November 2023

HS2

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

© HS2 Ltd. gov.uk/hs2



High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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 EWCs and MWCCs on behalf of HS2 Ltd.

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.

© High Speed Two (HS2) Limited, 2021, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v2.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-governmentlicence/version/2 **OGL** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



Printed in Great Britain on paper containing at least 75% recycled fibre.

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 November 2023.
- 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: Gl 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 and permanent drainage;
- Water pumping management;
- Satellite welfare;
- Generator farms;
- North Abutment: transportation (yard supporting activities) and FRC works for ancillary items;
- A412 Gas Crossing Emergency Dismantling;
- Fencing;
- Environmental Maintenance;
- 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) stressing and grouting, external PT 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 accesses top of the deck (HAKI stairs) and deck 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, noise barriers installation and north abutment works;
- 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, early soil (subsoil and topsoil) placement, hardstanding removal and tree removal & vegetation removal.

Chalfont St Peter Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- · Ground Level Works: external works; and
- Building Trade: external and internal works.

Amersham Vent Shaft

- General Site Activities;
- Internal Structure: concrete walls and floors;
- Tunnel Connections;
- Basement Construction: headhouse basement internals; and
- Headhouse Superstructure Concrete Works.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connections to Tunnels; and
- Building Trades: external works and internal works.

Little Missenden Vent Shaft

- General site activity;
- Tunnel Connection;
- Small basement construction; headhouse basement internals;
- Headhouse Superstructure Concrete Works;
- ATS Building;
- Landscaping; and
- Drainage.

Chesham Vent Shaft

- General site activity: general compound;
- Internal Structure: reinforced concrete works;
- Ground Level Works: headhouse ATS concrete works and external works; and

• Building Trades: internal and external works.

North Portal work site

- General Plant: site support;
- Piling Platform Reinstatement: scraping/hardstanding/earthworks and dismantling piling platforms;
- Porous Portal Structure: construct reinforced concrete frame and concrete works;
- TBM Arrival: preparation for TBM break-through; and
- Construct North Portal Building: scraping/ hardstanding/surfacing/services/drainage.

North Chilterns Area

Potters Row, Grimms Ditch

- GD Fugro drilling points (ground investigation)
- PR No activity carried out in the area. Area to be handed over to another MWCC.

Chesham Lane, Wendover Bus 55

- Pond excavation and moving over stockpile to alleviate pressure on adjacent pond and eliminate flooding.
- Earthworks (movement of stockpiles).
- Maintenance/stabilisation of Haul Road.
- Shaping of permanent landscaping.

Ellesborough Road

- Hand digging trench for BT ducts, construction of BT and VM access chambers.
- Installation of railings on Ellesborough road diversion.
- Ellesborough Road Utilities diversion works testing of 11kv and 33kv cables, vacuum excavator digging of 33kv cable and gas pipe trench, gas pipe laid and backfilled.
- Laying of cold-lay tarmac on Ellesborough Road, East tie-in.
- Installation of kerbs on Ellesborough Road West tie-in.
- Laying of Tarmac on Ellesborough Road temporary diversion.
- Installation of Vehicle Restraint System on Ellesborough Road temporary diversion.

Nash Lee Road, Nash Lee Lane

- Earthworks (movement of stockpiles).
- Silt trenching at Nash Lee triangle.
- Horizontal Directional Drilling of Utilities Diversion (TWM diversion and UKPN/BT Diversion).
- Installation of Nash Lee WGT Plant crossing gate post.
- De-vegetation at Nash Lee entrance.
- Fixing of gate at the Nash Lee refuelling station.
- SAR maintenance/extension.

Bacombe Lane

- Stoning up access ramp for lower platform Bacombe Lane Utilities Bridge.
- Construction of Sheet Piling platform.
- Installation of Sheet Piles.
- Bacombe Lane Petrol Interceptor Interceptor backfill with concrete.
- Install culvert for surface water management in Bacombe Lane (temporary works)
- Install mh 305 and mh308 First 1m ring, cut for pipes and concrete backfill.
- Bacombe Lane crossing manhole raisers and cover lid installed.
- Headwall completed on inlet pipe from v-ditch.
- Extension to v-ditch excavated.

Grove Farm

• Installation of pump next to holding pond at Grove Farm to pump water from the holding pond to the infiltration pond.

Small Dean Viaduct

- A413 Road diversion works.
- Installing starter bars on P6 and Formwork.
- P5 Cleaning and drilling of anchor bolts.
- Earthworks (movement of stockpiles).

Wendover Town

- Concrete Crushing.
- Construction of new SAR to connect main compound to Ellesborough Road site.
- Maintenance of V-ditches (Surface Water Management).
- Movement of material/stockpiling material (earthworks/crushed concrete).
- Construction of platform to site new welfare facility for BKJV.
- Vac-ex of main compound substation.

Calvert Area

Station Road (Quainton)

No works.

Woodlands Farm (Woodlands)

- Adams Accommodation underbridge installation of parapets
- River Ray culvert technical backfill
- Finmere retaining wall installation of sheet piles
- Aggregate deliveries along the SAR.

FCC / School Hill (Calvert)

School Hill batching plant – production of concrete

- School Hill culvert construction of in-situ mammal ledge
- School Hill overbridge demolition of pre-existing bridge
- Calvert Green overbridge D&R under structure and construction of bentonite batching plant
- 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
- East West Rail overbridge
- Charndon Lodge underbridge
- IMD West culvert
- Addison Road highway
- Shepherds Furze earthworks (stockpile maintenance)
- Shepherds Furze culvert
- MCJ4 chord earthworks
- Infrastructure maintenance depot (IMD) earthworks
- Bat mitigation structure
- SCL/13 overbridge
- FCC Cell 6 earthworks (stockpile maintenance)
- Sheephouse Wood North culvert
- Greatmoor no. 4 culvert and CAG2 underbridge
- Greatmoor no. 3 culvert
- GUN28 overbridge
- QUA36 overbridge
- Hills farm earthworks (stockpile maintenance)
- Edgcott Road overbridge
- Doddershall Embankment earthworks

Twyford to Greatworth

Turweston North

- Access track construction
- Loading of 1A1 to south of T2G
- Duo crushing
- Bentonite platform works
- CSW testing
- Excavate and replace
- Temporary drainage.

School End

Air Quality and Dust Monitoring Summary Report, November 2023 Buckinghamshire Council

- Temporary drainage works
- SEOB site preparation.

<u>Twyford</u>

- Temporary drainage works
- Lime stabilisation work
- Silt fencing installation
- Stockpiling works
- Excavation of ponds.

CHW18

- Formwork
- Concrete pouring.

Aylesbury

Glebe House

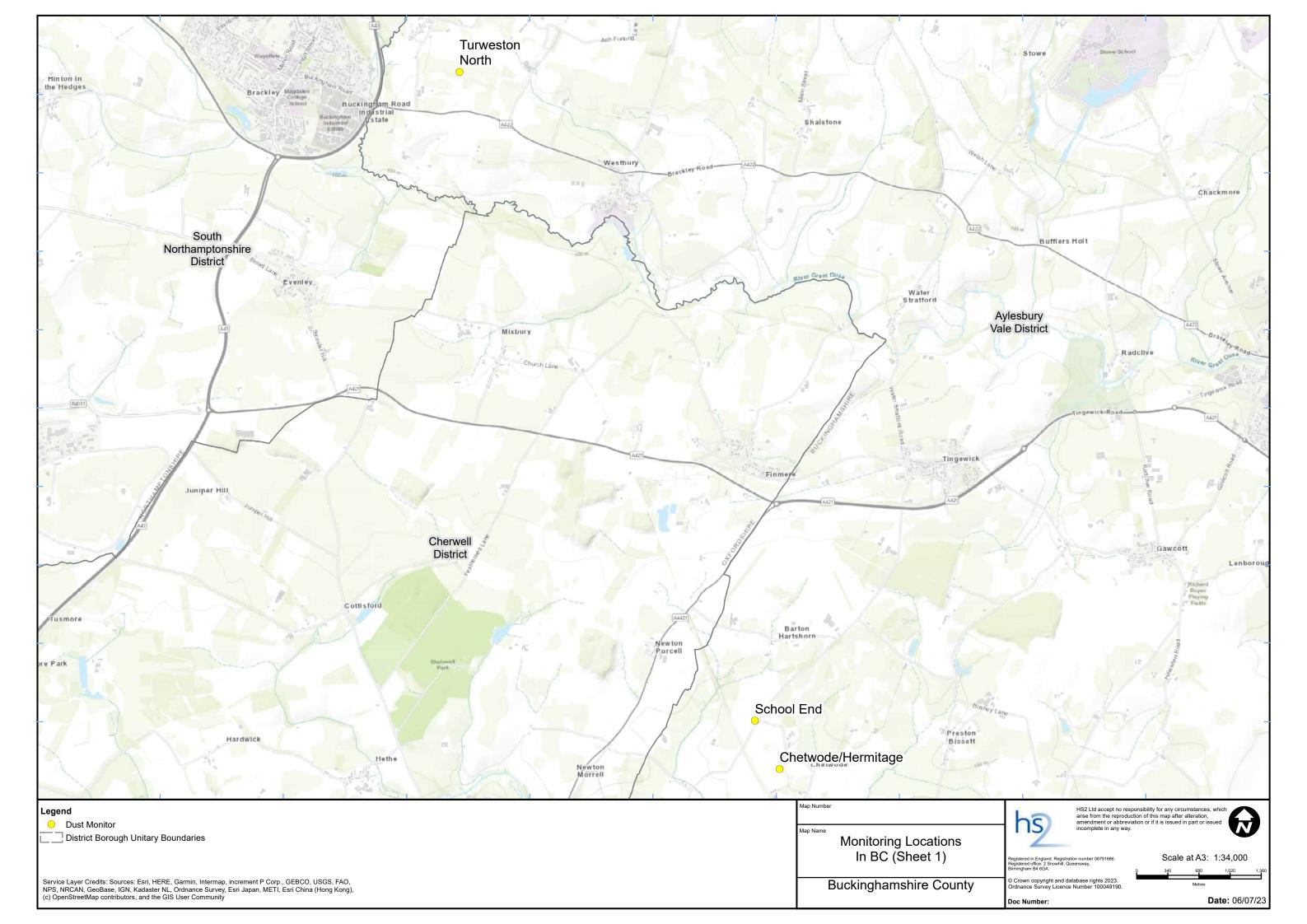
- A418 weekend HV diversion duct laying
- A418 weekend utility trial holes
- A418 Overbridge deck works
- A418 realignment earthworks.
- 1.1.5 Thirty-five (35) dust monitors are installed around these worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring 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 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2.
- 1.1.9 Data capture was below 90% for multiple monitors. Potters Row and Grimms Ditch monitors were taken for laboratory calibration and reinstalled on 23rd November 2023.
 Small Dean Viaduct, Turweston North and Woodlands monitors had suspected battery faults and a lack of solar charge. Grove Farm had a faulty SD card and lack of solar charge.

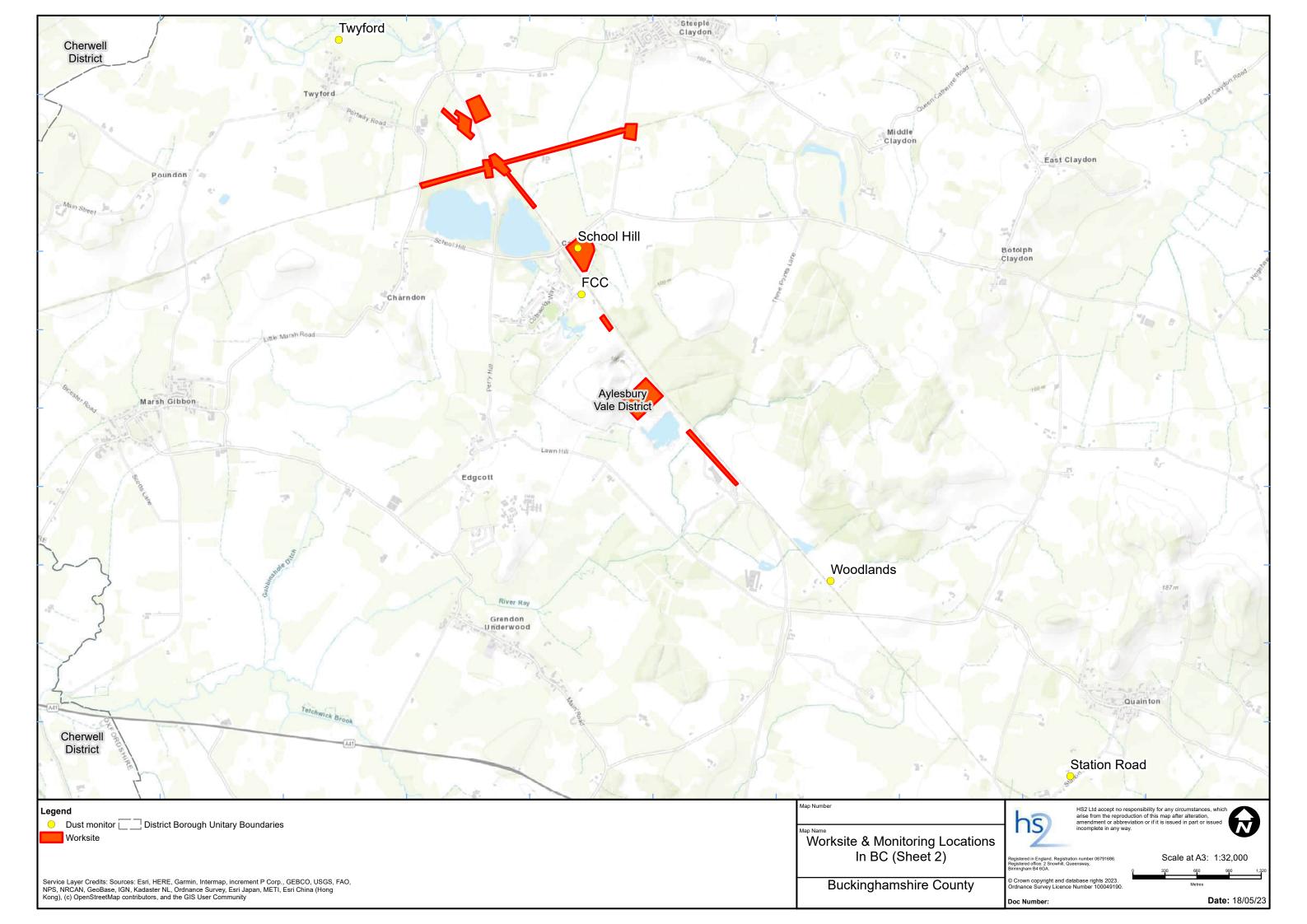
The School End monitor had a suspected fault, so data has been excluded for this month. All other low data captures from within this period can be attributed to technical issues and/or loss of power due to insufficient sunlight/wind for monitors using solar/wind power.

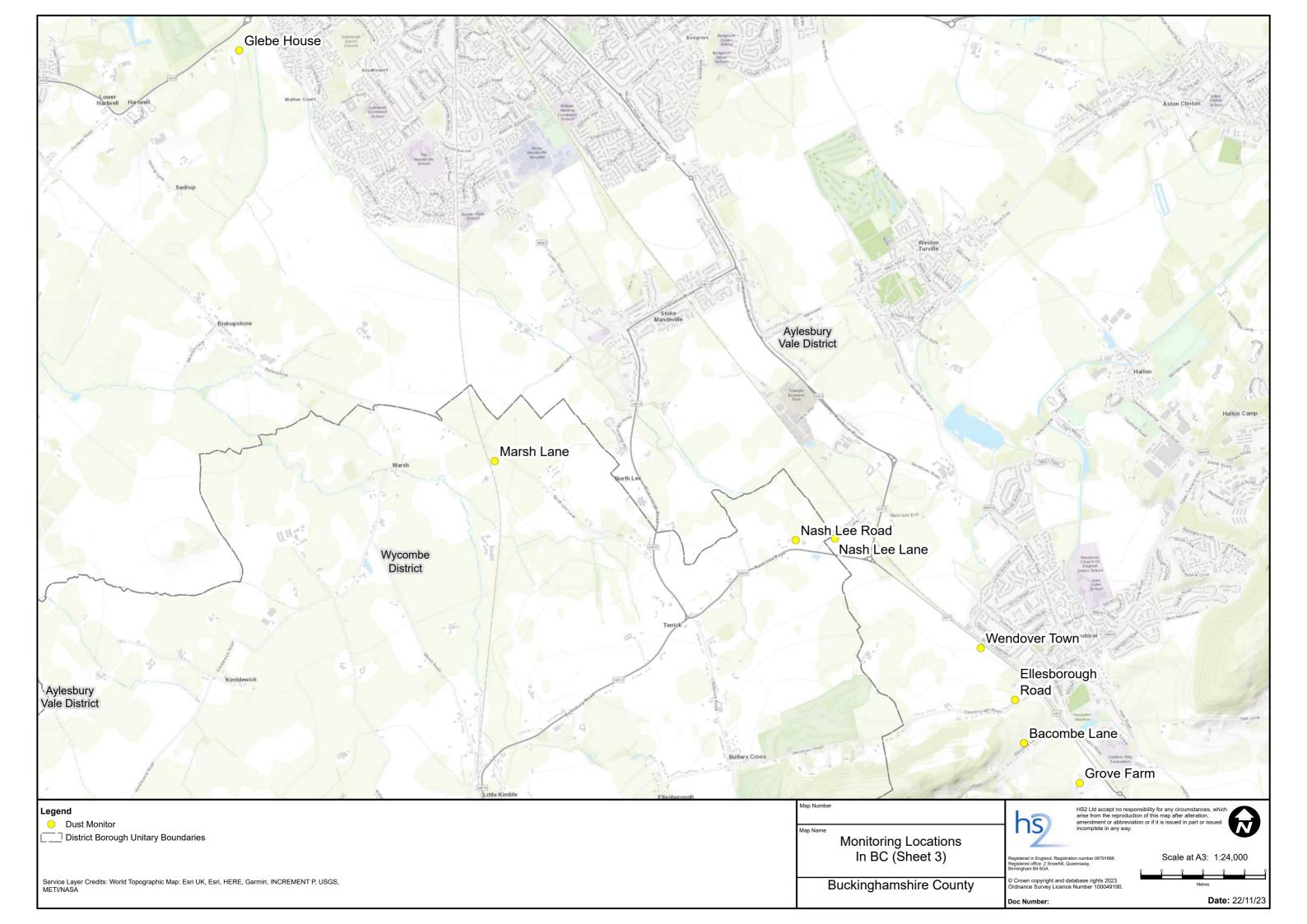
1.1.10 There were no (0) complaints received during the reporting period (November 2023).

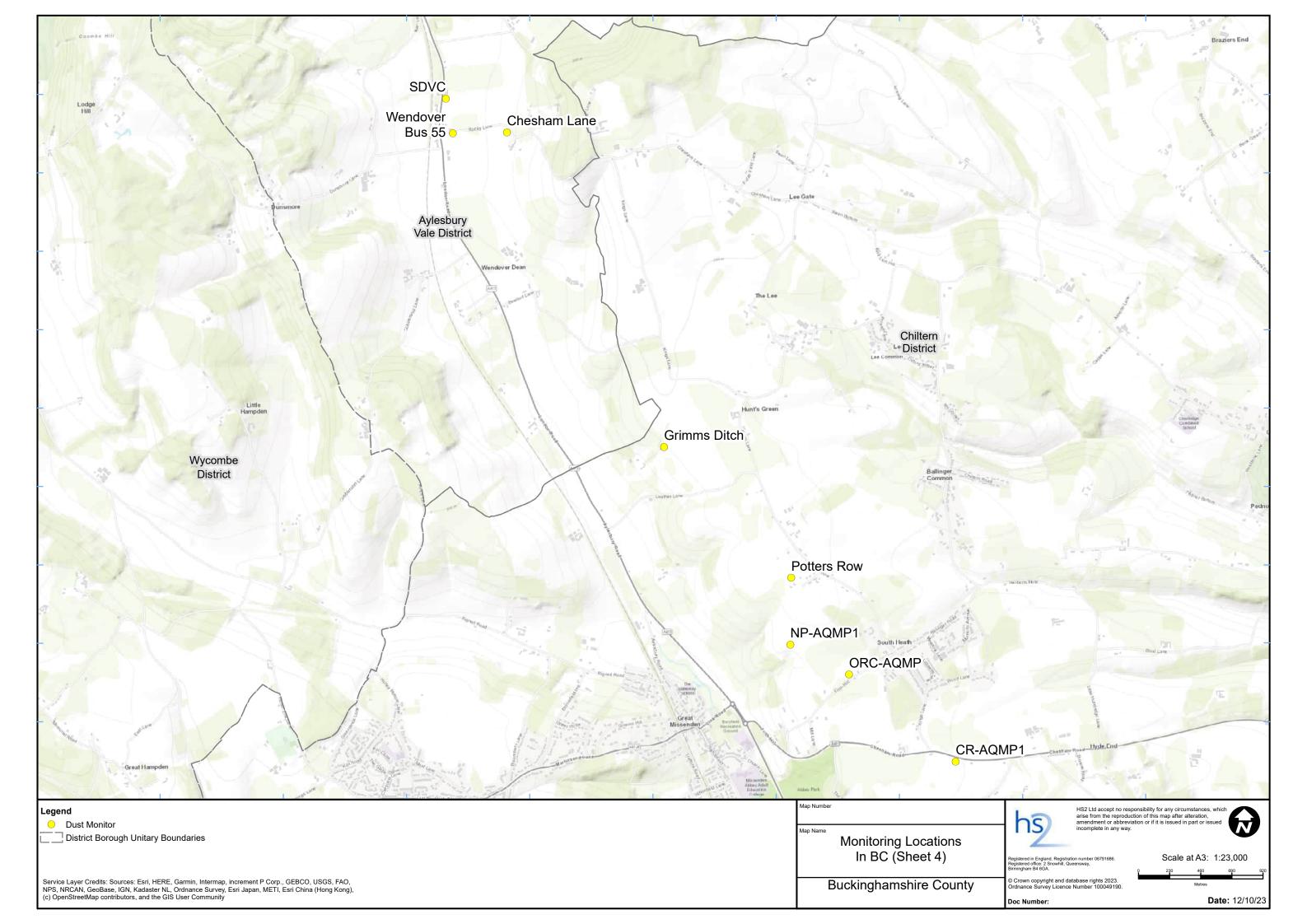
Appendix A - Worksite and Dust Monitoring Locations

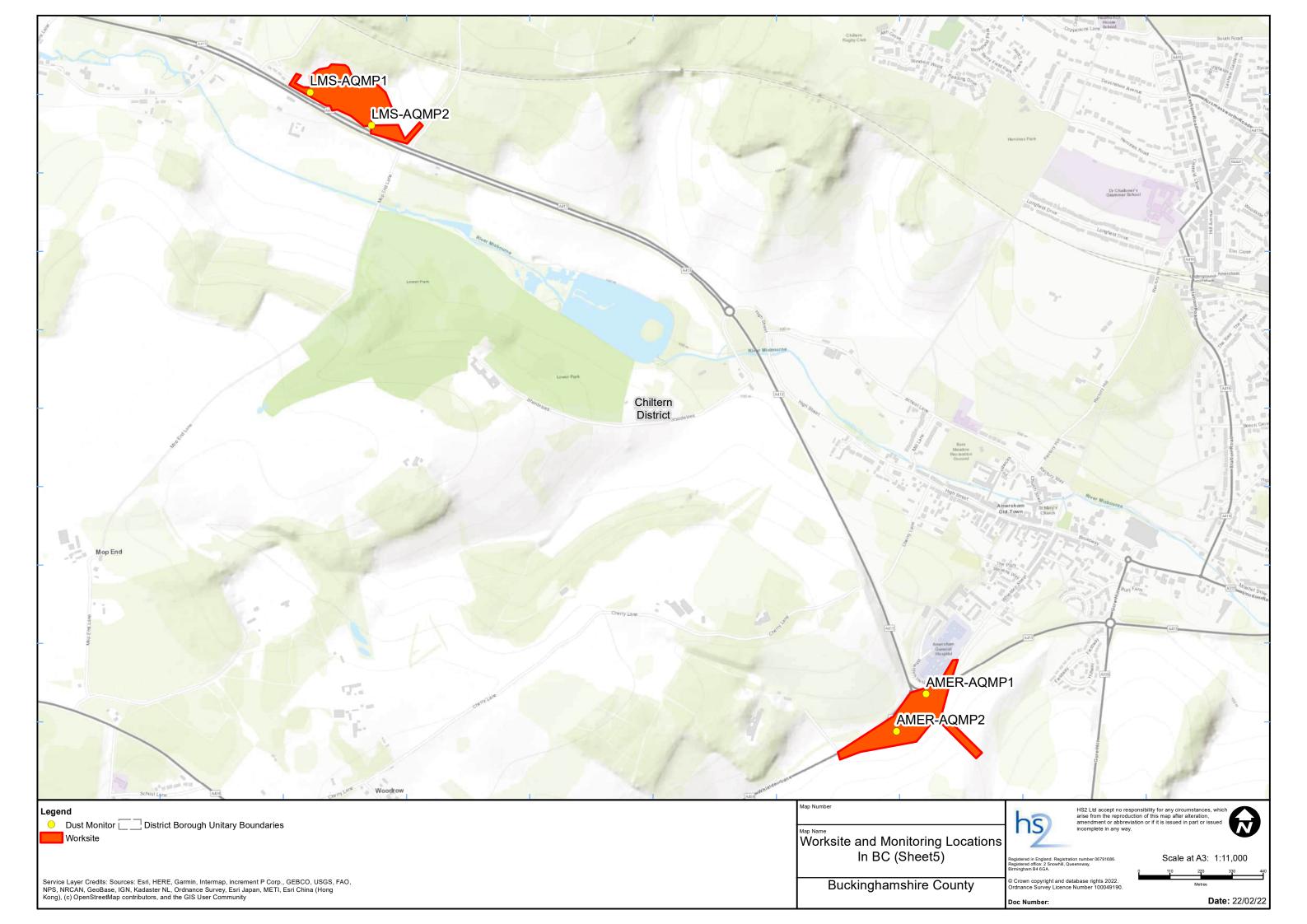
Figures 1-7: Worksite and Monitoring locations within BC

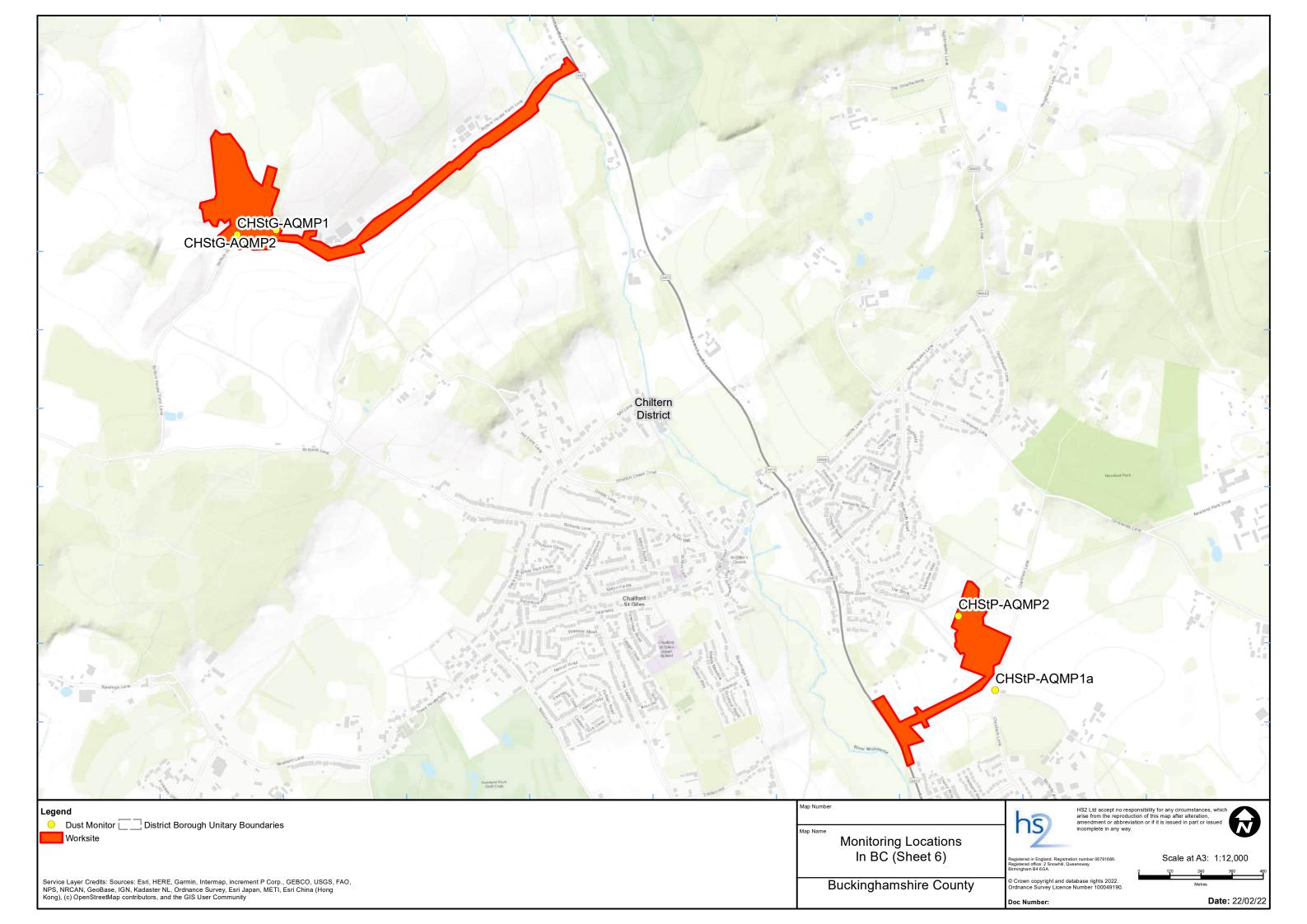


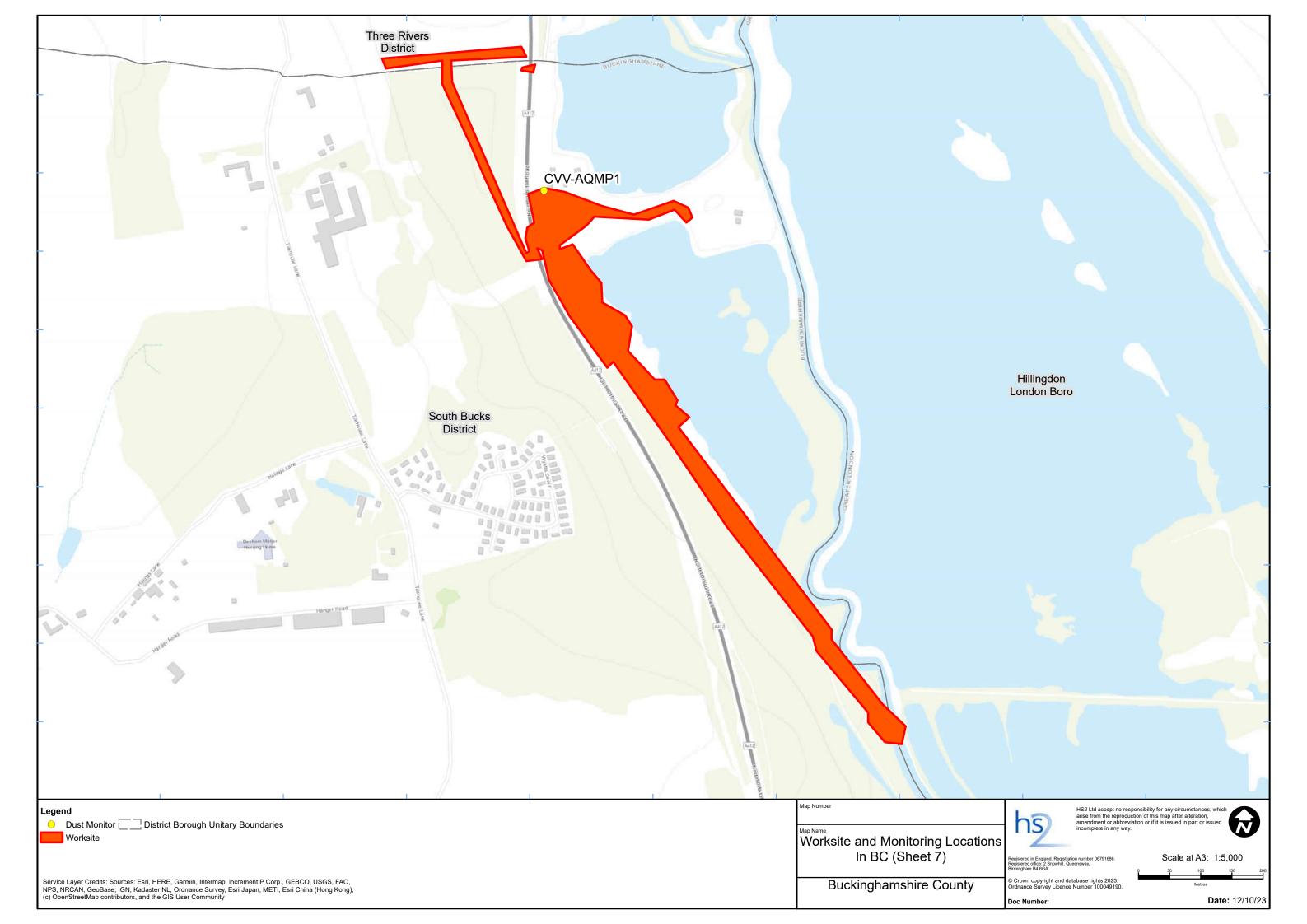












Appendix B - Dust Monitoring Results

Table 1: Dust Monitoring Locations and 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	7.3	1.0	51.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	6.6	1.0	49.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	7.1	1.0	36.0	0	100.0
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	6.9	1.0	24.0	0	99.9
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	6.4	1.0	26.0	0	100.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	6.4	1.0	23.0	0	94.6
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	7.0	1.0	199.0	1	99.9
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	6.6	1.0	27.0	0	98.5
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	6.5	1.0	50.0	0	99.2
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	6.4	1.0	36.0	0	99.6

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	5.8	1.0	27.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	М	Yes	Yes	5.7	1.0	27.0	0	100.0
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	6.7	1.0	28.0	0	89.0
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	6.1	1.0	29.0	0	55.1
Potter Rows – Dust	490075, 202502	Potters Row, South Heath	М	Yes	Yes	6.6	1.0	18.0	0	24.0
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	2.6	1.0	7.0	0	24.6
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	6.0	1.0	40.0	0	72.4
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	7.3	1.0	28.0	0	59.2
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	-	-	-	-	-
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	-	-	-	-	-
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	3.9	1.0	104.0	0	20.1
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	7.1	1.0	83.0	0	76.4
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	6.5	1.0	35.0	0	76.9
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	5.2	2.0	17.0	0	8.8
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	5.5	1.0	20.0	0	46.3

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 (%)
Ellesborough Road - Dust	486458, 207550	Ellesborough Road, Wendover	М	Yes	Yes	4.7	1.0	27.0	0	31.5
Nash Lee Road - Dust	484766, 208782	Nash Lee Lane (west)	М	Yes	Yes	6.2	1.0	31.0	0	44.0
Nash Lee Lane - Dust	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	6.2	1.0	70.0	0	63.1
Bacombe Lane – Dust	486528, 207217	Bacombe Lane, Wendover	М	Yes	Yes	5.8	1.0	24.0	0	48.9
SDVC - Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	6.0	1.0	21.0	0	11.8
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	6.7	1.0	31.0	0	96.3
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	6.6	1.0	30.0	0	90.6
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	М	Yes	Yes	5.6	1.0	17.0	0	19.2
Grove Farm	486957, 206908	Grove Farm, London Road, Wendover	М	Yes	Yes	8.0	1.0	20.0	0	16.8
Marsh Lane	482445, 209392	Marsh Lane, North Lee.	М	Yes	Yes	6.0	1.0	31.0	0	61.7

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

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
CHStG-AQMP2	25/11/2023 08:00 – 08:59; 199 μg/m ³	Exceedance likely due to wind whipping of nearby (within 3m) loose earth mounds and monitor being located immediately beside site-vehicle haul route.	Concentrations at this monitor are to be closely monitored. No further exceedances at present.

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

