May 2022

HS2

Air Quality and Dust Monitoring Monthly Report - May 2022 **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) area during May 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for May 2022.
- 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

- South Heath Earthworks;
- Great Missenden Compound;
- Mulberry Park Demolition Works;
- Durham Farm Demolition and De-vegetation Works;
- Surface Water Management Works (Attenuation ponds);
- Small Dean Compound;
- · Sheet Piling;
- Wendover Compound;
- Wendover Batching Plant; and
- Nash Lee Road Diversion.

Calvert Area

- East West Rail Overbridge: FRC works including rebar and formwork fixing and concrete pouring
- Charndon Lodge Underbridge: FRC works including rebar and formwork fixing and concrete pouring
- Perry Hill Overbridge: Piling, pilecap excavation, pilecap blinding, FRC works including rebar fixing, formwork installation and concreting
- Addison Road Overbridge: FRC works including concreting of the pilecaps, fixing of rebar and formwork for concrete support columns.
- OXD Culverts: Installation of culvert units, waterproofing, blinding and D&R.
- GUN28 Overbridge: East and west abutment D&R and build-up of the piling platform.
- OXD Line: removal of existing embankment, 6C starter layer, D&R and 1A1 upper embankment.

- Hills Farm: ongoing stockpiling of imported material
- MCJ Line: Removal of existing ballast embankment, pre-earthworks drainage and removal of existing culverts.
- Gawcott Road: north approach cutting and road realignment.
- West Street Temporary Diversion: top-soil stripping, excavation and backfilling, drainage and de-vegetation
- West Street Utility Diversion: trenching and pipe laying
- Creighton Road: Civil works incl. trenching and concrete chambers
- Quainton Utility Diversions: UTX1 concrete shaft sinking, trenching and pipe laying.

Twyford to Greatworth

- School End/Hermitage/Old Stable Cottage: compound development, stone deliveries, topsoil stripping, Drainage, pond maintenance, I&M, Stockpiling, Topsoil Stripping, Old stable cottage demolition.
- Twyford: Access Road, Haul Road, drainage/culvert.
- Routewide Vegetation clearance, access road, drainage, and ponds maintenance along SAR from ch 86;700 to 85;000.
- Turweston: access road, topsoil stripping, compound maintenance, drainage/ponds, bulk excavation, stockpiling, and slab crossing.

Aylesbury

<u>Meadoway</u>

- Construction of the A418 Security Plaza access road
- Earthworks (Aylesbury North Cutting excavation, stockpile construction)

Oat Close

• Earthworks (Aylesbury Embankment excavation, stockpile construction)

Glebe House

Earthworks (Aylesbury North Cutting excavation, stockpile construction)

Moat Farm

- Earthworks (Aylesbury South Cutting excavation, stockpile construction)
- PRA Overbridge piling works
- PRA Rail Deliveries maintenance of stockpile and access road
- PRA Rail Deliveries by train and unloading, transport to stockpile area.

Westfield

- Earthworks (Aylesbury South Cutting excavation, stockpiling)
- Overbridge piling works
- PRA Rail Deliveries maintenance of stockpile and access road
- PRA Rail Deliveries by train and unloading, transport to stockpile area

The Colne Valley Viaduct (CVV) LTP1

- Jetty Piling: piling plant form, platforms, support plant and compound;
- Cofferdam Sheet Piling: piling plant and support plant;
- Permanent Main Piling Works: boring pile, de-sanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pile break-down to prepare pile surface, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- North Embankment Compound: compound operation;
- Ground Investigation Works: GI works and overwater GI works;
- DWSC Compound: compound operation;
- River Colne Realignment; removal of RC Crossing;
- · Core Drilling of Concrete;
- Pier Construction: standard piers(P54 -P29)– FRC works for pile cap and peir yard supporting activities, post tensioning of AFD legs and tower crane mob / demob;
- ATFS Duct Installation: site preparation, installation of ducts and earthworks
- Pumping Water Management from ch 25.900 to 29.500;
- Maintenance of the haul road from ch 25.900 to 29.500;
- Satellite welfares;
- · Generator farms;
- · Pile Trimming;
- SCS Material Storage;
- Fencing Finishing Works;
- Utility Diversion;
- Environmental Maintenance;
- Bentonite Farms: base slab construction, RC slab demolition, finish upstand walls and installation equipment;
- Fiber Crossing;
- Cofferdam Excavation; Dewatering, Waling Beams and Concrete Plugs;
- Utilities;
- Pier Construction;
- INNS River Colne to GUC and GUC to Harvil Road (removal);
- A412 Gas Crossing Emergency Dismantling; and
- Launching Girder and Deck Works.

Chalfont St Peter Vent Shaft

- General Plant;
- Basement Secant Piling Works: excavate & cut contiguous & secant piles;
- Road Maintenance Works;
- Reinforced Concrete Internal Structure: concrete walls and floors;

- Connections to Tunnels: demolition and reinforced concrete works; and
- Basement Construction: reinforced concrete capping beam and ground beams, excavation of capping beam and basement and waterproofing works.

Amersham Vent Shaft

- General Site Activity: general plant;
- Waterproofing;
- Basement Secant Pile Walls: secant piling, excavate and cut piles.
- Shaft Base Slab;
- Collar Construction;
- Small Basement Construction;
- Secondary lining; and
- Internal structures.

Chalfont St Giles Vent Shaft

- General Site Activity: general plant;
- Secant Piling: excavate and cut piles;
- Road Maintenance Works;
- Secondary Lining;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connections to tunnels: demolition and reinforced concrete works; and
- Basement Construction: reinforced concrete capping beam, excavation of capping beam, reinforced concrete ground beams and waterproofing works.

Little Missenden Vent Shaft

- General site activity: general plant;
- Dewatering;
- Base Slab: preparation works;
- Secant Piling;
- Collar construction before TBM crossing;
- Secondary lining;
- Small Basement Construction; and
- Stockpile Removal.

Chesham Road Vent Shaft

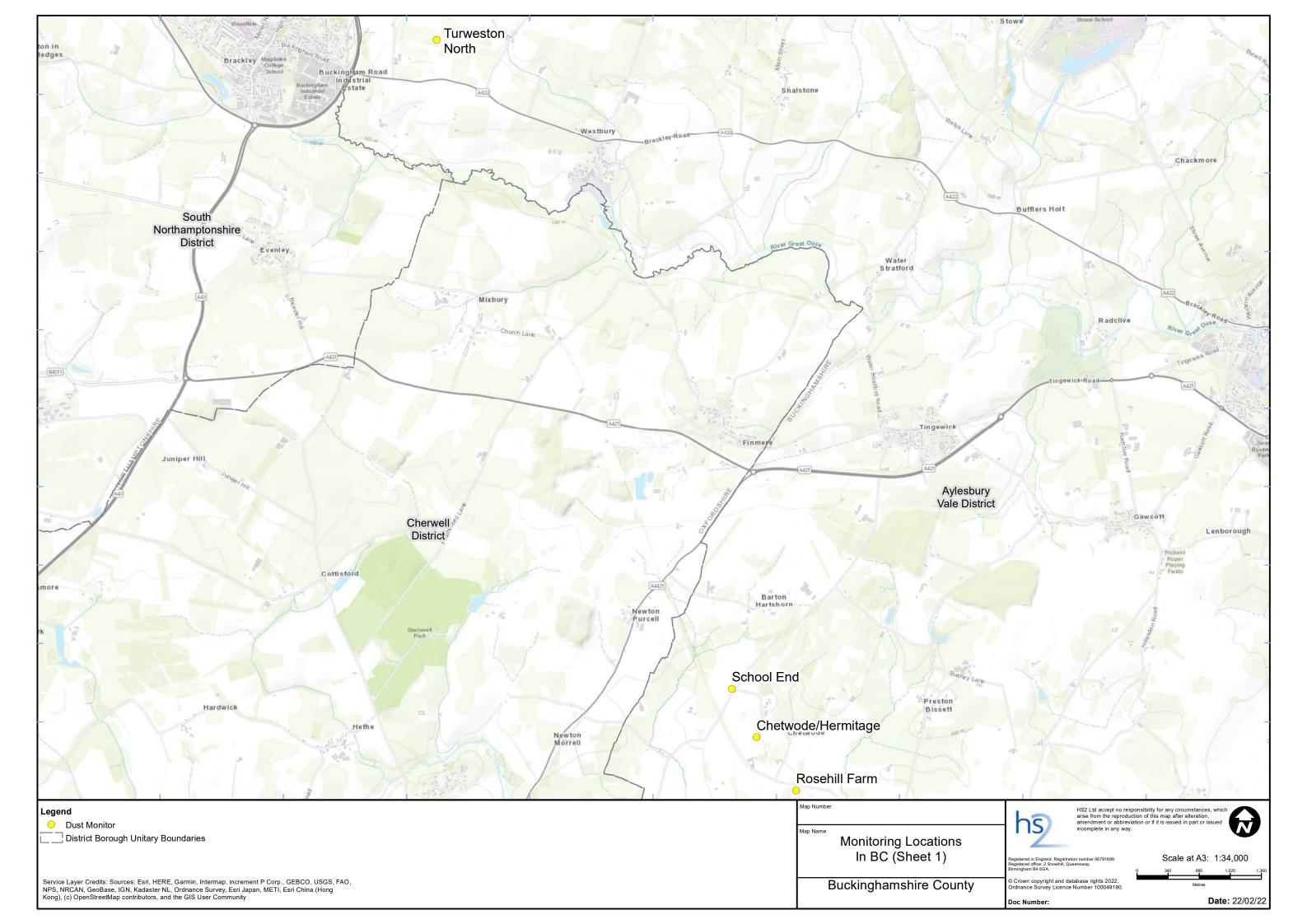
- General site activity: general compound power and muck-away; and
- Shaft construction using In-Situ Casson Method: concrete pour of shaft walls, sinking of shaft to formation level and lining base slab.

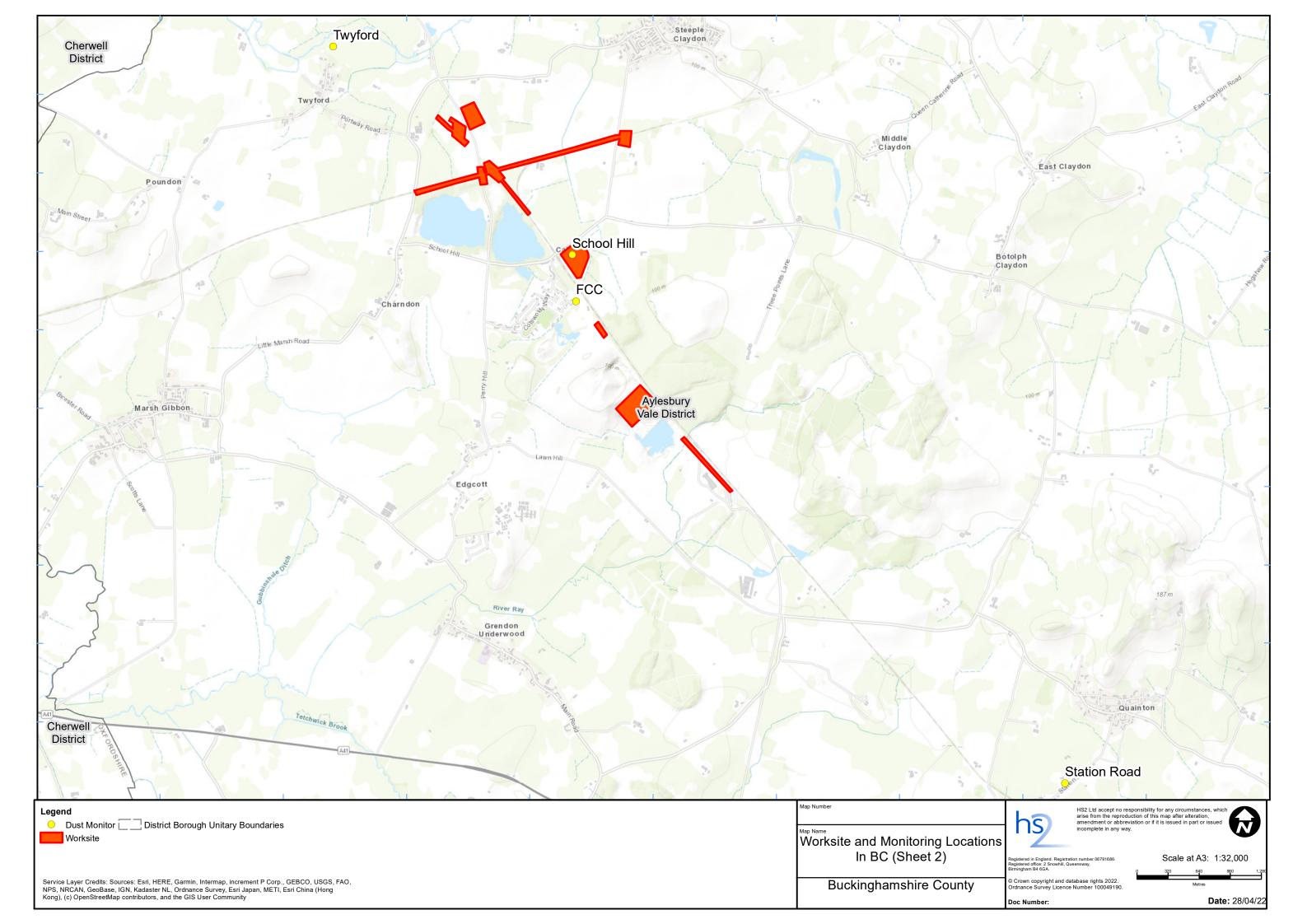
North Portal work site

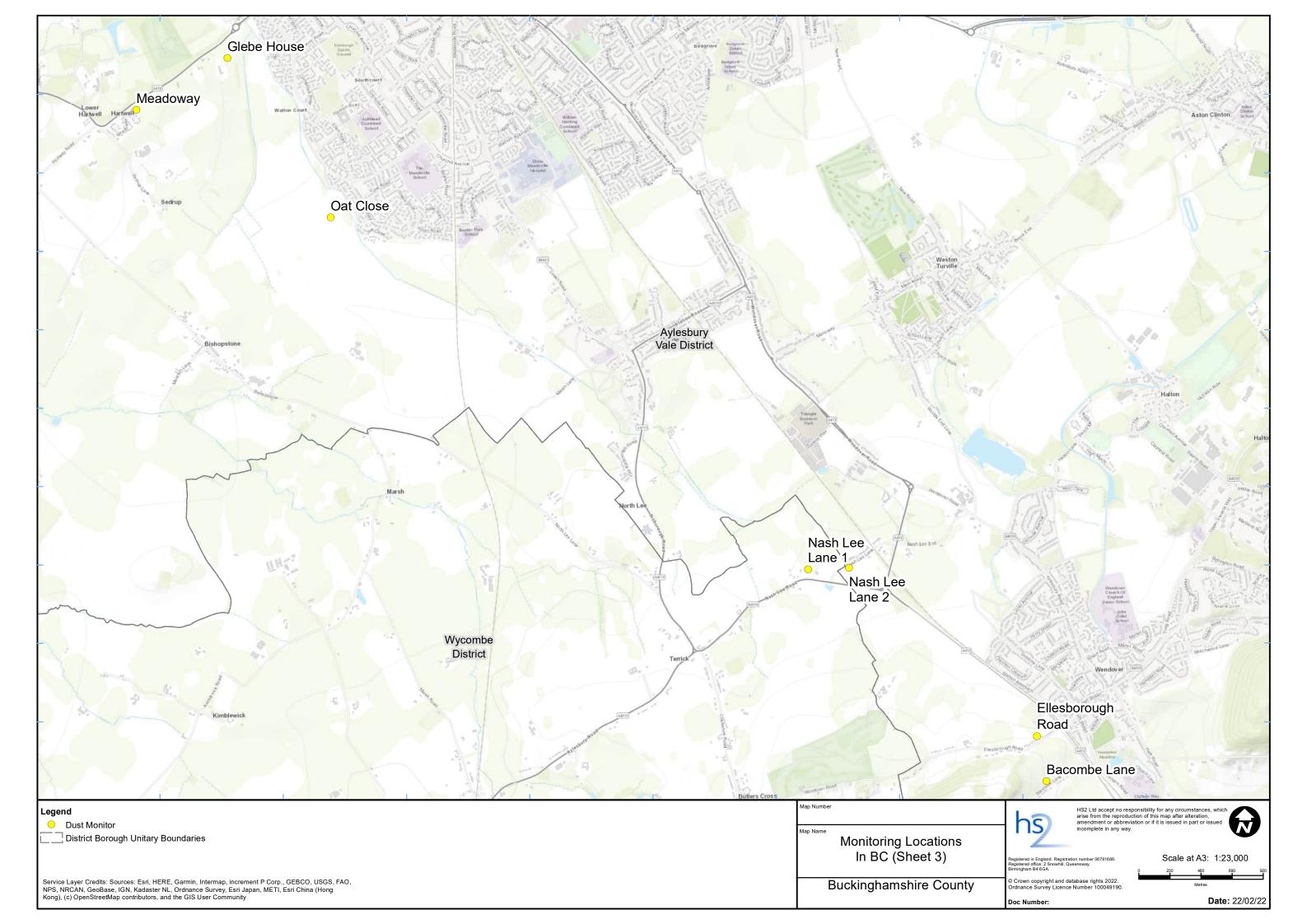
- Early Works: site fencing, mobilisation and site set-up;
- Temp. & Perm. Access Road: scrape formation, hardstanding, kerbing, drainage, services, asphalt and signage;
- Piling platform -Area 1: Cut & Fill, stabilisation, hardstanding, P1 Ducting and drainage;
- Piling platform -Area 2: P2 Scrape formation, stabilisation, hardstanding, P2 ducting and drainage;
- Temporary utilities: temporary water connection, temporary IT connection;
- North Portal Barrettes and Headwall: North Portal barrettes and headwall -Supporting Compound Plant (inside compound);
- North Portal Compound: general plant; and
- North Portal Barrettes and Headwall-Muck away
- 1.1.5 Thirty-four (34) 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 2022 are presented in Appendix B, Table 2, 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 (October 2018)' has been applied.
- 1.1.8 Data capture was below 90% for multiple monitors in May 2022 due to technical issues and/or loss of power.
- 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 reporting period (May 2022).

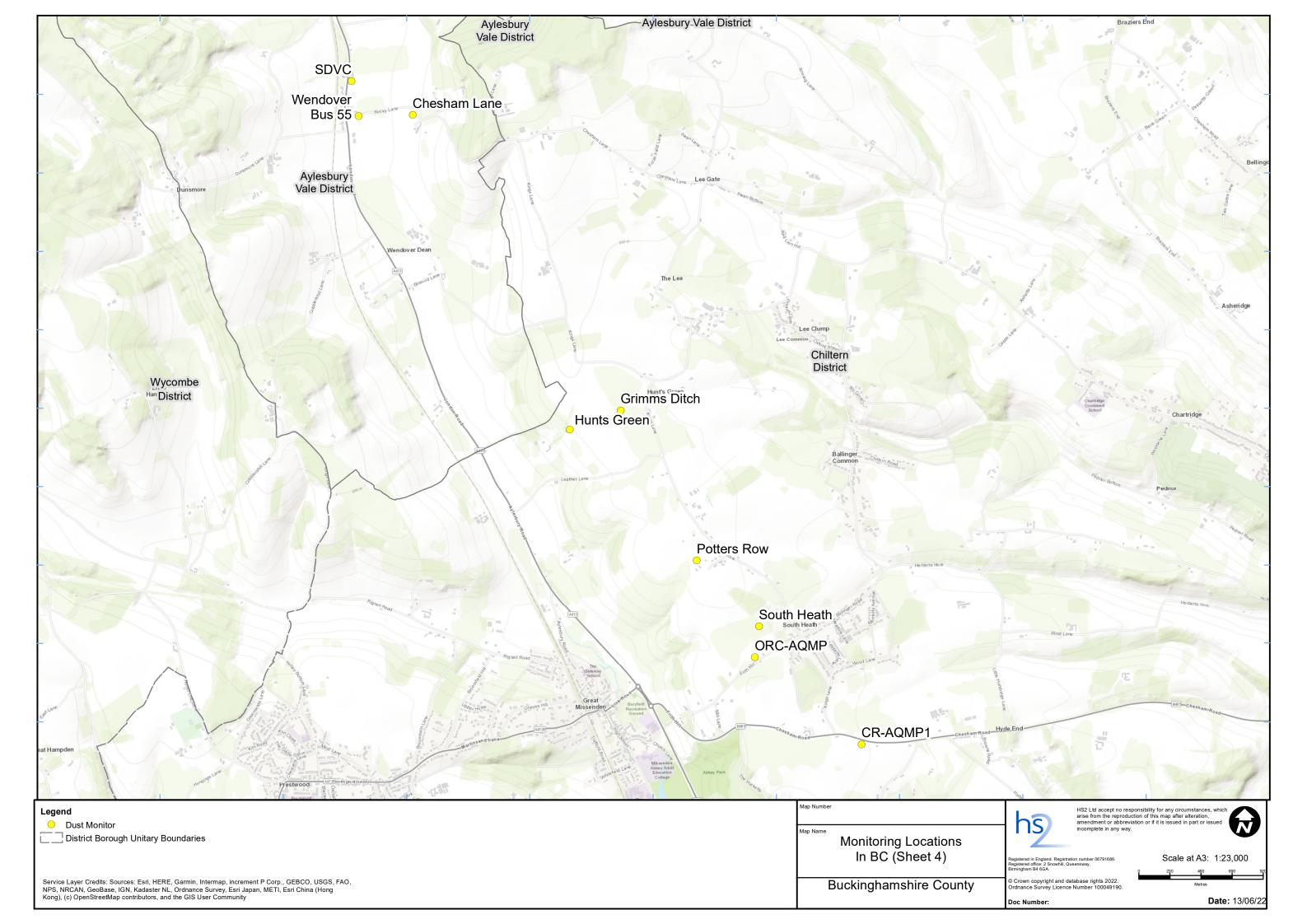
Appendix A - Worksite and Dust Monitoring Locations

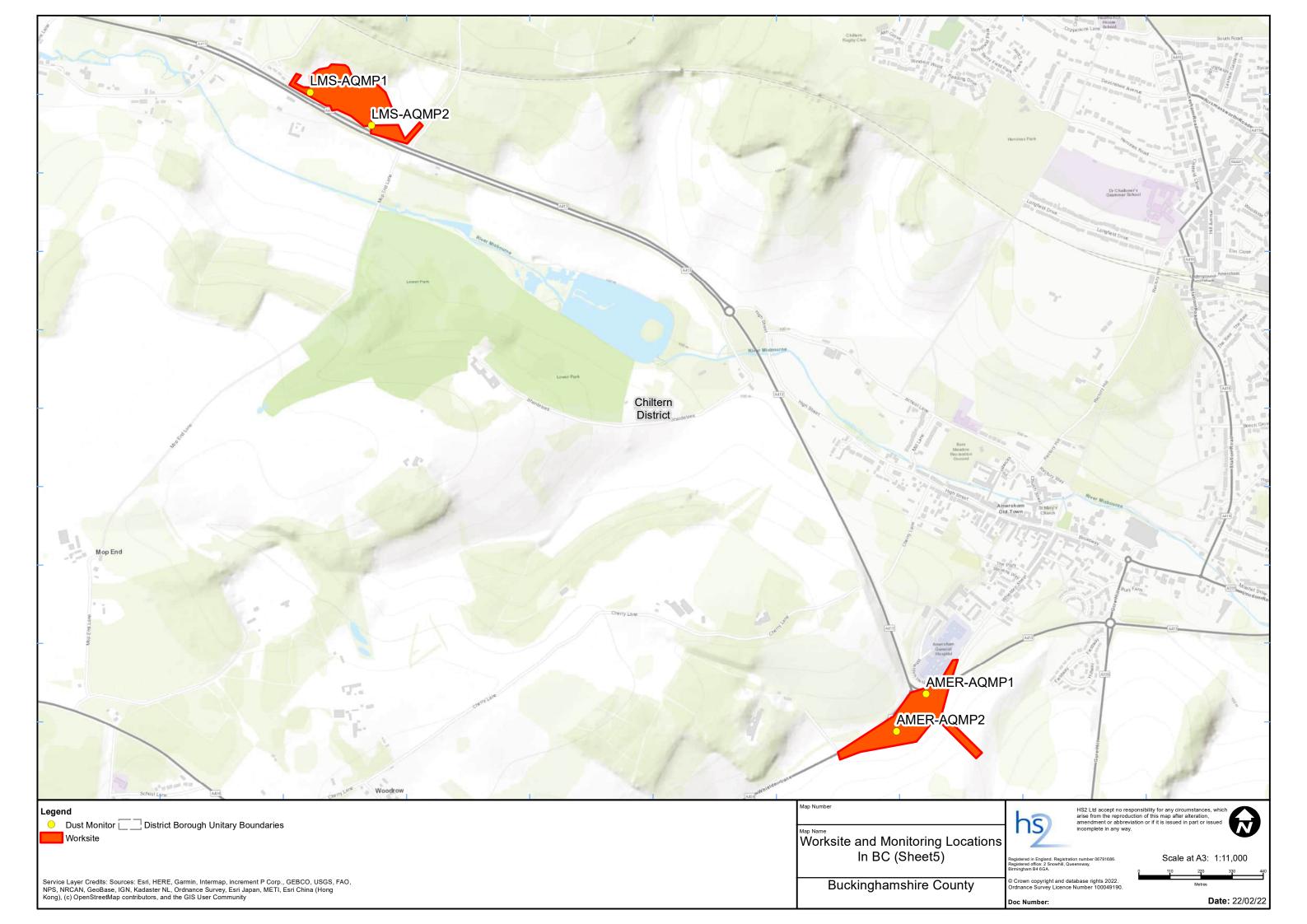
Figure 1 -7: Worksite and monitoring locations within the BC

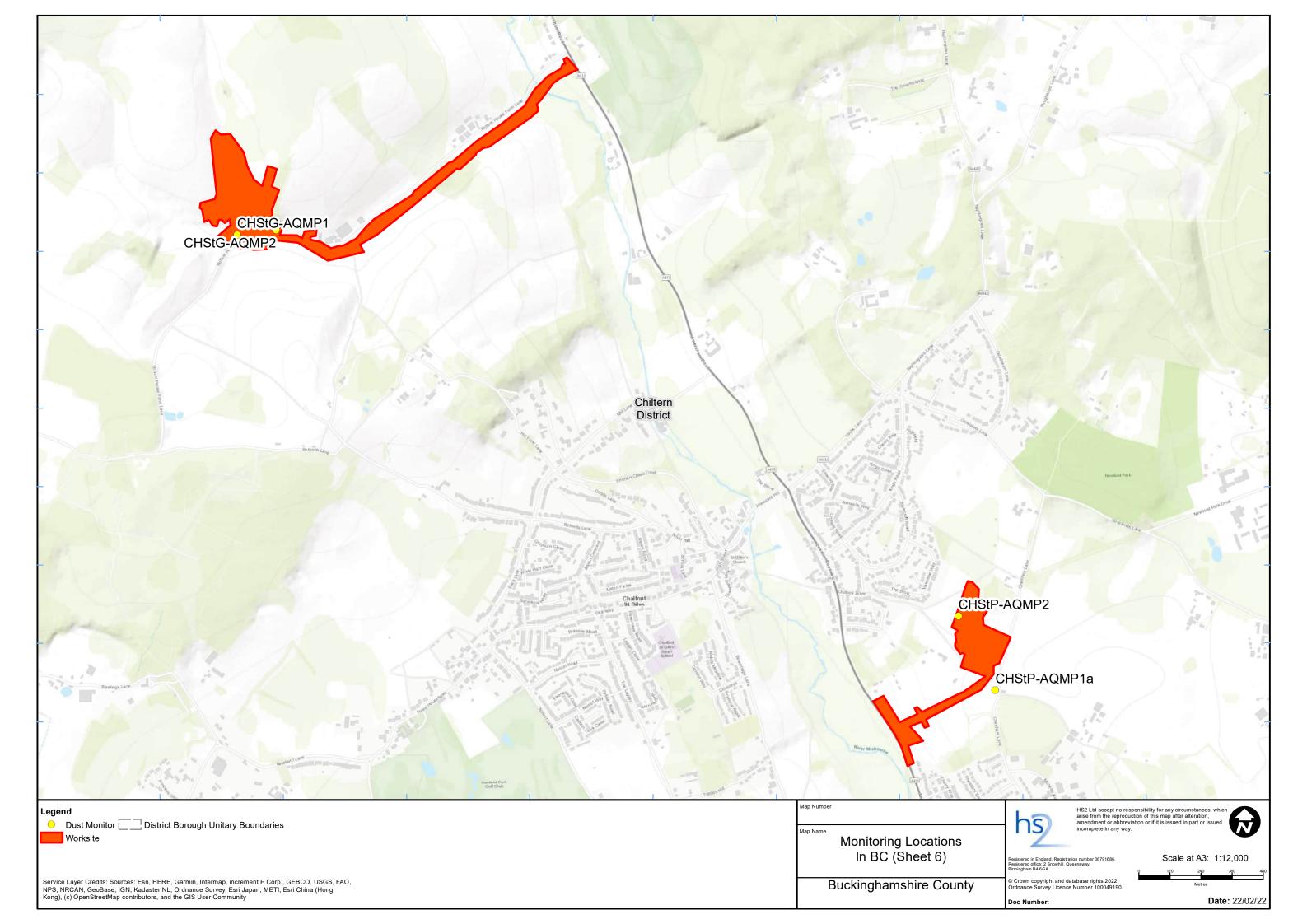


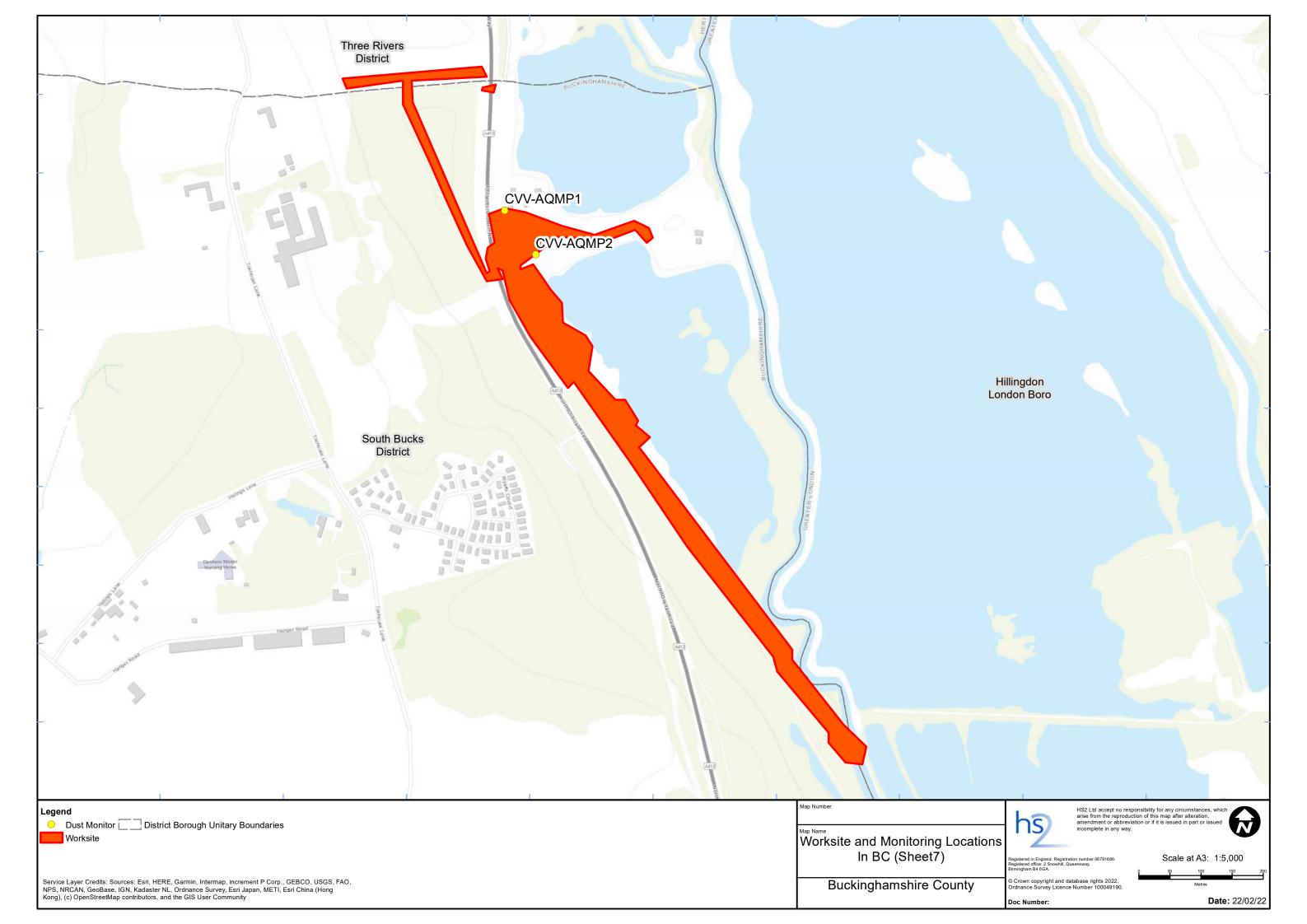












Appendix B - Dust Monitoring Results

Table 1: Dust monitoring locations and May 2022 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	Yes	7.6	1.0	68.0	0	100.0
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	7.6	1.0	68.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP-NMP1 to site-boundary outside residence	M	Yes	Yes	7.1	1.0	66.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	7.6	1.0	70.0	0	100.0
AMER-AQMP1	495367, 196722	On the north- eastern boundary of Amersham	М	Yes	Yes	7.8	1.0	68.0	0	100.0
AMER-AQMP2	495263, 196590	On the south- western boundary of Amersham	М	Yes	Yes	7.7	1.0	74.0	0	98.7
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	5.3	1.0	26.0	0	80.2
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	8.5	1.0	69.0	0	66.4

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 (%)
LMS-AQMP1	493190, 198848	On the south- west of the site	М	Yes	Yes	7.9	1.0	67.0	0	99.7
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	8.0	1.0	67.0	0	99.9
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	7.8	1.0	68.0	0	95.3
ORC-AQMP	490503, 201786	Orchard Cottage South-eastern Site Boundary	М	Yes	Yes	7.2	1.0	61.0	0	100.0
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	M	Yes	Yes	7.6	1.0	48.0	0	99.7
School End – Dust	463666, 230049	School End, Chetwode	M	Yes	Yes	8.1	1.0	52.0	0	99.9
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	M	Yes	Yes	21.9	1.9	1867.4	5	94.6
South Heath – Dust	490534, 202014	Bury Farm, South Heath	M	Yes	Yes	8.4	1.0	72.0	0	99.7
Potters Row – Dust	490075, 202502	Potters Row, South Heath	M	Yes	Yes	20.3	1.0	1177.0	6	59.0
Hunts Green – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	8.8	1.0	75.0	0	80.4
Grimms Ditch – Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	7.0	5.0	9.0	0	0.9

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/m³	Data capture (%)
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	7.5	1.0	62.0	0	78.1
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	7.7	1.0	78.0	0	72.0
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	6.1	1.0	20.0	0	59.5
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	7.7	1.0	61.0	0	100.0
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	7.3	1.0	43.0	0	100.0
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	7.5	1.0	44.0	0	100.0
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	5.6	1.0	22.0	0	59.3
Turweston North - Dust	460439, 237140	Turweston, Buckinghamshire	М	Yes	Yes	6.8	1.0	33.0	0	99.7
FCC - Dust	469042, 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	8.6	1.0	72.0	0	99.7
Ellesborough Road	486458, 207550	Ellesborough Road, Wendover	М	Yes	Yes	7.3	1.0	57.0	0	99.7

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/m³	Data capture (%)
Nash Lee Lane 1	484766, 208782	Nash Lee Lane (west)	М	Yes	Yes	8.4	1.0	59.0	0	99.9
Nash Lee Lane 2	485069, 208793	Nash Lee Lane (east)	М	Yes	Yes	7.9	1.0	57.0	0	99.5
Bacombe Lane	486528, 207217	Bacombe Lane, Wendover	M	Yes	Yes	7.3	1.0	59.0	0	99.7
SDVC	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	8.5	1.0	65.0	0	99.7
Station Road	474068, 219307	Station Road, Quainton	М	Yes	Yes	4.8	1.0	25.0	0	46.9

Table 2: Summary of exceedances during period (May 2022)

Monitoring Site ID	Period of trigger alert &	Investigation	Outcomes / Resolution / Remedial measures implemented		
	Concentration recorded				
Rosehill Farm – Dust	04/05/22 9:01 – 10:00; 401.7 μg/m ³ 19:01 - 20:00; 1856.1 μg/m ³ 08/05/22 05:01 - 06:00; 1720.5 μg/m ³ 06:01 - 07:00; 1867.4 μg/m ³	No works were undertaken in close vicinity of Rosehill properties or on a Sunday.	N/A		
	06/05/22 13:01 - 14:00; 456.7 μg/m ³	No Demolition activities were undertaken this day. Activities finished at 12:00PM.	N/A		
	28/05/22 11:01 - 12:00; 360 µg/m ³	Monitor was located circa 90m away from the works. There is a farm on the other side of the monitor, some works could have been happening there, but there is no evidence of it. The works carried out at the dates and times of the trigger alerts were hauling and road sweeping with a limitation of hauling until 13:00h on Saturday, and bowsers were in place during the shift. It was found that monitors were not set up to send alarms on real time of exceedances to the environmental team.	Monitors have been configured in order to send the trigger alarms notifications to the environmental team and earthworks team on real time. Dust suppression measures were in place. Incident will be raised to HS2 and LA will be notified.		
Potters Row – Dust	28/05/22 10:01 - 11:00; 321 μg/m ³	Monitor was located circa 90m away from the works. There is a farm on the other side of the monitor, some works could have been happening there, but there is no evidence of it. The works carried out at the dates and times of the trigger alerts were hauling and road sweeping with a limitation of hauling until 13:00h on Saturday, and bowsers were in place during the shift. It was found that monitors were not set up to send alarms of exceedances to the environmental team.	Monitors have been configured in order to send the trigger alarms notifications to the environmental team and earthworks team on real time. Dust suppression measures were in place. Incident will be raised to HS2 and LA will be notified.		
	28/05/22 16:01 - 17:00; 270 μg/m³	No works undertaken after 17:00h on Saturday.	N/A		
	28/05/22 17:01 - 18:00; 249 µg/m³	No works undertaken after 17:00h on Saturday	N/A		
	29/05/22 16:01 - 17:00; 1177 µg/m³	No works were undertaken by EKFB on Sunday after 17:00h.	N/A		
	29/05/22 15:01 - 16:00; 913 μg/m³	No earthworks were undertaken on Sunday.	N/A		

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

