April 2024

HS2

Air Quality and Dust Monitoring Monthly Report - April 2024 **Buckinghamshire** Council

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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 April 2024.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the 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 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;
- Pier Construction: arch from deck for 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, soiling and seeding,
 ATFS access road construction;
- Pumping Water Management: pumping water management ch 25.900 to 29.500;
- Satellite Welfares;
- Generator Farms:
- South Abutment: earthworks, CFA piling, pile trimming and pile hat installation, FRC early works on SE and drainage works, South Abutment construction stage 2, South Abutment construction stage 2 earthworks, yard supporting activities, piling platform construction (Harvil Road) and load transfer platform construction (7-8), soiling and seeding works, embankment FRC works;
- Environmental Maintenance;
- Stockpiling Activity HOAC: stockpile of material coming from other sites;
- 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, external PT, internal PT stressing & grouting and crane assembly/disassembly;
- 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 access at the top of the deck (HAKI stairs) and finishes support plan;
- Deck Finishes On-deck Construction: construction of robust kerbs, installation of parapets, construction of concrete stitch, filling of voids and top openings, verge deck waterproofing, trough installation and noise barrier installation;
- Deck Finishes In-deck Construction: diaphragm walls, concrete works within the deck, drainage works within the deck and steel works within the deck;
- Landscaping: advanced works including removal of cofferdam, early earthworks including ground profiling and cut, initial ground drainage including manhole chamber, early soil placement, hardstanding removal and tree removal & vegetation clearance; RC Footbridge installation; and
- Jetty Removal and associated earthworks: Earthworks excavation, backfill, and landscaping, jetty removal, cutting piles and steelworks.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connection to Tunnels; and
- Building Trades: internal works including steel and zinc cladding.

Amersham Vent Shaft

- General Site Activities;
- Tunnel Connections;
- External Works Phase 1; and
- Headhouse Superstructure Concrete Works.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Steel works and zinc cladding;
- Road Maintenance Works; and
- Building Trades: brickworks and internal works.

Little Missenden Vent Shaft

- General site activity;
- Tunnel Connection;
- Headhouse Superstructure Concrete Works;
- Phase 1 of external works; and
- Both internal and external Building Trades.

Chesham Vent Shaft

- General site activity:
- Ground Level Works: headhouse ATS concrete works and external works;

- Building Trades: External works; and
- Zinc and Cladding Works.

North Portal work site

- General Plant: site support;
- Piling Platform Reinstatement: scraping/hardstanding/earthworks and dismantling piling platforms;
- TBM Arrival: TBM dismantling portal and compound works; and
- Batching Plant installation.

North Chilterns Area

Potters Row, Grimms Ditch

- Earthworks (movement of materials).
- Use of SAR.

Chesham Lane, Wendover Bus 55

- Earthworks excavate and replace for Rocky Lane Underbridge.
- Platform and access ramp installation.
- Pond Maintenance, Surface Water Management.

Ellesborough Road

- Installed temporary UKPN Overhead Diversion Duct at the Demolition Area.
- Mabey Removed sections of the Utilities Bridge.
- Stoned up and poured 8 out of 9 sections of the Utilities Protection Slab.
- Excavated and built up ramp towards the Utilities Protection Slab (Small Dene Lane Team).
- Clancy Replaced Substations at Ellesborough Road.
- ATM Installed Fencing at the Slurry Wall, Folly Bridge, and Ellesborough Road Areas.
- Fugro Erected Scaffold around the East Substation.

Nash Lee Road, Nash Lee Lane

- WNC: East Abutment Piling Platform Extension and West Abutment Piling platform
- SMSE: Nash Lee Orchard Culvert Inlet & Outlet Headwall Blinding
- SMSE: Nash Lee Orchard lifting installation of first 6 precast boxes and progress with internal external waterproofing
- SMSE: Mill House North Inlet and Outlet Mammal Shelf construction
- SMSE: Mill House North Inlet Headwall/Wingwall Construction
- SMSE: Stoke Brook Diversion 2B, still in progress as due to rainfall we put this on hold

Bacombe Lane

- Bacombe Lane Link Road.
- Digging out the road box

- Completing the bridleway
- Installation of gullies
- Cutting batters
- Topsoiling
- Installation of filter drain.

Grove Farm

Deliveries of 6F5 and Type 1.

Small Dean Viaduct

- P3 & P4
- Bauer Keller Demob
- Excavation for pile cap
- Pile cap pour
- Pier stem lift and install
- Pier cage lifting and install
- Hammerhead lift and install
- Hammerhead rebar lift and install
- Launch platform
- Lifting of the remaining beams
- Welding and associated set up install
- Excavation for retaining winch, rebar fix
- Stone platform building/ maintenance
- SDVL
- Bentonite platform demob (lifting and removal of silo)

Wendover Town

- Built Protection Structures around the I&M Boreholes.
- Tarmac- Carried out SAR Tarmacking.
- Commenced Water Pipe Installation works at Mogford's Farm.
- Stockpile Relocation and Tidy Up Works.
- Clancy Installed Thames Water Valve in Wendover, Dobbins Lane.
- Performed General Site Maintenance Relocated Signage, Constructed Bowser
 Discharge Area, Maintained Batching Plant, Excavated for V-Ditch, Carried out Tarmac Repair Works.

Calvert Area

Quainton

- Earthworks Ongoing
- Platform for storage Completed
- Carpark extension Ongoing

Woodlands

- Adams Accommodation underbridge construction of steel reinforcement cages for wingwalls.
- River Ray diversion temporary works.
- Aggregate deliveries along the SAR.

FCC / School Hill (Calvert)

- School Hill batching plant production of concrete.
- School Hill culvert waterproofing and technical backfill.
- School Hill overbridge dig and replace (D&R) under structure and piling platform completed. Piling ongoing.
- Calvert Green overbridge piling works and Production of bentonite.
- Aggregate deliveries along the site access road (SAR).
- Calvert Cutting earthworks drainage and general maintenance activities.

Other works ongoing in Calvert not within proximity (greater than 1km) to dust monitors include:

- West Street overbridge
- Portway culvert
- Perry Hill overbridge
- EWR culvert
- IMD West culvert
- IMD East Culvert
- Addison Road highway
- Shepherds Furze earthworks (stockpile maintenance)
- Shepherds Furze culvert
- MCJ4 chord earthworks
- Infrastructure maintenance depot (IMD) earthworks
- Secant retaining wall
- Bat mitigation structure
- SCL/13 overbridge
- FCC Cell 6 earthworks (stockpile maintenance)
- FCC Access Road Retaining Wall
- Sheephouse Wood North culvert
- Greatmoor no. 4 culvert and CAG2 underbridge
- Megaditch retaining wall
- Greatmoor no. 3 culvert
- GUN28 overbridge
- QUA36 overbridge
- Hills farm earthworks (stockpile maintenance)
- Edgcott Road overbridge
- QUA26 Underbridge
- Woods drop inlet culvert
- Doddershall Embankment earthworks

- Doddershall No. 6 and No. 7 Culvert
- Quainton cutting.

Twyford to Greatworth

Turweston North

- 1A1 fill to level for drainage works
- Drainage works
- Loading 1A1 to the south of T2G
- Bladon member trial pits
- Class 2 LP stockpile removal
- Borehole drilling
- CSSL Turweston cutting stabilisation
- Turweston Green Overbridge construction
- Turweston Viaduct construction
- Turweston cutting excavation
- Loading of class 9 material

Twyford

- Maintenance of SAR and MHR.
- Delivery of materials via SAR and MHR
- Excavate and replace of east leg of Cowley Embankment (1A1)
- Mobilisation of BKJV and start of PRD installation at Cowley Embankment
- Access development in preparation of Twyford Causeway bridge closure.
- Backfill of pond (PW0821)
- Twyford Embankment surcharge development.
- Removal of hedgerow at FCA-082
- Stockpile management
- Topsoil and subsoil strip of FCA-081. Backfill with topsoil.

School End

- RC Work: Steel Fixing and Shuttering (SE O/B)
- Steel Structure Lifting and Assembly (SE O/B)
- Maintenance of stockpiles
- Drainage and pond maintenance
- Use and maintenance of SAR and MHR
- Access and egress to plant laydown area
- Access and egress to SE O/B works area
- Delivery of materials across T2G South.

Hermitage

- Bulk excavation of Chetwode Cutting
- Maintentance of SAR and MHR
- Delivery of materials via SAR and MHR

- Diversion works near Manthorne Farm (ditch excavation and backfill).
- Traffic management (Utilities).

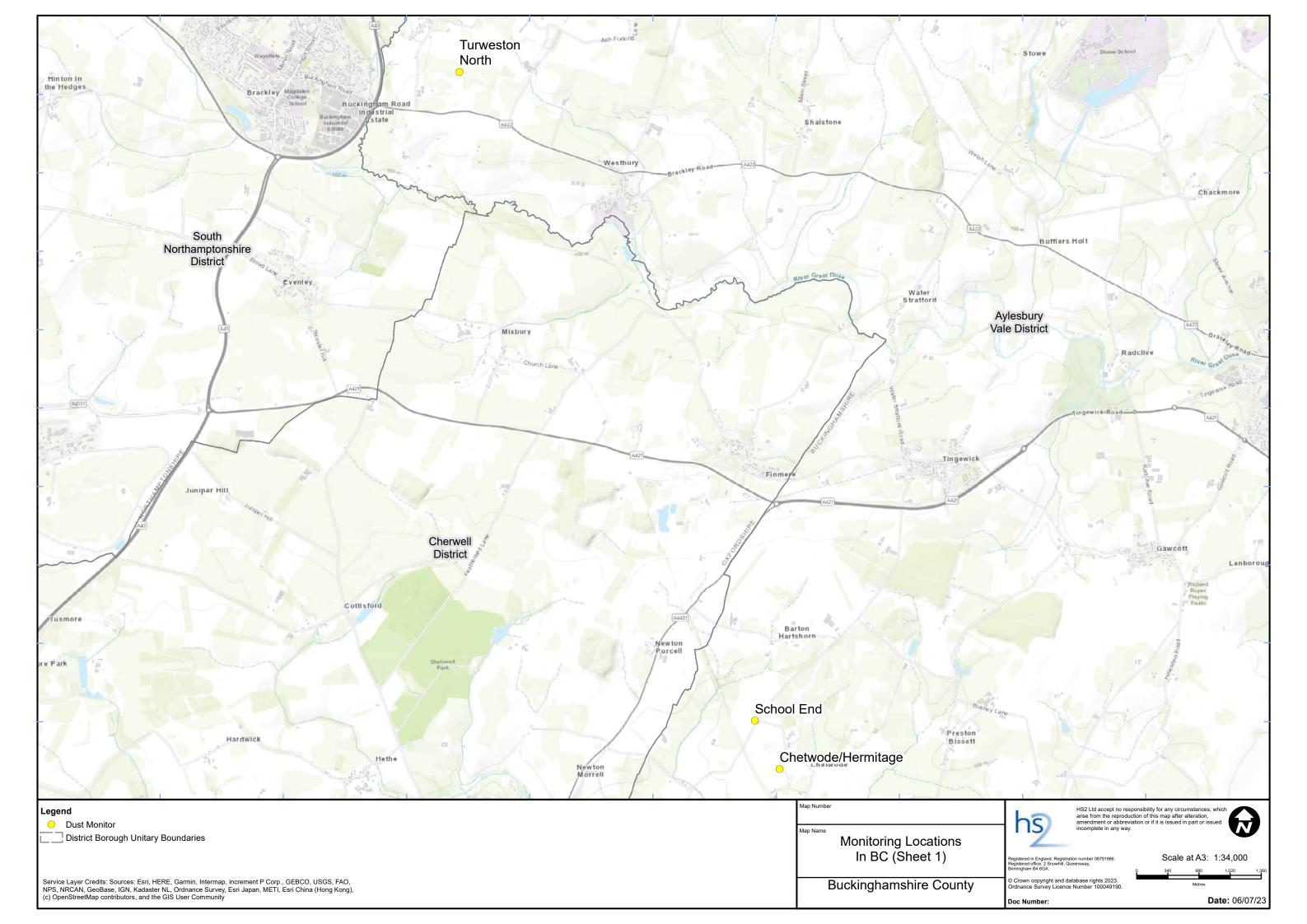
Aylesbury

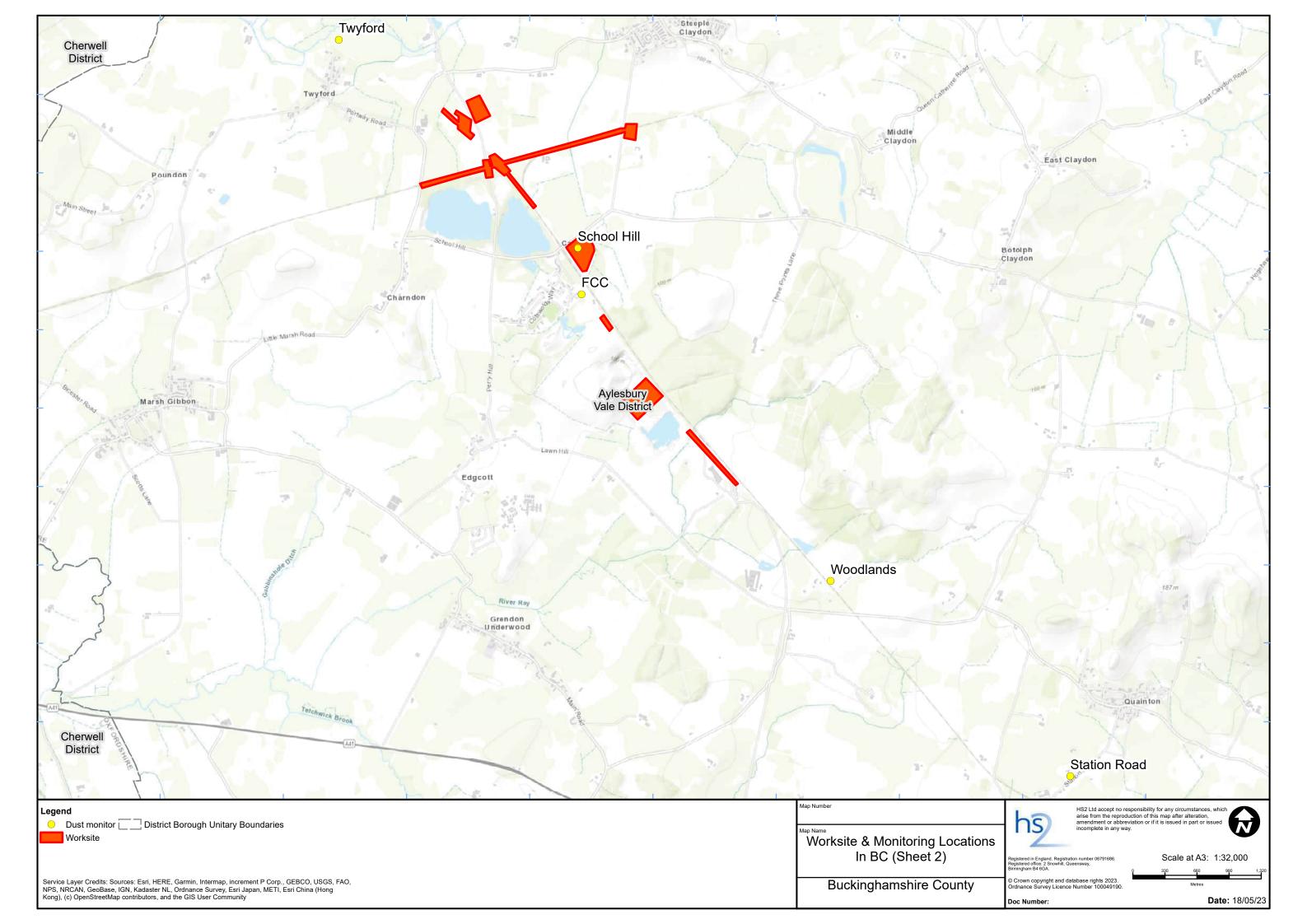
Glebe House

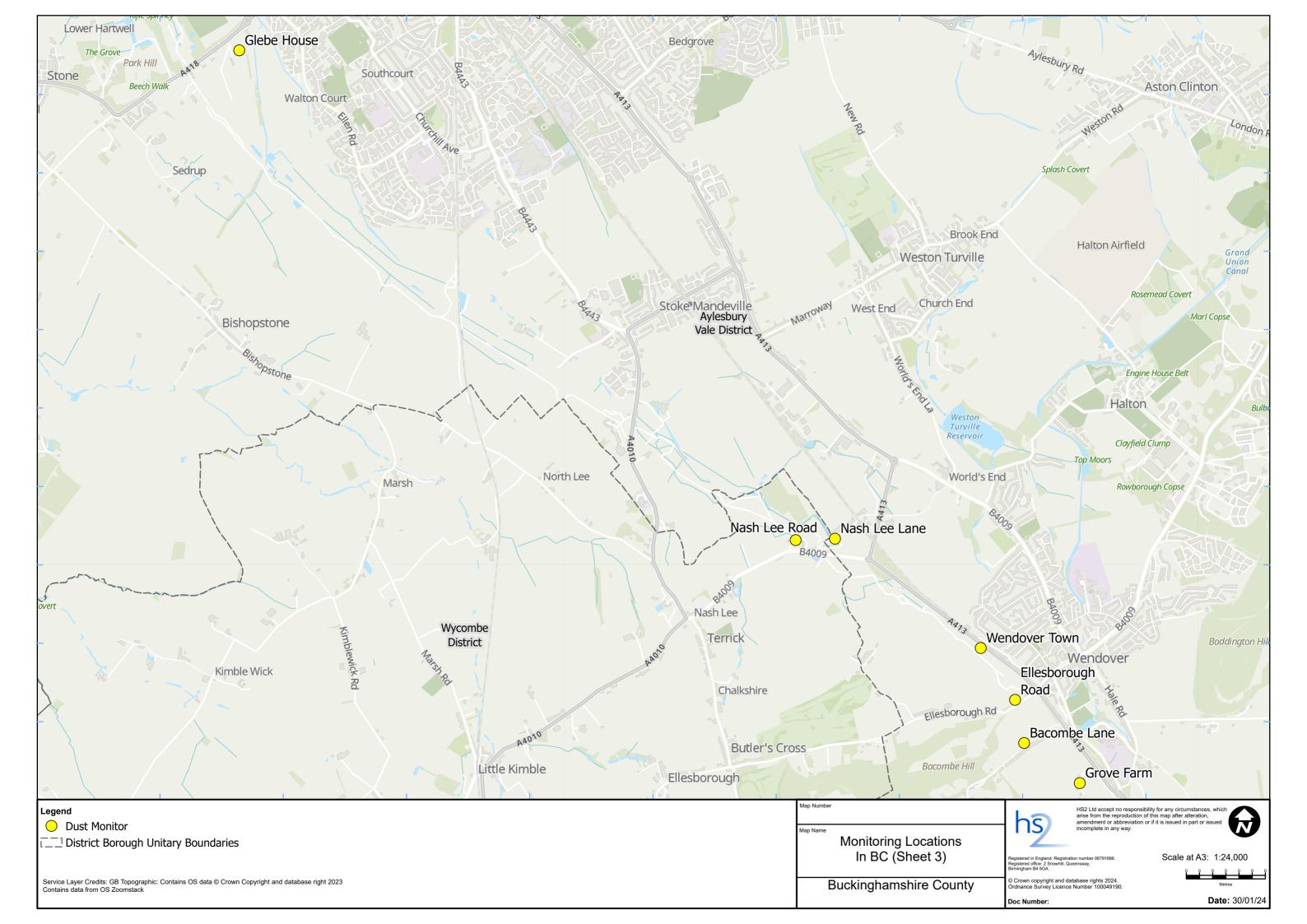
- Stoke Mandeville Bypass Overbridge
- Edge protection installation of deck level
- Backfilling and back of wall drainage
- Parapet Installation
- Aylesbury South Cutting excavation
- Aylesbury South Cutting stockpiling.
- 1.1.5 Thirty-two (32) dust monitors are installed around these worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results are presented in Appendix B, Table 1, together with line charts of monthly data from each dust monitor 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 μ 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 No (0) dust trigger alerts were recorded during the monitoring period (April 2024).
- 1.1.9 Data capture was below 90% for multiple monitors due to the Grimms Ditch monitor having an internal hardware fault. Ellesborough Road monitor had a communication issue. Nash Lee Road and Nash Lee Lane was due to a lack of solar charge and battery faults. No data was recorded for Twyford due to a SD card error. The monitor was retrieved for repair on 17th April. Turweston North was reinstalled on 9th April 2024. CHStG-AQMP1 suffered an unknown failure on Mar 28th, and this was investigated on site on the 2nd of April, with data returning from 3rd April. Any sporadic loss of data can be attributed to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using solar/wind power.
- 1.1.10 There were no (0) complaints received during the reporting period (April 2024).

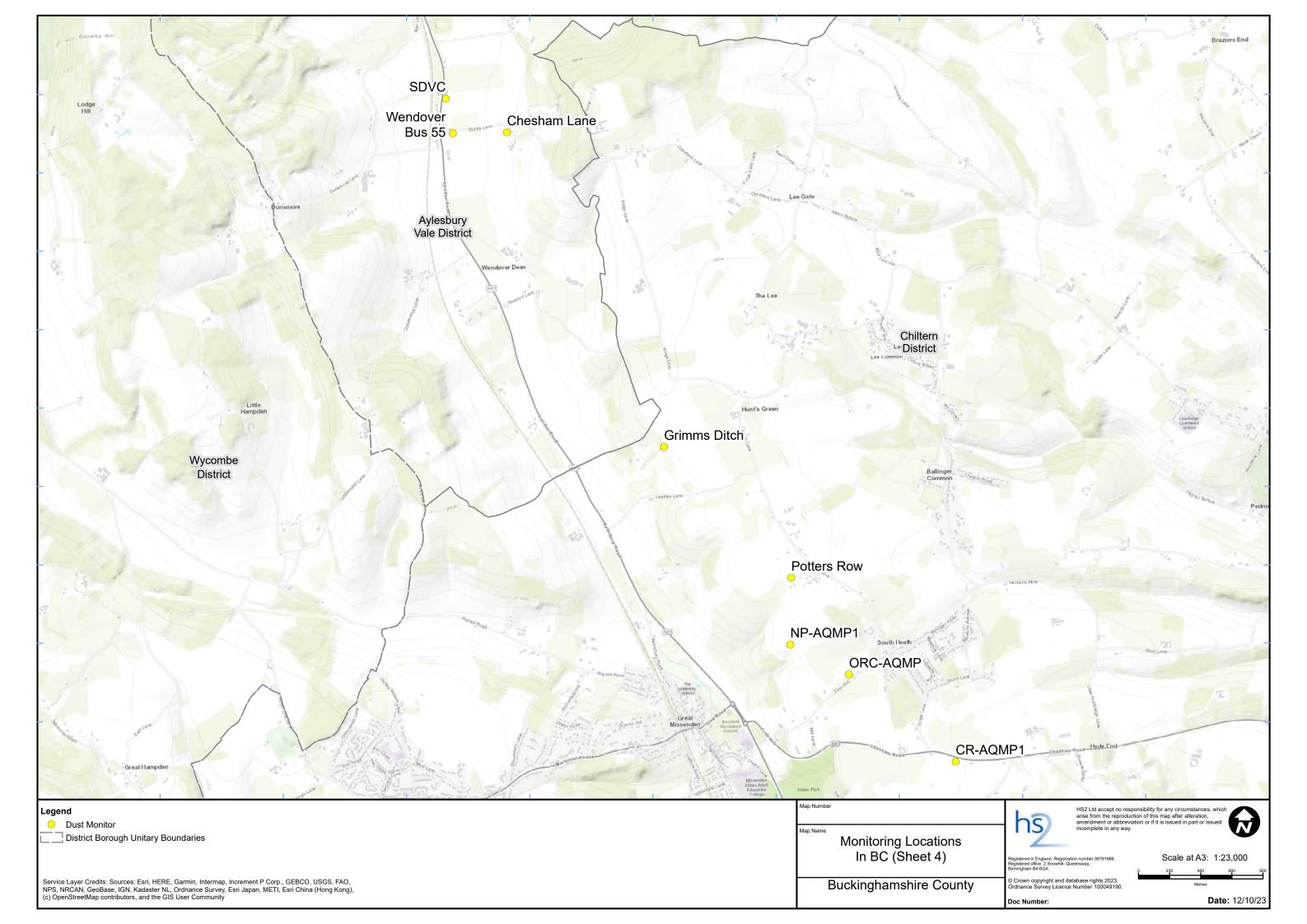
Appendix A - Worksite and Dust Monitoring Locations

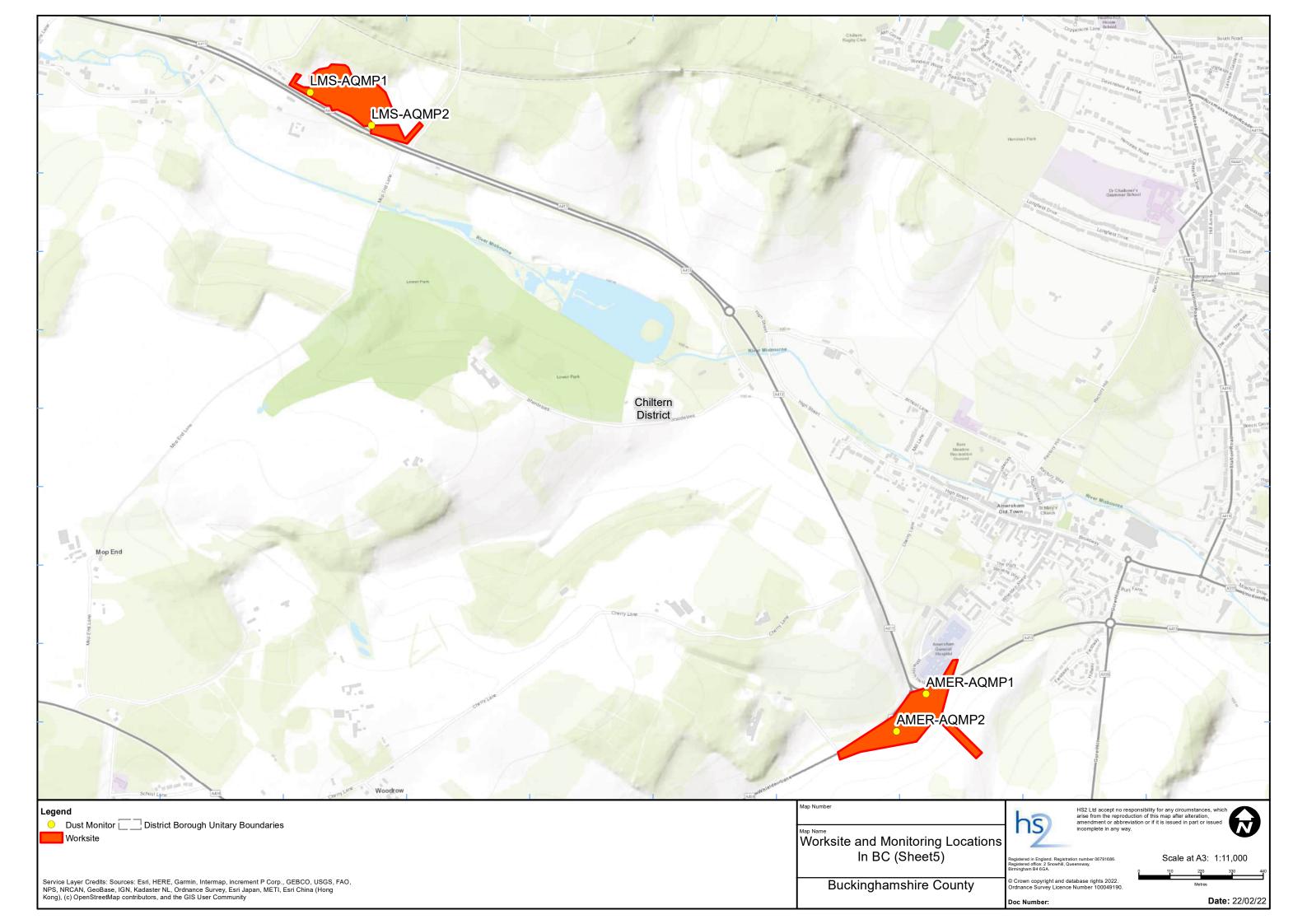
Figures 1-7: Worksite and Monitoring locations within BC

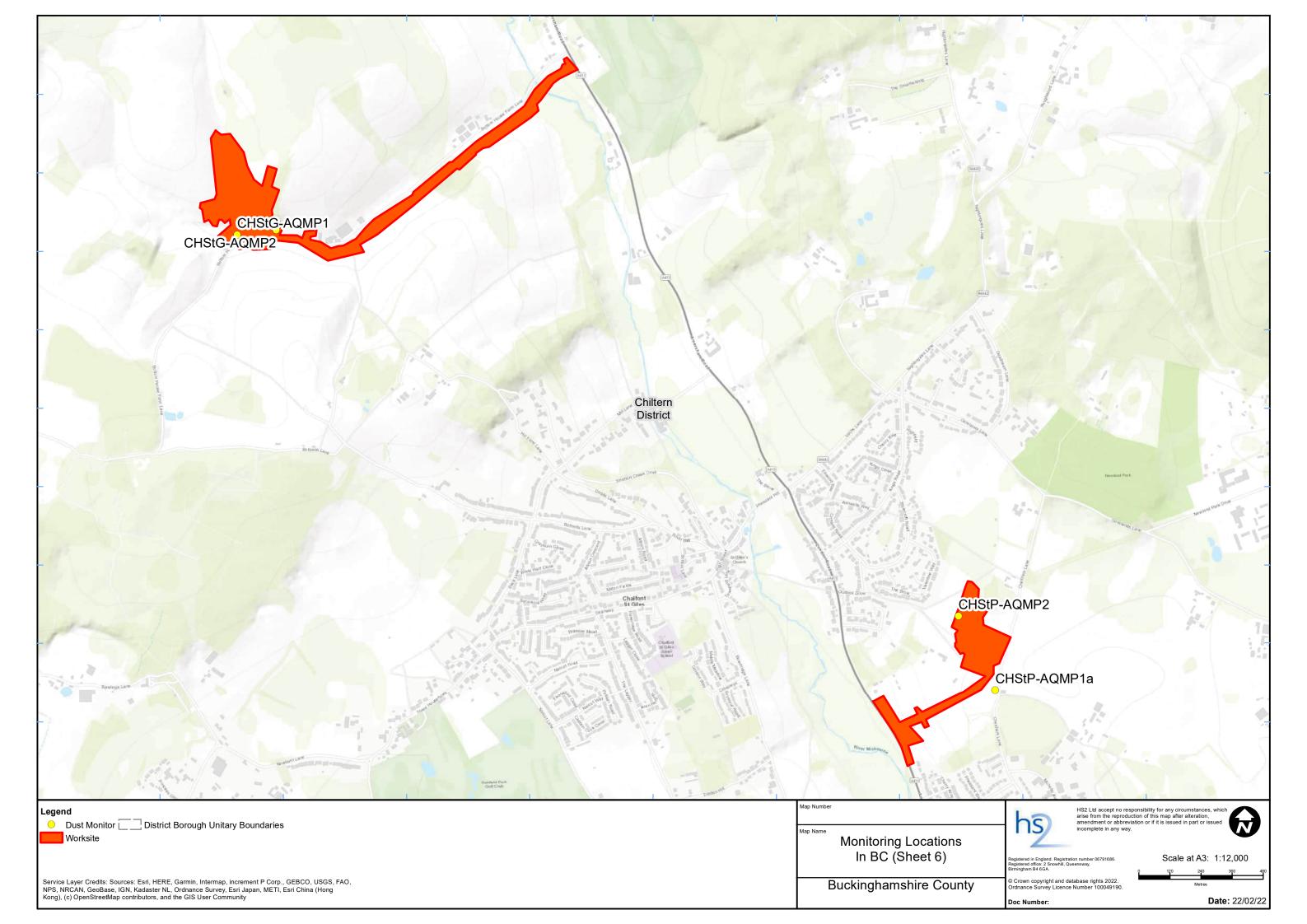


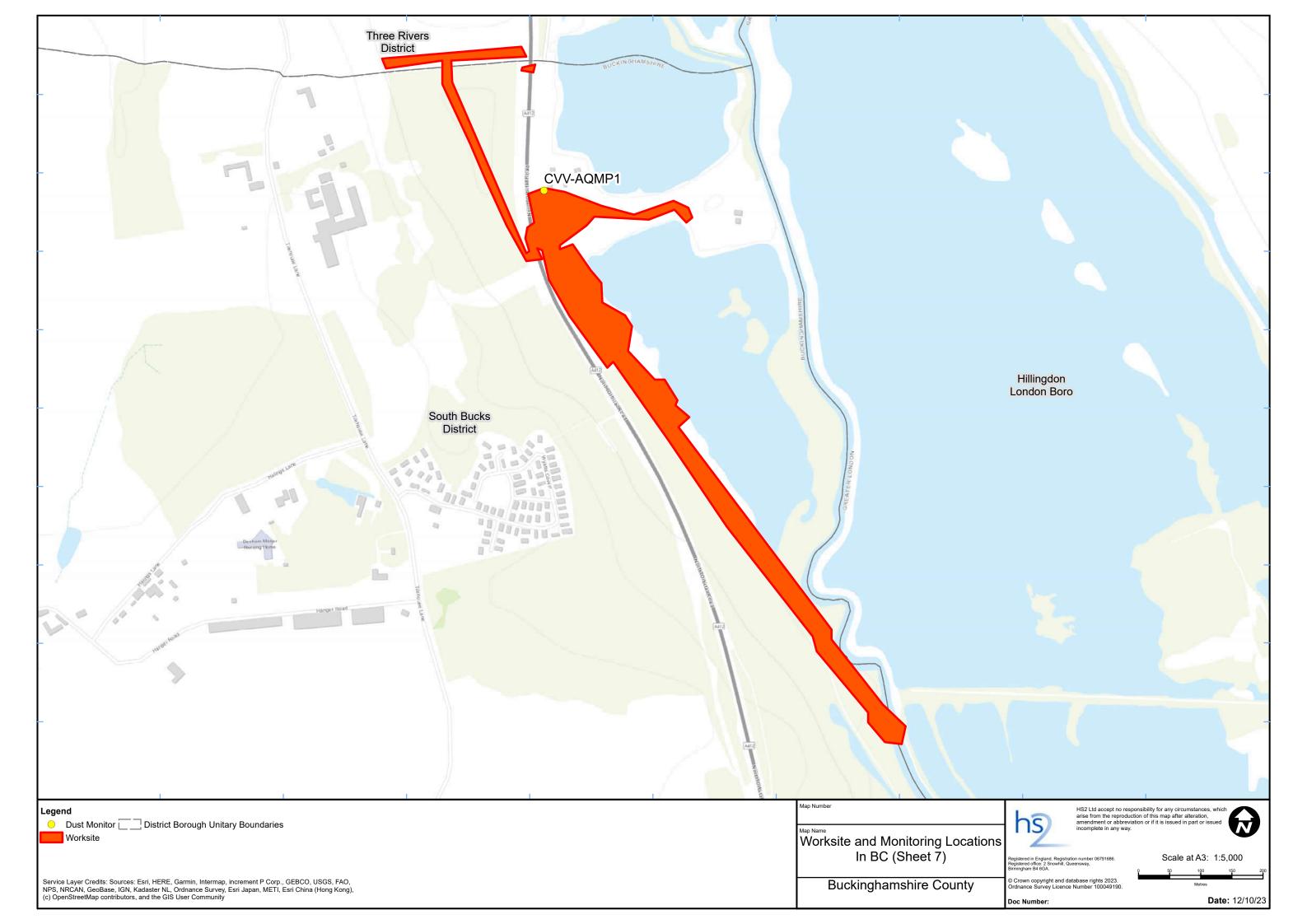












Appendix B - Dust Monitoring Results

Table 1: Dust Monitoring Locations and 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/m³) | Minimum 1-hour PM ₁₀ concentration (µg/m³) | Maximum 1-hour PM ₁₀ concentration (µg/m³) | Number of 1-hour periods exceeding trigger level of 190 µg/m³ | Data capture (%) |
|--------------------|----------------------|---|------------------------------------|--------------------------------------|--|--|---|---|---|---------------------|
| CVV-AQMP1 | 503612, 189846 | On the north boundary of LTP1 | М | Yes | No | 4.6 | 1.0 | 50.0 | 0 | 100.0 |
| CHStP-AQMP1a | 500093, 192996 | Relocated from CHStP-NMP1 to site-boundary outside residence | М | Yes | Yes | 4.3 | 1.0 | 30.0 | 0 | 100.0 |
| CHStP-AQMP2 | 499951, 193282 | On the western boundary of the site | М | Yes | Yes | 3.9 | 1.0 | 18.0 | 0 | 93.9 |
| AMER-AQMP1 | 495367, 196722 | On the north- eastern boundary of Amersham | М | Yes | Yes | 5.4 | 1.0 | 38.0 | 0 | 100.0 |
| AMER-AQMP2 | 495263, 196590 | On the south- western boundary of Amersham | М | Yes | Yes | 4.2 | 1.0 | 32.0 | 0 | 100.0 |
| CHStG-AQMP1 | 497170, 194752 | On the southern boundary close to Hobbs Hole Cottage | М | Yes | Yes | 5.1 | 1.0 | 19.0 | 0 | 88.3 |
| CHStG-AQMP2 | 497320, 194770 | On southern boundary next to carpark | М | Yes | Yes | 5.2 | 1.0 | 35.0 | 0 | 99.3 |
| LMS-AQMP1 | 493190, 198848 | On the south-west of the site | М | Yes | Yes | 5.1 | 1.0 | 39.0 | 0 | 100.0 |
| LMS-AQMP2 | 493407, 198731 | On the south-east of the site | М | Yes | Yes | 5.4 | 1.0 | 40.0 | 0 | 99.0 |
| CR-AQMP1 | 491291, 201143 | On the Chesham Road Vent Shaft | М | Yes | Yes | 5.4 | 1.0 | 41.0 | 0 | 98.1 |

| 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/m³) | Minimum 1-hour PM ₁₀ concentration (μg/m³) | Maximum 1-hour PM ₁₀ concentration (µg/m³) | Number of 1-hour periods exceeding trigger level of 190 µg/m³ | Data capture (%) |
|------------------------------------|----------------------|---|------------------------------------|--------------------------------------|--|---|---|---|---|---------------------|
| ORC-AQMP | 490503, 201786 | Orchard Cottage South-eastern Site Boundary | М | Yes | Yes | 5.0 | 1.0 | 41.0 | 0 | 99.7 |
| NP-AQMP1 | 490069, 202008 | North Portal Site Entrance | М | Yes | Yes | 5.1 | 1.0 | 38.0 | 0 | 97.8 |
| School Hill (CAL- AQMP2) - Dust | 469003, 224740 | School Hill Compound | М | Yes | Yes | 5.0 | 1.0 | 20.0 | 0 | 90.1 |
| School End – Dust | 463666, 230049 | School End, Chetwode | М | Yes | Yes | 6.6 | 1.0 | 62.0 | 0 | 98.1 |
| Potter Rows – Dust | 490075, 202502 | Potters Row, South Heath | М | Yes | Yes | 5.5 | 1.0 | 23.0 | 0 | 93.1 |
| Grimms Ditch – Dust | 489135, 203468 | Leather Lane, The Lee, South Heath | М | Yes | Yes | 3.0 | 1.0 | 14.0 | 0 | 67.6 |
| Chesham Lane - Dust | 487974, 205794 | Chesham Lane, The Lee, Wendover | М | Yes | Yes | 5.0 | 1.0 | 36.0 | 0 | 99.6 |
| Wendover Bus 55 - Dust | 487574, 205787 | Chesham Lane, The Lee, Wendover | М | Yes | Yes | 2.0 | 1.0 | 15.0 | 0 | 96.1 |
| Twyford - Dust | 466544, 226883 | Twyford, Buckinghamshire | М | Yes | Yes | - | - | - | - | - |
| Chetwode/Hermitage – Dust | 463936, 229521 | Hermitage, Chetwode | М | Yes | Yes | 5.8 | 1.0 | 41.0 | 0 | 98.3 |
| Glebe House - Dust | 480475, 212560 | A418 Aylesbury | М | Yes | Yes | 5.2 | 1.0 | 20.0 | 0 | 97.9 |
| Turweston North - Dust | 460439 , 237140 | Turweston, Buckinghamshire | М | Yes | Yes | 4.8 | 1.0 | 14.0 | 0 | 71.3 |
| FCC - Dust | 469042 , 224263 | Adjacent Red Kite View, Calvert | М | Yes | Yes | 4.9 | 1.0 | 20.0 | 0 | 98.1 |
| Ellesborough Road - Dust | 486458 , 207550 | Ellesborough Road, Wendover | М | Yes | Yes | 4.9 | 1.0 | 19.0 | 0 | 36.7 |
| Nash Lee Road - Dust | 484766 , 208782 | Nash Lee Lane (west) | М | Yes | Yes | 5.9 | 1.0 | 66.0 | 0 | 55.1 |

| 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/m³) | Minimum 1-hour PM ₁₀ concentration (μg/m³) | Maximum 1-hour PM ₁₀ concentration (μg/m³) | Number of 1-hour periods exceeding trigger level of 190 µg/m³ | Data capture (%) |
|-------------------------|----------------------|--|------------------------------------|--------------------------------------|--|---|---|--|---|---------------------|
| Nash Lee Lane - Dust | 485069 , 208793 | Nash Lee Lane (east) | М | Yes | Yes | 5.1 | 1.0 | 20.0 | 0 | 32.9 |
| Bacombe Lane – Dust | 486528 , 207217 | Bacombe Lane, Wendover | М | Yes | Yes | 5.8 | 1.0 | 38.0 | 0 | 99.9 |
| SDVC – Dust | 487522, 206043 | Small Dean Viaduct, London Road | М | Yes | Yes | 5.3 | 1.0 | 39.0 | 0 | 99.3 |
| Station Road – Dust | 474068, 219307 | Station Road, Quainton | М | Yes | Yes | 5.2 | 1.0 | 19.0 | 0 | 97.5 |
| Wendover Town - Dust | 486193, 207950 | Wendover Bypass, Wendover | М | Yes | Yes | 5.0 | 1.0 | 19.0 | 0 | 98.9 |
| Woodlands - Dust | 471603, 221315 | Station Rd, Quainton, Woodlands Farmhouse | М | Yes | Yes | 5.0 | 1.0 | 20.0 | 0 | 85.4 |
| Grove Farm | 486957, 206908 | Grove Farm, London Road, Wendover | М | Yes | Yes | 5.4 | 1.0 | 39.0 | 0 | 99.4 |

Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentration for all dust monitors

