April 202**3**

HS2

Air Quality and Dust Monitoring Monthly Report — April 2023 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 2023.
- 1.1.2 Figures 1 7 in Appendix A presents the current worksites together with the dust monitoring locations for April 2023.
- 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:

North Chilterns Area

Small Dean Viaduct

- Piling & grouting
- Utilities installation
- Stockpile shifting
- Haul road installation
- Surface water management
- Site hoarding installation
- TVCB installation on the side of the A413
- TVCB installation around the security plaza
- Piling platform reinstatement
- Ground investigation

Grove Farm

- Temporary Surface water management
- V-ditch works
- Installation of protection slabs and backfill

Wendover Green Tunnel - Bacombe Lane

- Diversion of Bridleway
- Topsoil stripping

Nash Lee Road

- Drainage installations
- Stockpiling of Class 1A1 through the plant crossing

Nash Lee Lane, Wendover Town, Ellesborough Road

Self-delivery:

- Steel fixing and shuttering the east and west ballast walls at Ellesborough Road Diversion
- Continuing the construction of the Ellesborugh Road east and west embankments.
- Installing drainage on the Ellesborough road eastern and western embankments
- Backfilling behind the eastern and western ballast walls at the Nash Lee temporary bridge
- Continued to installing kerbs for the Nash Lee Temporary Diversion to tie into the temporary Nash Lee bridge and island
- Continued to excavate v-ditches for connect WGT surface water management

Subcontractors:

- Blackwells topsoil and subsoil stripping the Wendover Green Tunnel
- Blackwells constructing temporary platform for Bauer Keller slabs
- Fugro installing I&M for the Wendover Green Tunnel
- Clancy cable pulling and jointing for the 1205T diversion#
- Bauer Keller mobilization. Bauer Keller steel fixing and shuttering first slab
- MSF installed signage for the Nash Lee Temporary Diversion

Hunts Green and Grimms Ditch

• No works were undertaken in the area of the Hunts Green and Grimms Ditch monitoring station.

South Heath and Potters Row

- Surface Water Management System pond installation
- North portal excavation
- Stockpiles hydroseeding

Chesham Lane and Wendover Bus 55

- Compound installation works
- Installation of pedestrian footbridge

Calvert Area

Station Road

No works within 500m of monitor.

Woodlands Farm

- River Ray Culvert construction of headwalls and waterproofing
- Woodlands Culvert waterproofing of precast units and construction of headwalls
- Mass haulage of aggregate
- Edgcott Road Overbridge no works

FCC / School Hill

- Secant Retaining Wall continuous fly augering (CFA) piling works
- Mass haulage of aggregate
- Shepherds Furze Culvert dig and replace (D&R) under structure
- 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
- IMD Earthworks
- Bat mitigation structure
- Sheephouse Wood North Culvert
- Greatmoor No. 3 culvert
- GUN28 Overbridge
- Doddershall No. 6 culvert

• Doddershall No. 7 culvert

Twyford to Greatworth

Turweston North

- Movement of 6c material over the river using a long reach excavator
- Sheet piling
- Temporary slab crossing construction
- Dewatering and drainage maintenance
- Water pipe installation
- 1A1 deliveries

Aylesbury

Moat Farm

- Stoke Mandeville Bypass piling
- PRA Overbridge piling
- Siltbuster setup

Westfield

- PRA Overbridge Piling
- Overhead utility diversion

Oat Close

No works during this period

Glebe House

- A418 Overbridge Piling
- Piling platform works

Meadoway

- A418 Overbridge piling
- Piling platform works

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;
- North Abutment Works: yard supporting activities and FRC works;
- 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;
- Tunnel Connections; and
- Basement Construction: excavation to B1 formation levels, headhouse basement internals and demolition of D-wall.

Chalfont St Giles Vent Shaft

- General Site Activities;
- Road Maintenance Works;
- Connections to Tunnels: concrete floors;
- Basement Construction: excavate to formations and basement internals & headhouse concrete works; and
- Shaft Internal Structure: RC walls and slabs.

Little Missenden Vent Shaft

- General site activity;
- Internal Structures Core Slip-form: slipform;
- Internal Structures; remaining walls and slabs;
- Internal Structures: remaining walls and slabs; and
- Small basement construction; excavation to B1 formation level and 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.

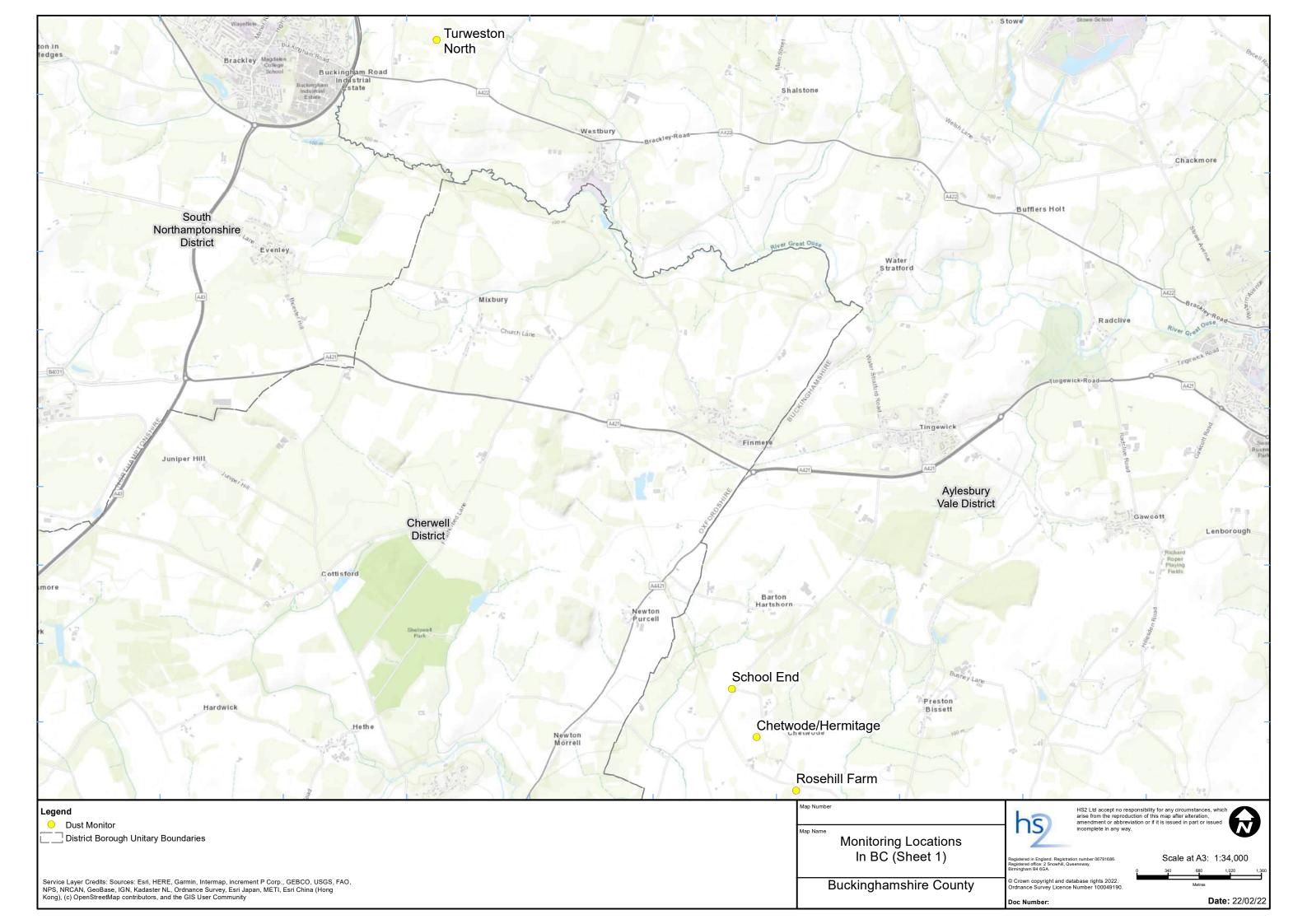
North Portal work site

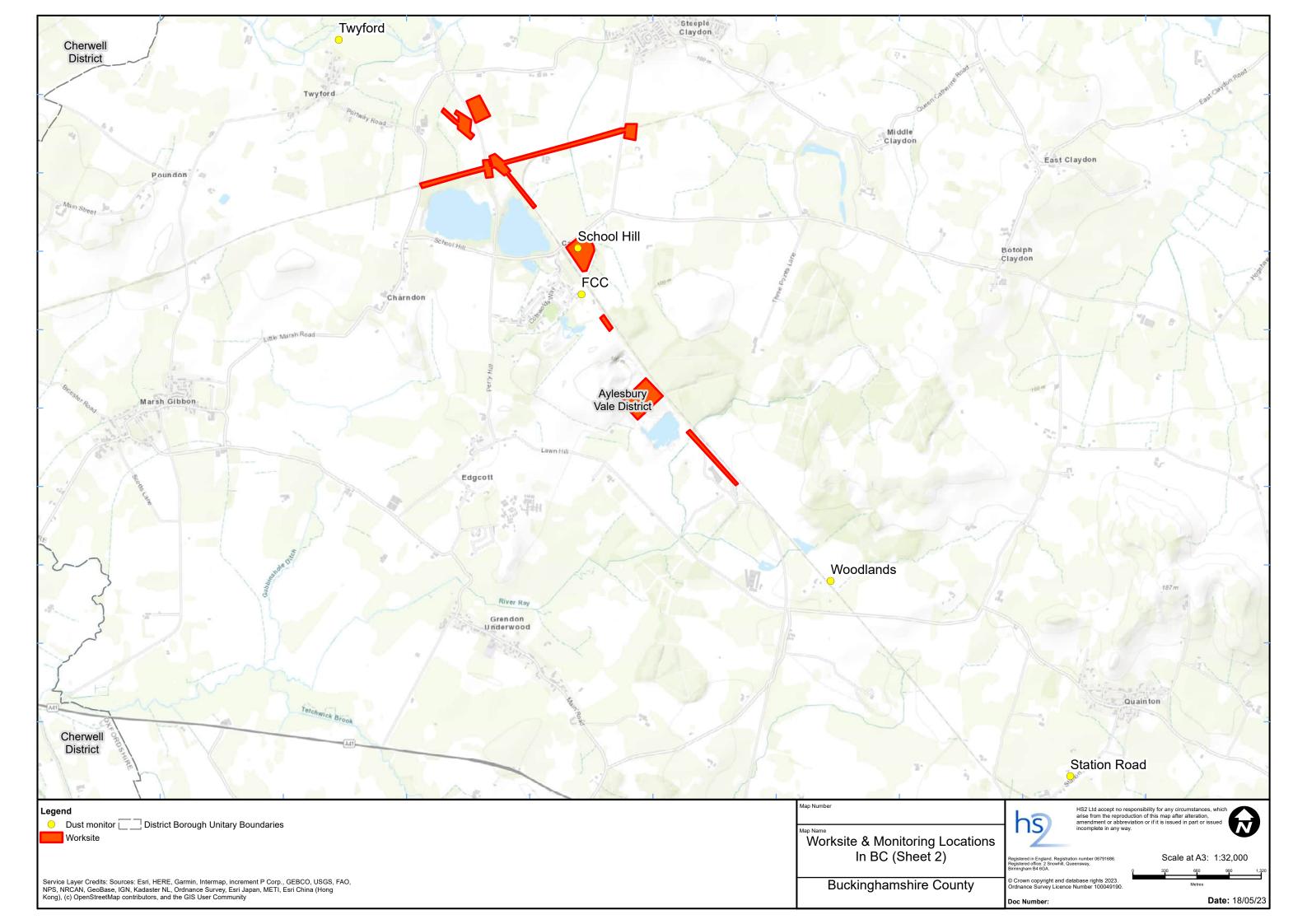
- Access Road: drainage and services, scrape formation, hardstanding and kerbing, asphalt and signage;
- Piling Platform Area 1: traffic management and temporary access from Firth Hill Road;
- North Portal Compound: general plant;
- North Portal Road: general plant;
- North-Portal Tracks Platform: scraping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

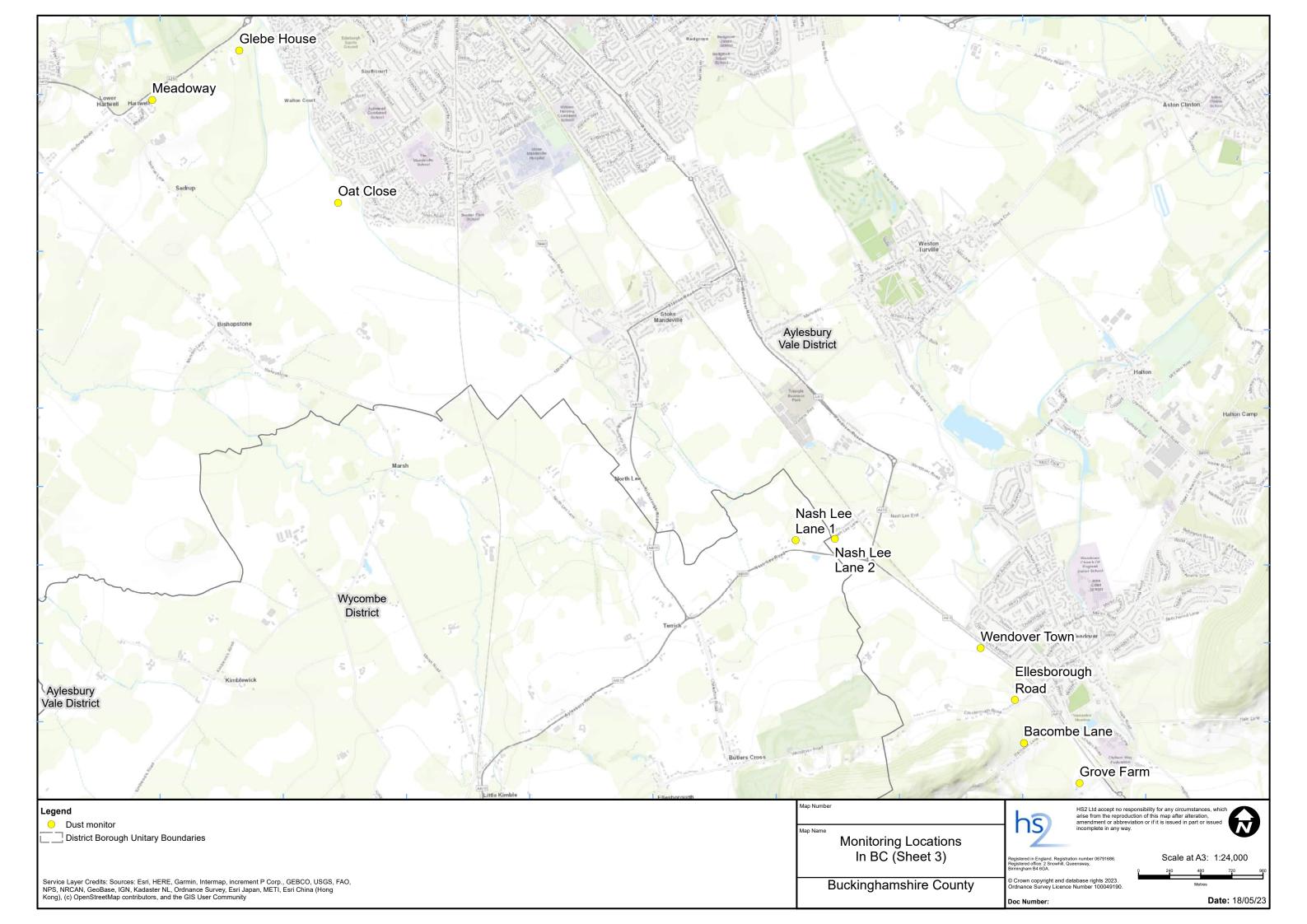
- Portal Drainage: excavation / drainage installation / backfilling; and
- Porous Portal Structure: RC works and concrete pours.
- 1.1.5 The trigger level for PM_{10} concentrations of 190 μ g/m³, over a 1-hour period, in accordance with the updated guidance document 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (October 2018)' has been applied.
- 1.1.6 Thirty-eight (38) dust monitors are installed at worksites, where works are currently underway. These sites returned a medium dust risk rating.
- 1.1.7 Dust monitoring locations and results are presented in Appendix B, Table 1, together with a line chart of monthly data from the dust monitors 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.
- 1.1.8 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 due to many of them being retrieved from site for lab calibration (no data recorded at South Heath and Grimms Ditch for this reason). CHStG-AQMP1 has low data capture due to a faulty controller/modem and a data transfer issue.
- 1.1.10 No (0) complaints were received during the monitoring period (April 2023).

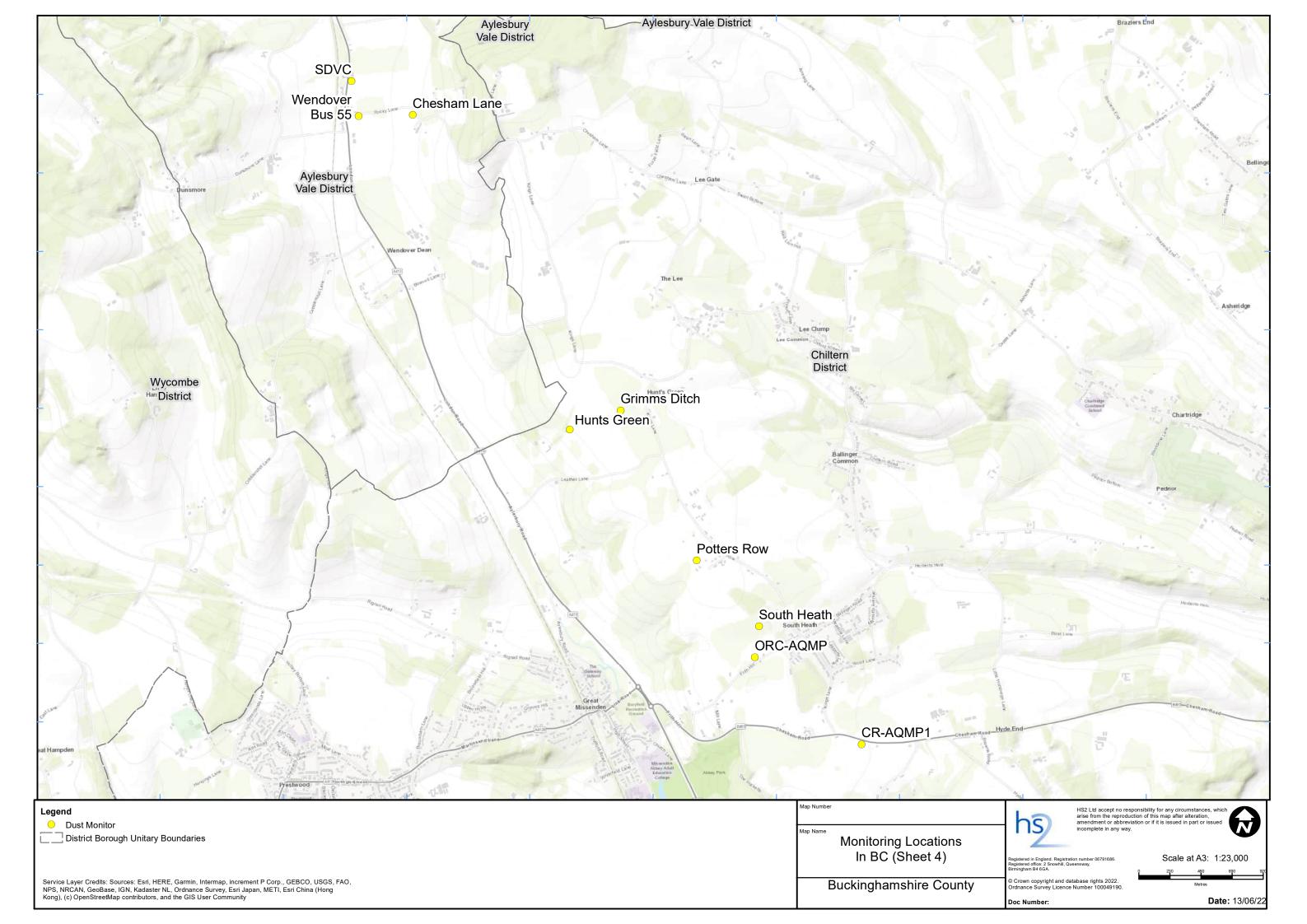
Appendix A - Monitoring Locations

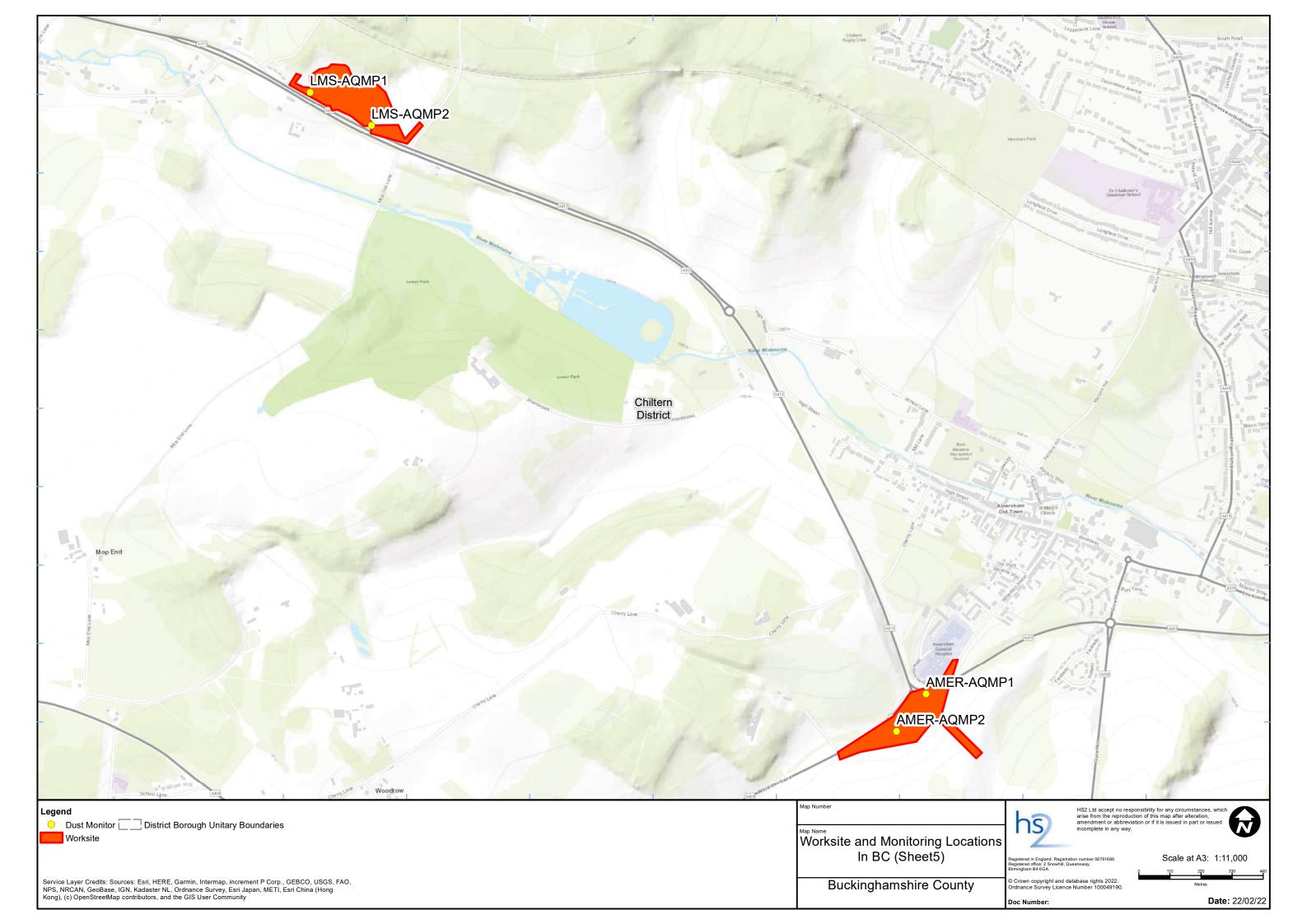
Figures 1-7: Worksite and Monitoring locations within BC

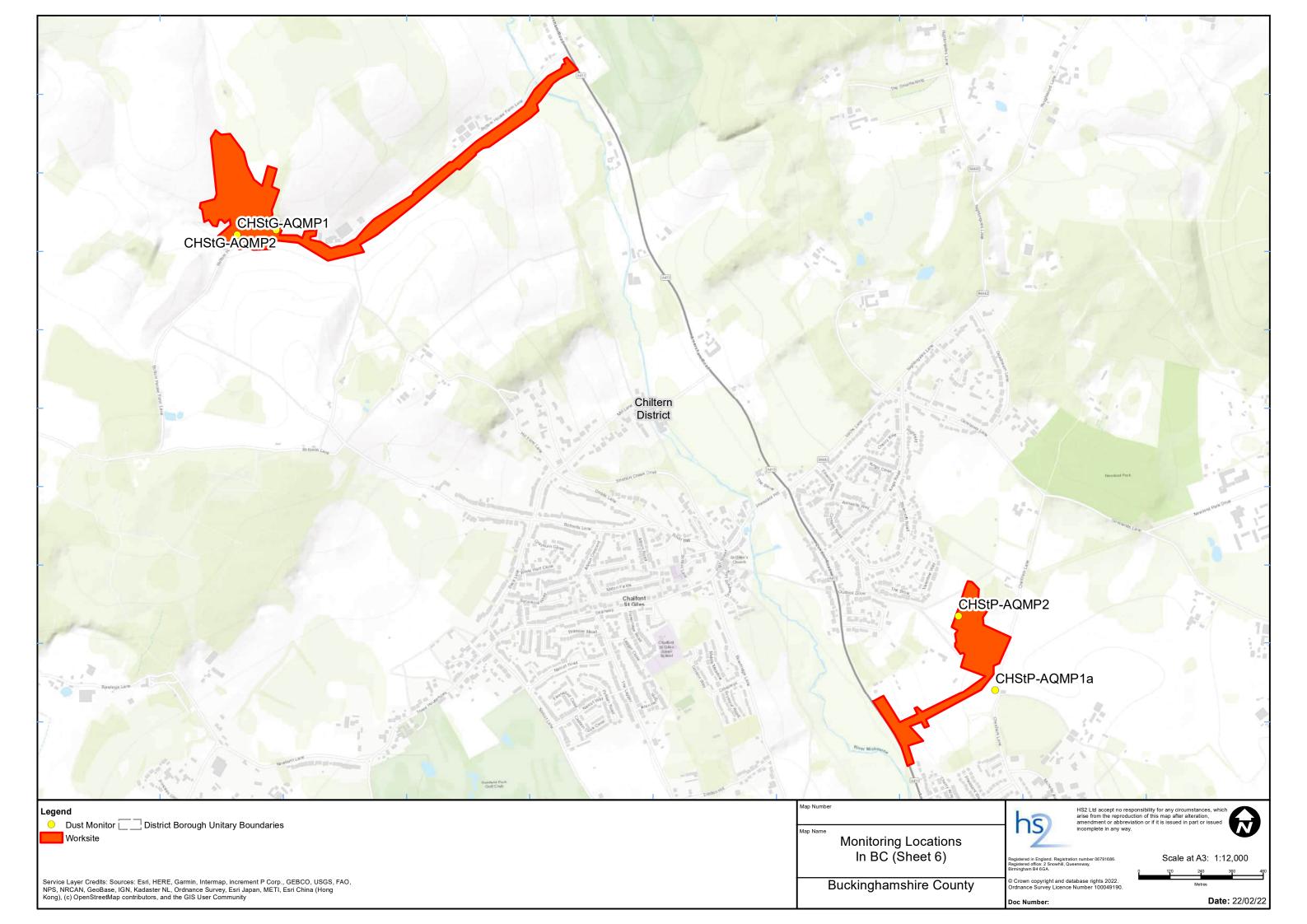


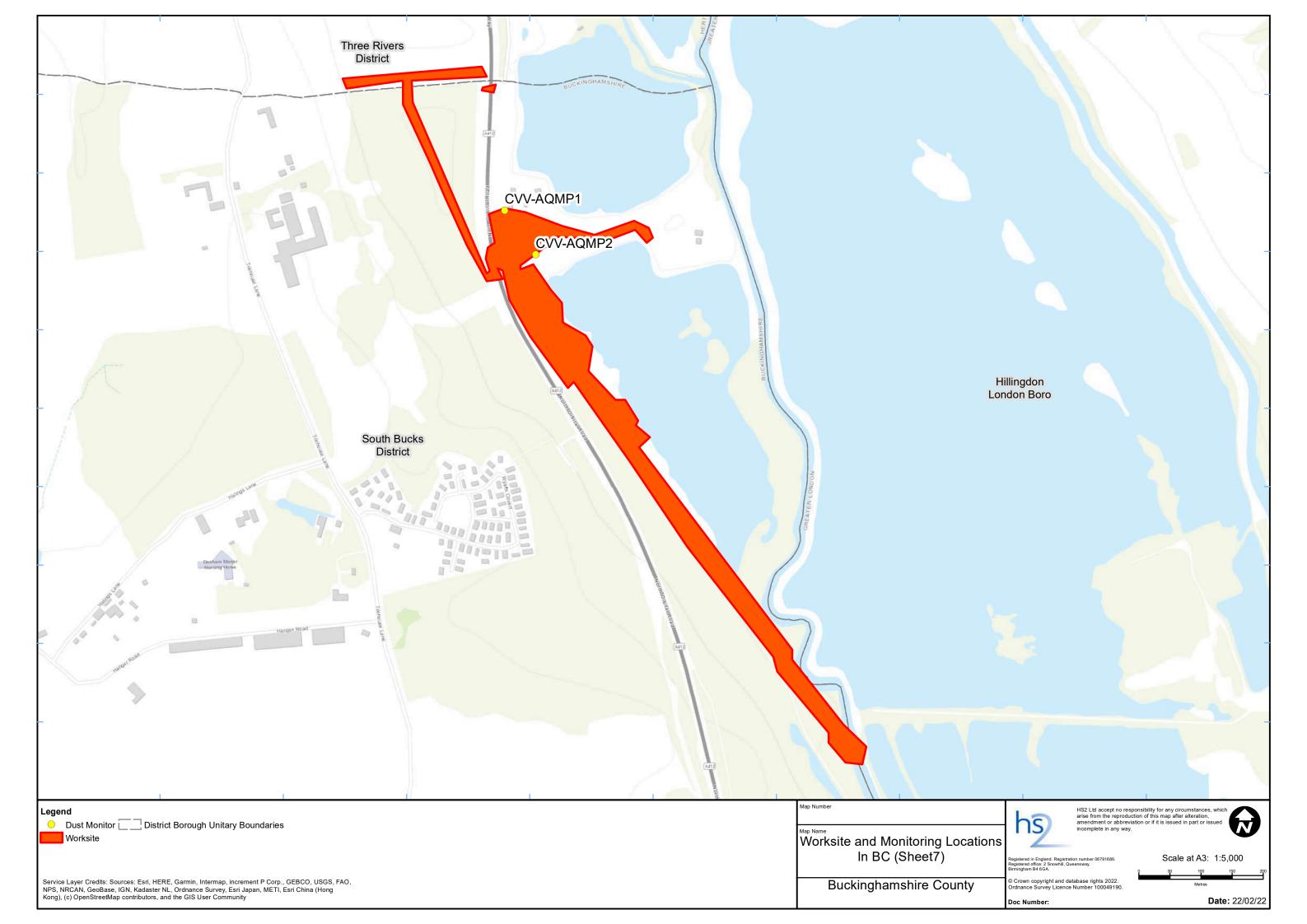












Appendix B - Dust Monitoring Results

Table 1: Dust monitoring locations and April 2023 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/m ³	1-hour data capture (%)
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	9.4	1.0	58.0	0	96.1
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	8.2	1.0	66.0	0	44.7
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	7.1	0.6	27.0	7	44.7
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	-	-	-	-	-
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	10.8	1.0	160.0	0	99.9
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	-	-	-	-	-
Hunts Green – Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	8.5	1.0	67.0	0	84.7
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	11.0	1.0	451.0	3	99.6
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	9.9	1.0	138.0	0	99.7
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	6.2	1.0	13.0	0	12.9
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	9.0	1.0	47.0	0	99.7
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	8.9	1.0	104.0	0	99.9
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	7.8	1.0	54.0	0	44.7

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/m ³	1-hour data capture (%)
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	7.5	1.0	48.0	0	43.3
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	9.1	1.0	47.0	0	99.9
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	8.3	1.0	42.0	0	38.3
Ellesborough Road - Dust	486458, 207550	Ellesborough Road, Wendover	М	Yes	Yes	9.2	1.0	51.0	0	83.9
Nash Lee Road - Dust	484766, 208782	Nash Lee Lane (west)	М	Yes	Yes	9.3	1.0	52.0	0	99.7
Nash Lee Lane - Dust	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	9.0	1.0	51.0	0	99.7
Bacombe Lane – Dust	486528, 207217	Bacombe Lane, Wendover	М	Yes	Yes	8.3	1.0	53.0	0	99.6
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	9.9	1.0	67.0	0	99.9
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	8.0	1.0	45.0	0	38.8
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	7.9	1.0	39.0	0	55.4
Woodlands - Dust	471603, 221315	Station Rd, Quainton, Woodlands Farmhouse	М	Yes	Yes	9.0	1.0	51.0	0	99.4
Grove Farm	486957, 206908	Grove Farm, London Road, Wendover	M	Yes	Yes	10.0	1.0	120.0	0	99.7
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	М	Yes	Yes	9.1	1.0	66.0	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 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/m ³	1-hour data capture (%)
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	9.6	1.0	71.0	0	97.1
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	М	Yes	Yes	8.8	1.0	52.0	0	98.6
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	9.4	1.0	61.0	0	100.0
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	M	Yes	Yes	9.1	1.0	63.0	0	98.3
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	8.9	1.0	64.0	0	98.6
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	9.1	1.0	54.0	0	36.1
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	8.5	1.0	51.0	0	100.0
LMS-AQMP1	493190, 198848	On the south-west of the site	M	Yes	Yes	8.8	1.0	64.0	0	100.0
LMS-AQMP2	493407, 198731	On the south-east of the site	M	Yes	Yes	9.1	1.0	71.0	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 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/m ³	1-hour data capture (%)
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	9.2	1.0	66.0	0	98.8
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	М	Yes	Yes	9.0	1.0	56.0	0	100.0
NP-AQMP1	490069, 202008	North Portal Site Entrance	M	Yes	Yes	9.0	1.0	66.0	0	100.0

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

Monitoring Site ID	Period of trigger alert & Concentration	Investigation	Outcomes / Resolution / Remedial measures implemented		
	recorded (µg m ⁻³				
Chesham Lane – Dust	08/04/23 16:00–16:59; 451 μg/m ⁻³ 17:00–17:59; 201 μg/m ⁻³	This was the easter weekend and no works were undertaken during the period	N/A		
	09/04/23 16:00–16:59; 191 μg/m ⁻³	This was the easter weekend and no works were undertaken during the period	N/A		

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

