7.7   | 1.0  | 27.0   | 0   | 99.7                |
| Chetwode/Hermitage – Dust          | 463936,<br>229521    | Hermitage,<br>Chetwode                            | М                                  | Yes   | Yes  | 8.5   | 1.0  | 30.0   | 0   | 46.1                |

| Monitoring site ID          | Coordinates<br>(X,Y) | Location<br>description                            | Dust<br>risk<br>rating<br>for site | Monitoring<br>site active<br>during<br>period | Change<br>to site<br>since<br>previous<br>period<br>report | Mean<br>1-hour PM₁₀<br>concentration<br>(μg/m³) | Minimum<br>1-hour PM₁0<br>concentration<br>(µg/m³) | Maximum<br>1-hour PM <sub>10</sub><br>concentration<br>(μg/m³) | Number of<br>1-hour periods<br>exceeding<br>trigger level of<br>190 µg/m³ | Data capture<br>(%) |
|-----------------------------|----------------------|--|------------------------------------|---|--|---|--|--|---|---------------------|
| Glebe House - Dust          | 480475,<br>212560    | A418 Aylesbury                                     | М                                  | Yes   | Yes  | -   | -  | -  | -   | -                   |
| Turweston North -<br>Dust   | 460439 ,<br>237140   | Turweston,<br>Buckinghamshire                      | М                                  | Yes   | Yes  | 7.2   | 1.0  | 24.0   | 0   | 86.3                |
| FCC - Dust                  | 469042 ,<br>224263   | Adjacent Red Kite<br>View, Calvert                 | М                                  | Yes   | Yes  | 9.7   | 1.0  | 25.0   | 0   | 43.3                |
| Ellesborough Road -<br>Dust | 486458 ,<br>207550   | Ellesborough Road,<br>Wendover                     | М                                  | Yes   | Yes  | 8.4   | 1.0  | 35.0   | 0   | 72.3                |
| Nash Lee Road - Dust        | 484766 ,<br>208782   | Nash Lee Lane<br>(west)                            | М                                  | Yes   | Yes  | 8.3   | 1.0  | 41.0   | 0   | 90.2                |
| Nash Lee Lane - Dust        | 485069 ,<br>208793   | Nash Lee Lane<br>(east)                            | М                                  | Yes   | Yes  | 7.7   | 1.0  | 37.0   | 0   | 99.5                |
| Bacombe Lane –<br>Dust      | 486528 ,<br>207217   | Bacombe Lane,<br>Wendover                          | М                                  | Yes   | Yes  | 7.3   | 1.0  | 42.0   | 0   | 99.5                |
| SDVC – Dust                 | 487522,<br>206043    | Small Dean<br>Viaduct, London<br>Road              | М                                  | Yes   | Yes  | 8.3   | 1.0  | 43.0   | 0   | 99.3                |
| Station Road – Dust         | 474068,<br>219307    | Station Road,<br>Quainton                          | М                                  | Yes   | Yes  | -   | -  | -  | -   | -                   |
| Wendover Town -<br>Dust     | 486193,<br>207950    | Wendover Bypass,<br>Wendover                       | М                                  | Yes   | Yes  | 8.6   | 1.0  | 20.0   | 0   | 45.4                |
| Woodlands - Dust            | 471603,<br>221315    | Station Rd,<br>Quainton,<br>Woodlands<br>Farmhouse | М                                  | Yes   | Yes  | 7.5   | 1.0  | 36.0   | 0   | 99.7                |
| Grove Farm                  | 486957,<br>206908    | Grove Farm,<br>London Road,<br>Wendover            | М                                  | Yes   | Yes  | 8.2   | 1.0  | 41.0   | 0   | 98.4                |

Table 2: Summary of exceedances during period (May 2023)

| Monitoring Site ID | Period of trigger alert & Concentration recorded (µg/m³) | Investigation   | Outcomes / Resolution / Remedial measures implemented                |  |  |  |
|--------------------|--|---|--|--|--|--|
| Potter Row – Dust  | 15 May 2023:   |   |  |  |  |  |
|                    | 10:00 – 10:59; 707 μg/m <sup>3</sup>                     |   | Investigation of Incident concluded not related to HS2 Works         |  |  |  |
|                    | 11:00 – 11:59; 336 μg/m <sup>3</sup>                     | Horace INC15656   |  |  |  |  |
|                    | 14:00 – 14:59; 302 μg/m³                                 |   |  |  |  |  |
|                    | 16:00 - 16:59; 325 μg/m <sup>3</sup>                     |   |  |  |  |  |
|                    | 16 May 2023:   | On a 65 and the at the | The readings afterwards were normal and delivery team confirms works |  |  |  |
|                    | 09:00 – 09:59; 232 μg/m <sup>3</sup>                     | One off spike at between about 10:40 and 10:46  | weren't going on around that area.                                   |  |  |  |
|                    | 16 May 2023:   | Out of Working House  | Out of Working Hours   |  |  |  |
|                    | 19:00 – 19:59; 383 μg/m <sup>3</sup>                     | Out of Working Hours  |  |  |  |  |
|                    | 25 May 2023:   | Llavage INC15005  | One off spiles Dust Compression in averaged significantly            |  |  |  |
|                    | 10:00 – 10:59; 461 μg/m <sup>3</sup>                     | Horace INC15895   | One off spike, Dust Suppression increased significantly              |  |  |  |
|                    | 25 May 2023:   |   |  |  |  |  |
|                    | 17:00 – 17:59 229 μg/m³                                  |   |  |  |  |  |
|                    | 19:00 – 19:59; 754 μg/m <sup>3</sup>                     | Out of Working Hours  | Out of Working Hours   |  |  |  |
|                    | 20:00 – 20:59; 225 μg/m <sup>3</sup>                     |   |  |  |  |  |
|                    | 22:00 – 22:59; 358 μg/m <sup>3</sup>                     |   |  |  |  |  |

Figure 8: Continuous dust 1-hour mean indicative PM<sub>10</sub> concentration for all dust monitors

