

September 2023

# Air Quality and Dust Monitoring Monthly Report – September 2023 Buckinghamshire Council

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A report prepared by EWCs and MWCCs on behalf of HS<sub>2</sub> 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 September 2023.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for September 2023.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from <u>www.gov.uk/government/collections/monitoring-the-environmental-</u> <u>effects-of-hs2</u>, 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 and bulk earthworks;
- 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 and tree removal & vegetation removal.

# **Chalfont St Peter Vent Shaft**

- General Site Activities;
- Road Maintenance Works;
- Connection to Tunnels;
- Shallow Basement Construction: basement internals & headhouse concrete works; and
- Ground Level Works: headhouse concrete works and external works.

# Amersham Vent Shaft

- General Site Activities;
- Tunnel Connections;
- Basement Construction: headhouse basement internals;
- Headhouse Superstructure Concrete Works; and
- Permanent Drainage.

# **Chalfont St Giles Vent Shaft**

- General Site Activities;
- Road Maintenance Works;
- Connections to Tunnels;
- Ground Level Works: headhouse concrete works and ATS buildings; and
- Building Trades: external works and internal works;

# Little Missenden Vent Shaft

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

# 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 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

• Earthworks (relocation of stockpiles).

### Chesham Lane, Wendover Bus 55

- Earthworks Relocation of stockpiles for landscaping; and
- Installation of sheet anchors for RLUB sheet piling.

#### Ellesborough Road

- Trench excavation East side of Ellesborough Road bridge;
- Installation of Herres Post on the West side of Ellesborough Road bridge;
- Excavation and laying of sand for gas pipe;
- De-vegetation and tree cutting works;
- Vacuum excavation and backfilling on Ellesborough Road West embankment; and
- Pulling and Installation of electrical ducting through Ellesborough Rd. bridge.

### <u>Nash Lee Road, Nash Lee Lane</u>

- Earthworks (movement of materials).
- Risborough Road Temporary bridge construction.
- Tarmac to plane the amended Nash Lee Lane stone road.
- Nash Lee Barn Vegetation clearance
- KIS Site compound set out and topsoil strip.
- Relocation of Phase 2 compound over to BKJV compound near NLL Access Gate.
- Lifting and placing Steel beams on Risborough Road temporary bridge using 750T crane.
- Setting up HDD rig on TWM launch pit
- Mobilising piling rig ready for the test pile platform
- Fixing of hoarding onto the Risborough Road bridge.

### Bacombe Lane

- Plant crossing install White Lining, Traffic Lights, TVCB's;
- Archeology Surveys;

- Clancy utility diversion works Enabling access tracks completed by us;
- Realign the bridleway Setting up fencing and establishing safe walking route/underfoot conditions;
- Stockpiling/delivery of stone; and
- ATM deveg on BL and ER.

### <u>Grove Farm</u>

- CLD Fencing installation (segregate stockpile area);
- Trial hole to locate TW water main; and
- Set up compound for charity event (hard standing area).

#### Small Dean Viaduct

- Earthworks (excavation of materials).
- P1 Pile concrete pour for blinding slab
- A0-7 piling complete and concreted
- A0-5 piling complete and concreted
- A0-8 piling complete and concreted.

#### <u>Wendover Town</u>

- Lining of Wendover batching plant yellow lining edge marking, 2 zebra crossings, 6 parking bays, pedestrian walking route etc.;
- Earthworks (Stockpile movement);
- Concrete crushing;
- Backfilling of guide wall; and
- Installation of Kee-Clamp going upward to batching plant.

### **Calvert Area**

#### Station Road (Quainton)

• No works.

### Woodlands Farm (Woodlands)

- River Ray Culvert waterproofing and technical backfill;
- Adams Accommodation Underbridge Deck poured;
- Woodlands Culvert concrete protection slab and technical backfill;
- Mass haulage of aggregate;
- Edgcott Road Overbridge pile caps rebar fixing and pour; and
- Finmere Retaining Wall N/A.

### FCC / School Hill (Calvert)

- Secant Retaining Wall works paused;
- Mass haulage of aggregate;
- Shepherds Furze Culvert waterproofing and technical backfill;

- School Hill Batching Plant production of concrete;
- School Hill Culvert Installation of pre-cast unit; and
- Calvert cutting earthwork excavation and fill.

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

- EWR Culvert scour protection and diversion tie-ins;
- Charndon Lodge Pumping Station drainage works;
- Charndon Lodge Underbridge technical backfill;
- East West Rail Overbridge technical backfill;
- IMD West Culvert no works (final diversion tie-ins outstanding);
- IMD East Culvert no works (final diversion tie-ins outstanding);
- Addison Road Overbridge complete;
- Addison Road permanent highway diversion approach embankments;
- SCL/08 Overbridge no works;
- West Street utility diversions works complete;
- SGN pipeline diversion trenching and installation of pipework;
- Gawcott Road temporary highway diversion road construction;
- Perry Hill Overbridge FRC works for concrete deck and approach earthwork embankments;
- Portway Culvert all works complete with exception of diversion tie-in;
- OXD / EWR Line Earthworks backfill between EWR east abutment and Charndon lodge west abutment;
- IMD Earthworks platform and landscape bund fill;
- Sheephouse Wood North Culvert no works;
- Bat mitigation structure excavation and fill for dig and replace (D&R), mobilisation of FRC contractor, blinding;
- CAG2 Underbridge / Greatmoor No. 4 culvert excavation and fill for dig and replace (D&R), concreting base slabs;
- Megaditch Culvert placing precast units;
- Greatmoor No. 3 culvert waterproofing and technical backfill;
- GUN28 Overbridge FRC works for abutments and wingwalls;
- Doddershall No. 6 culvert concrete protection slab and technical backfill;
- Doddershall No. 7 culvert concrete protection slab and technical backfill;
- Doddershall landscape bund fill;
- Hills farm stockpile maintenance;
- FCC Cell 6 stockpile maintenance; and
- Shepherds Furze stockpile maintenance.

### Twyford to Greatworth

Turweston North

- Duo crushing;
- River Realignment;
- TGOB excavation; and

• Excavate and replace.

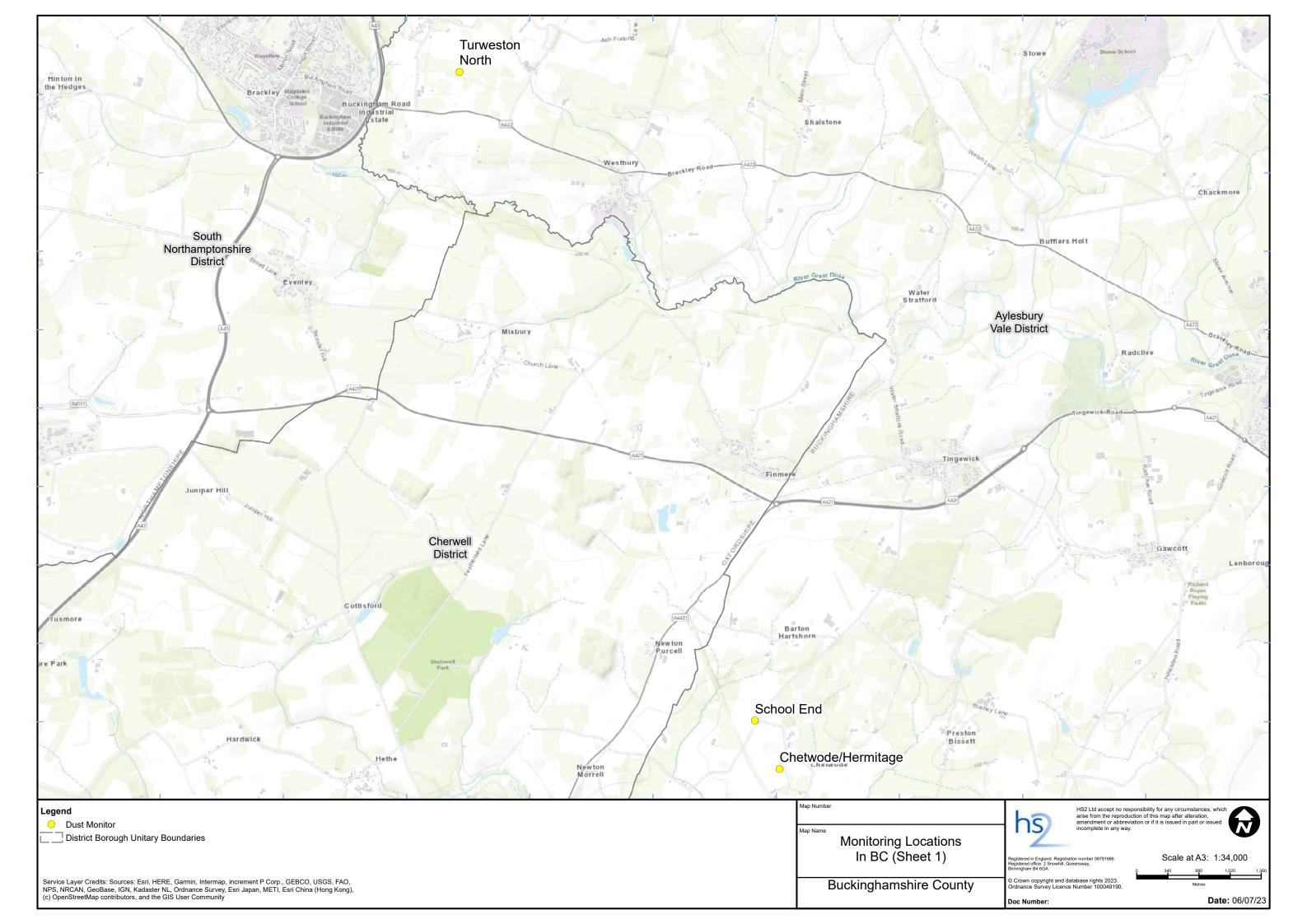
### Aylesbury

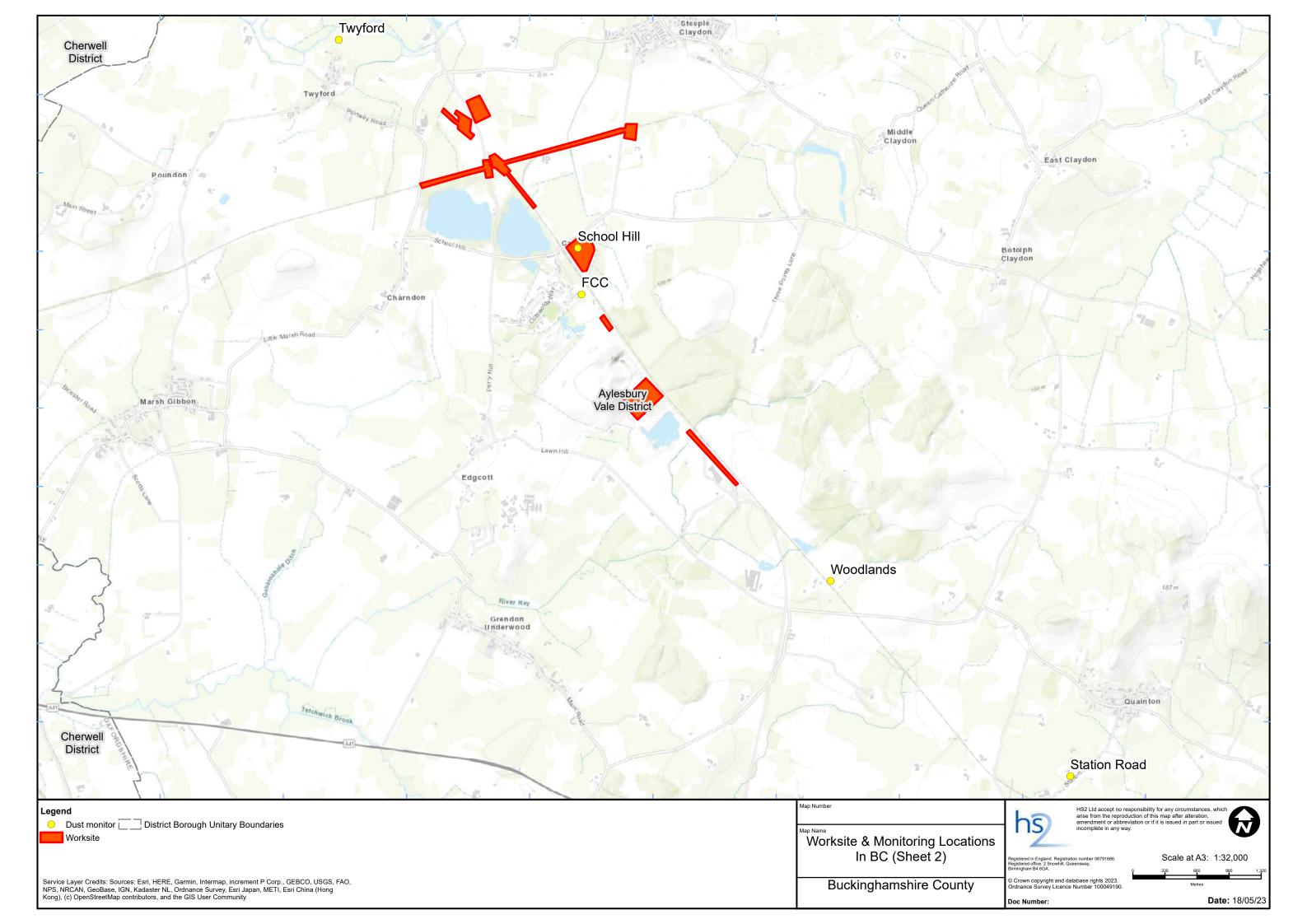
#### <u>Glebe House</u>

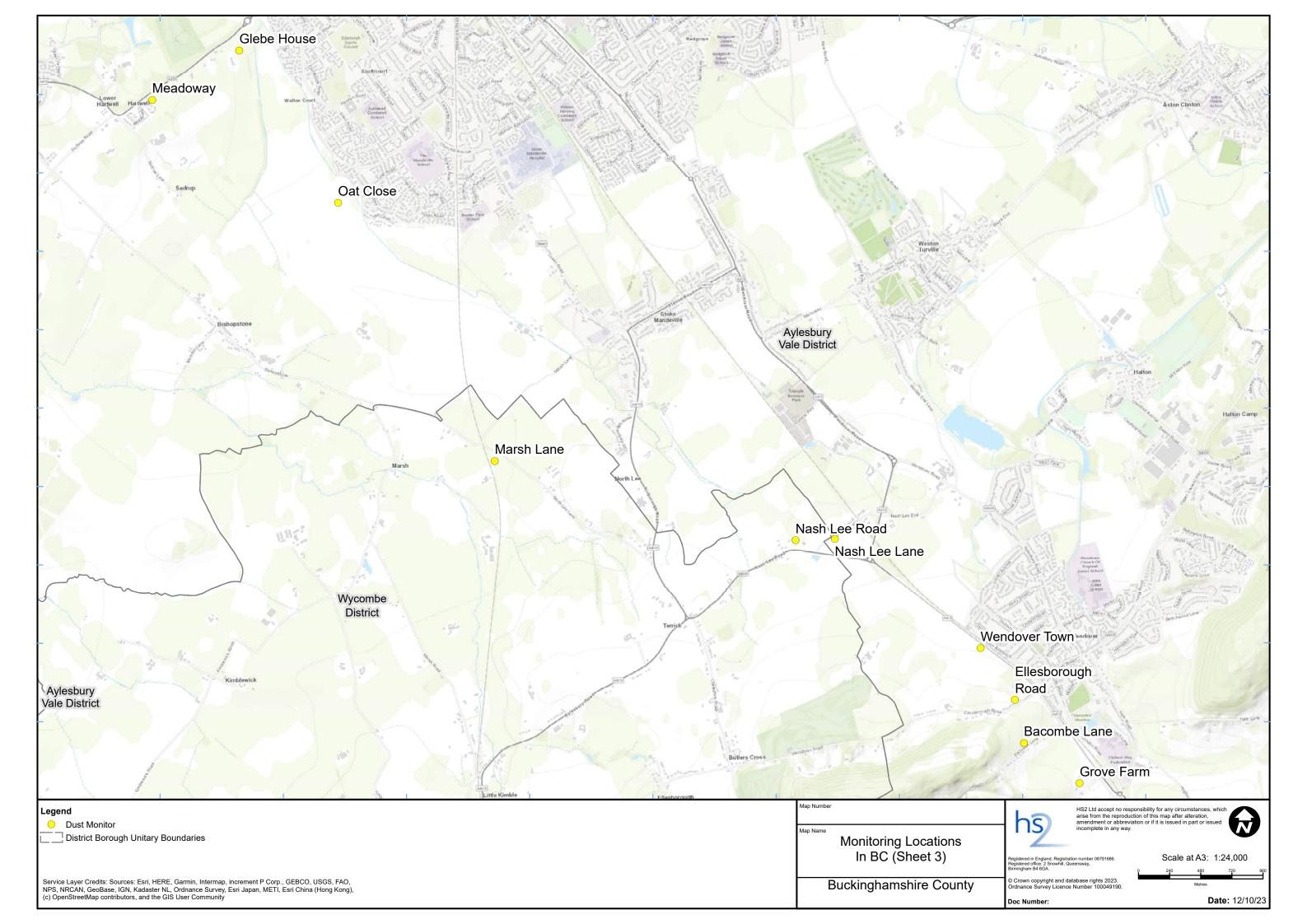
- A418 Realignment backfill; and
- A418 Overbridge main cutting excavation.
- 1.1.5 Thirty-five (35) dust monitors are installed around worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for are presented in Appendix B, Table 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<sub>10</sub> concentrations of 190 μg/m<sup>3</sup>, 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. Missing data at LMS-AQMP1a was due to a monitor data processing issue. The issue has since been resolved. Missing data at ORC-AQMP was due to a power issue. No data capture was captured at the Potters Row, Grimms Ditch and Oat Close monitors was due to them being momentarily retrieved for lab calibration. No data was captured at the Meadoway monitor due to components of the circuit being stolen. Low data capture for Ellesborough Road was due to monitor recording intermittent data, most likely due to system fault. All other low data captures 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 The Hunts Green monitoring site was decommissioned in August 2023.
- 1.1.11 No (0) complaints were received during the reporting period (September 2023).

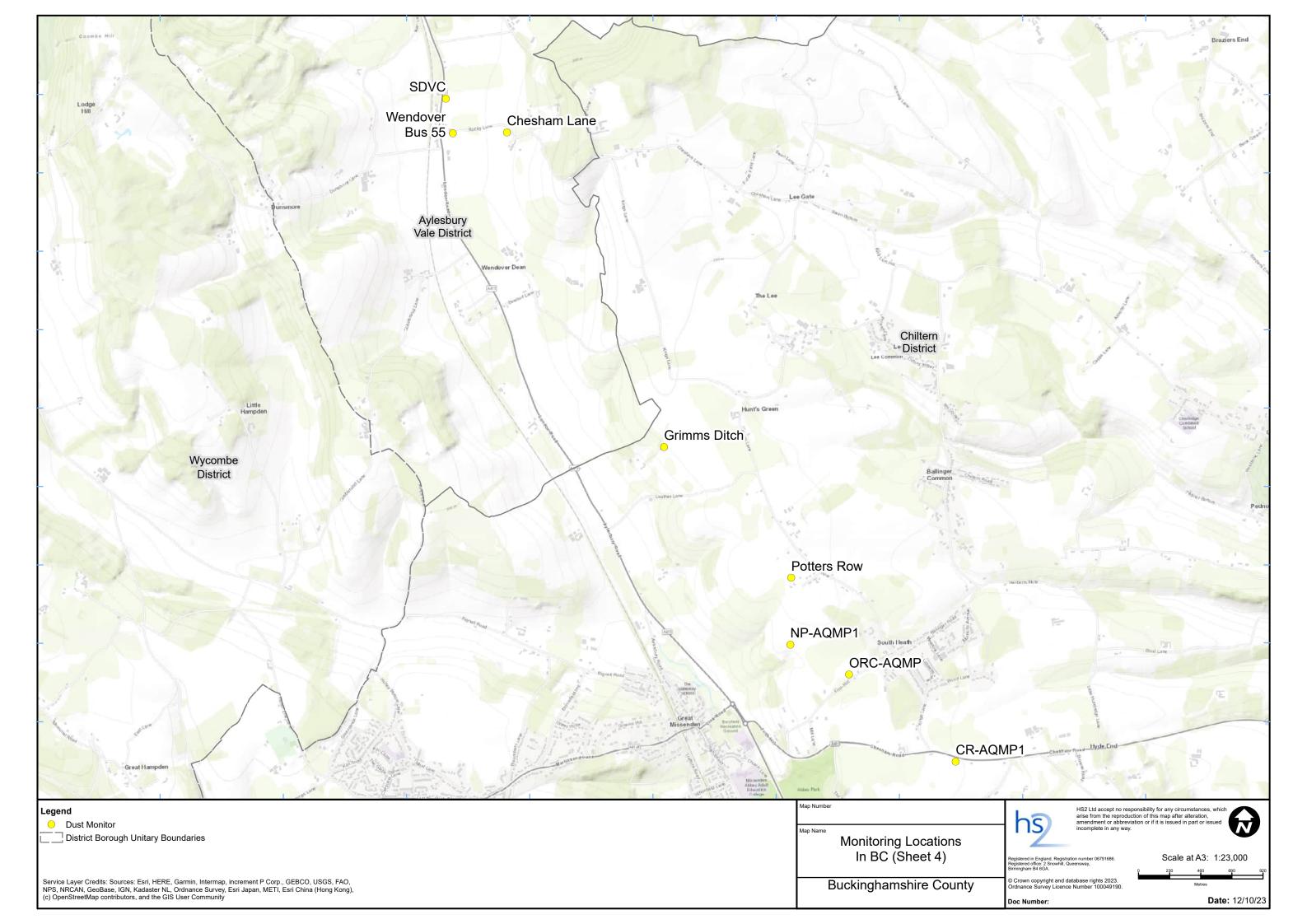
# **Appendix A – Worksite and Dust Monitoring Locations**

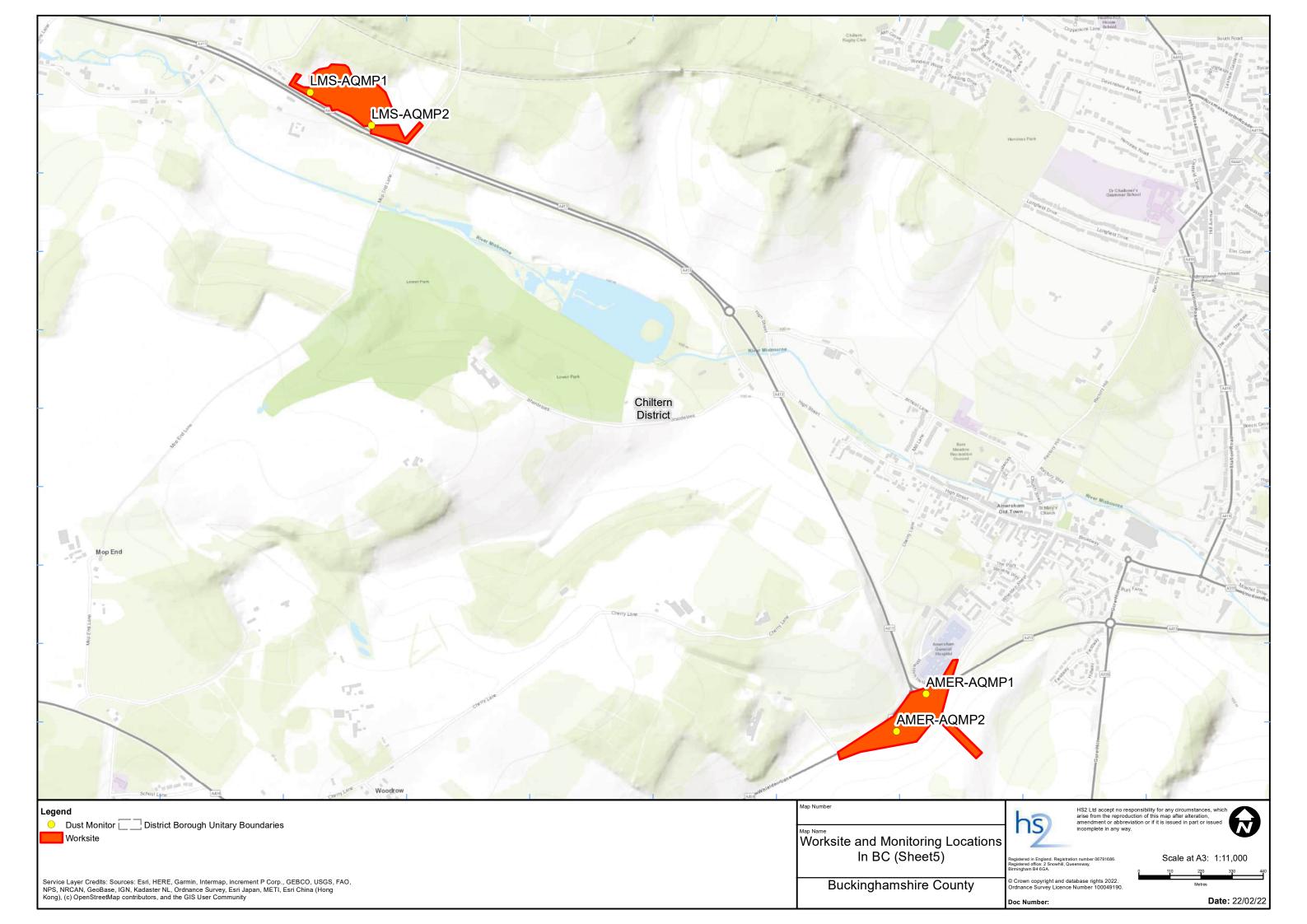
Figures 1-7: Worksite and Monitoring locations within BC

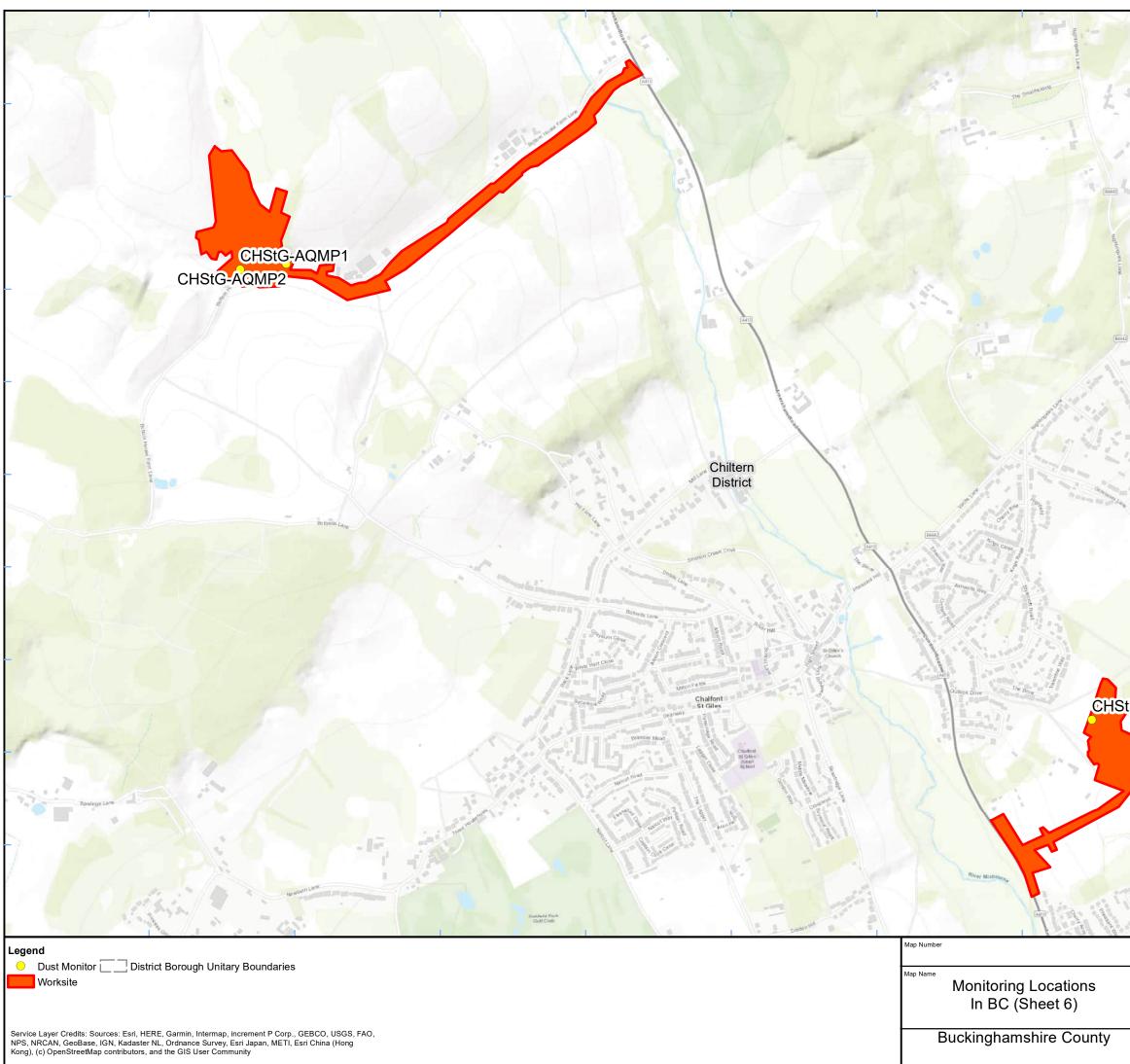




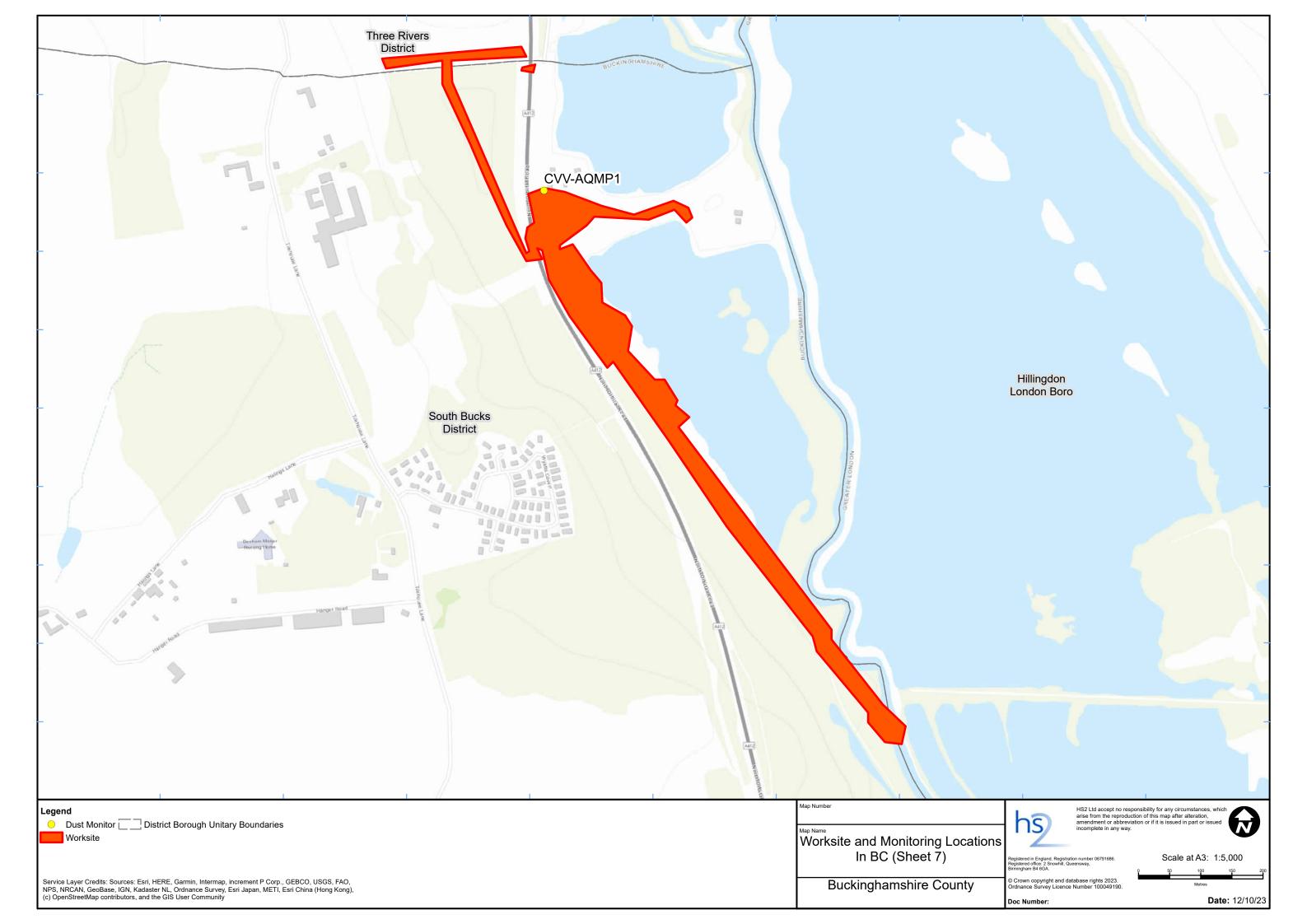








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# **Appendix B – Dust Monitoring Results**

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 <sub>10</sub> concentration (µg/m³)	Minimum 1-hour PM <sub>10</sub> concentration (µg/m³)	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	м	Yes	No	8.6	1.0	56.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	7.6	1.0	61.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	8.7	1.0	69.0	0	100.0
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	9.1	1.0	159.0	0	99.7
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	8.9	1.0	173.0	0	98.5
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	8.1	1.0	59.0	0	95.7
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	8.6	1.0	68.0	0	99.6
LMS-AQMP1	493190, 198848	On the south-west of the site	м	Yes	Yes	7.4	1.0	64.0	0	78.5
LMS-AQMP2	493407, 198731	On the south-east of the site	м	Yes	Yes	7.7	1.0	55.0	0	100.0
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	м	Yes	Yes	8.7	1.0	67.0	0	100.0

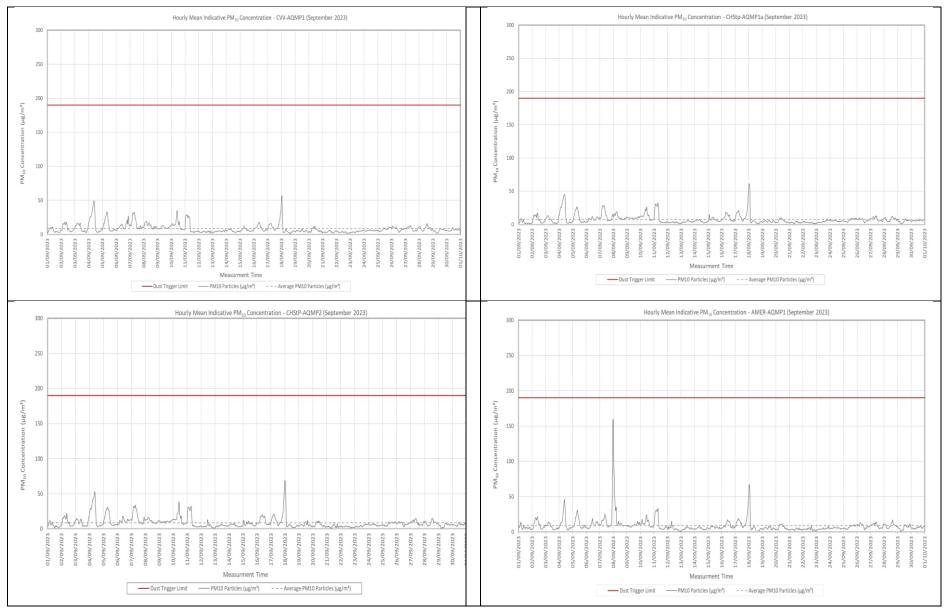
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM <sub>10</sub> concentration (µg/m³)	Minimum 1-hour PM <sub>10</sub> concentration (µg/m³)	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	М	Yes	Yes	8.5	1.0	64.0	0	88.1
NP-AQMP1	490069, 202008	North Portal Site Entrance	м	Yes	Yes	96.8	1.0	4371.0	21	97.6
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	8.5	1.0	55.0	0	100.0
School End – Dust	463666, 230049	School End, Chetwode	м	Yes	Yes	9.3	1.0	59.0	0	99.9
Potter Rows – Dust	490075, 202502	Potters Row, South Heath	м	Yes	Yes	-	-	-	-	-
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	м	Yes	Yes	-	-	-	-	-
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	м	Yes	Yes	8.3	1.0	64.0	0	99.7
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	м	Yes	Yes	8.6	1.0	71.0	0	80.8
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	8.6	1.0	100.0	0	75.8
Chetwode/Hermitage – Dust	463936, 229521	Hermitage, Chetwode	м	Yes	Yes	9.0	1.0	57.0	0	100.0
Glebe House - Dust	480475, 212560	A418 Aylesbury	м	Yes	Yes	7.6	1.0	53.0	0	76.9
Turweston North - Dust	460439 , 237140	Turweston, Buckinghamshire	м	Yes	Yes	7.8	1.0	51.0	0	99.6
FCC - Dust	469042 , 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	9.1	1.0	50.0	0	99.9

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 <sub>10</sub> concentration (μg/m³)	Minimum 1-hour PM <sub>10</sub> concentration (µg/m³)	Maximum 1-hour PM <sub>10</sub> concentration (μg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
Ellesborough Road - Dust	486458 , 207550	Ellesborough Road, Wendover	М	Yes	Yes	8.3	1.0	67.0	0	61.7
Nash Lee Road - Dust	484766 , 208782	Nash Lee Lane (west)	М	Yes	Yes	21.4	1.0	923.0	12	96.3
Nash Lee Lane - Dust	485069 , 208793	Nash Lee Lane (east)	М	Yes	Yes	8.1	1.0	65.0	0	91.8
Bacombe Lane – Dust	486528 , 207217	Bacombe Lane, Wendover	М	Yes	Yes	8.4	1.0	68.0	0	97.1
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	9.2	1.0	72.0	0	95.7
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	8.7	1.0	121.0	0	100.0
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	8.7	1.0	105.0	0	85.4
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	М	Yes	Yes	8.4	1.0	120.0	0	88.9
Grove Farm	486957, 206908	Grove Farm, London Road, Wendover	М	Yes	Yes	9.0	1.0	73.0	0	100.0
Marsh Lane	482445, 209392	Marsh Lane, North Lee.	М	Yes	Yes	8.4	1.0	54.0	0	100.0

#### Table 2: Summary of exceedances during period (September 2023)

Monitoring Site ID	Period of trigger alert & Concentration	Investigation	Outcomes / Resolution / Remedial measures
	recorded		implemented
NP-AQMP1	09/09/2023   22:00 – 22:59; 2348 µg/m³   23/09/23   04:00 – 04:59; 1727 µg/m³   05:00 – 05:59; 1717 µg/m³   06:00 – 06:59; 1911 µg/m³   07:00 – 07:59; 2317 µg/m³   08:00 – 08:59; 2424 µg/m³   09:00 – 09:59; 2450 µg/m³   10:00 – 10:59; 2558 µg/m³   11:00 – 11:59; 2921 µg/m³   12:00 – 12:59; 3129 µg/m³   13:00 – 13:59; 3260 µg/m³   14:00 – 14:59; 3511 µg/m³   15:00 – 15:59; 3839 µg/m³   16:00 – 16:59; 3927 µg/m³   17:00 – 17:59; 4243 µg/m³   18:00 – 18:59; 4371 µg/m³   19:00 – 19:59; 3591 µg/m³   20:00 – 20:59; 3015 µg/m³   21:00 – 21:59; 3329 µg/m³   22:00 – 22:59; 3380 µg/m³   23:00 – 23:59; 1974 µg/m³	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 measures at present.
	14/09/23 18:00 – 18:59; 890 μg m <sup>-3</sup> 19:00 –19:59; 923 μg m <sup>-3</sup> 20:00 – 20:59; 521 μg m <sup>-3</sup>	Out of working hours	NA
Nash Lee Road	14/09/23 09:00 – 09:59; 551 μg m <sup>-3</sup> 10:00 – 10:59; 608 μg m <sup>-3</sup> 11:00 – 11:59; 614 μg m <sup>-3</sup> 12:00 – 12:59; 614 μg m <sup>-3</sup> 13:00 – 13:59; 616 μg m <sup>-3</sup> 14:00 – 14:59; 639 μg m <sup>-3</sup>	Horace INC16876	Investigation of Incident concluded not related to HS2 Works

Monitoring Site ID	Period of trigger alert & Concentration	Investigation	Outcomes / Resolution / Remedial measures
	recorded		implemented
	15:00 – 15:59; 737 μg m <sup>-3</sup> 16:00 – 16:59; 804 μg m <sup>-3</sup> 17:00 – 17:59; 837 μg m <sup>-3</sup>		



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

