September 2022

HS2

Air Quality and Dust Monitoring Monthly Report - September 2022 **Buckinghamshire** Council

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A report prepared by EWCs and MWCCs on behalf of HS2 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 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for September 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, Figure 1-7, include:

CVV LTP1 worksite

- Jetty Piling: piling platform relocation works;
- 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, grout curtain around viaduct pile groups maintenance plant and clean up around piles;
- Ground Investigation Works: GI works and Overwater GI Works;
- Pier Construction: standard piers FRC works for pile cap and pier, post-tensioning of AFD legs and tower crane mob / demob;
- North Embankment Compound: compound operation;
- DWSC Compound: compound operation;
- Satellite welfare;
- Generator farms;
- Utility Diversion;
- Environmental Maintenance;
- Cofferdam Excavation;
- INNS River Colne to GUC and GUC to Harvil Road (removal);
- Pumping Water Management;
- Maintenance of Haul Roads;
- North Abutment Works: yard supporting activities and FRC works;
- A412 Gas Crossing Emergency Dismantling;
- Fencing;
- Core Drilling of Concrete;
- Bentonite Farms: Base Slab Construction;
- 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
- Deck Finishes: delivery of parapets, noise barriers, troughs, pipes, steel works and other minor materials to the storage yards and deck, filling of voids and secondary concrete (within deck) and supply and installation of carrier drainpipe and access ramps required within deck.

Chalfont St Peter Vent Shaft

- · General Plant;
- Road Maintenance Works;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connection to Tunnels: demolition and reinforced concrete works; and
- Basement Construction.

Amersham Vent Shaft

- General Site Activity: general plant;
- Collar Construction;
- · Secondary Lining;
- Internal Structure: concrete walls and floors; and
- Small basement construction.

Chalfont St Giles Vent Shaft

- General Site Activity: general plant;
- Road Maintenance Works;
- Reinforced Concrete Internal Structure: concrete walls and floors;
- Connection to Tunnels: demolition and reinforced concrete works;
- Basement Construction: excavation of basement; and
- Stockpile removal.

Little Missenden Vent Shaft

- General site activity: general plant;
- Collar construction; and
- Small basement construction.

Chesham Road Vent Shaft

General site activity: general compound power and muck-away;

- Shaft construction using In-Situ Casson Method: pour walls of shaft, sink shaft to formation level, grouting, lining base slab, reinforced concrete works, backfilling, removal of sheet piles; and
- Internal Structure: reinforced concrete works.

North Portal work site

- Site Establishment Works Site fencing: north portal barrettes and headwall;
- Temp. Access Road: scrape formation, hardstanding and kerbing, drainage and service and asphalt and signage;
- North Portal Compound: general plant;
- North-Portal Building Platform: scraping / hardstanding / surfacing / services/ drainage;
- North-Portal Tracks Platform: scraping / hardstanding / surfacing / services / drainage;
 and
- Piling Platform Reinstatement and Maintenance: scraping / hardstanding.

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

- Charndon Lodge Underbridge FRC (formwork reinforced concrete) works on the bridge recommenced. Steel and shuttering lifting and fixing ongoing.
- East West Rail Overbridge back of wall drainage and offline assembly of the steel deck
- Perry Hill Overbridge rebar fixing, formwork lifting and concrete pouring
- Addison Road Overbridge construction of the reinforced wall requiring lifting of concrete panels and backfilling of aggregate.
- OXD Culverts blinding, installation of pre-cast culvert units, waterproofing and sealing, rebar and shuttering for in-situ headwalls, and technical backfill
- GUN28 Overbridge piling
- OXD Line Earthworks lime stabilisation, starter layers and embankment fill, permanent drainage / ponds, and track layers
- IMD* (Infrastructure maintenance depot) landscape bund fill

- Hills Farm Earthworks import and stockpiling of materials, and stockpiling of site won materials
- MCJ Line Earthworks removal of existing ballast embankment, pre-earthworks drainage, and demolition / removal of existing culverts
- Edgcott Road Overbridge Dig and replace (D&R)
- Doddershall No.6 and No.7 Culvert excavation of working area, blinding and installation of pre-cast culvert units,
- Quainton Temporary Utility Diversions Microtunnelling, auger boring, field trenching for duct laying, installation of sheet piled trench box for duct laying and ditch crossings for duct laying.
- West Street Temporary Utility Diversions field trenching for duct laying
- SGN Pipe Temporary Diversions field trenching for duct laying and sheet piled coffer dams for utility connections.
- Secant Retaining Wall Topsoil stripping and piling platform creation
- School Hill Batching Plant Production of concrete
- MHR Utilisation Haulage of material across worksites

Twyford to Greatworth

• Routewide grass cutting, vegetation clearance, access road maintenance, drainage, and ponds maintenance along SAR from ch 81;500 to 87;000.

<u>Twyford</u>

- Access Road maintenance;
- Haul Road;
- Drainage/culvert;
- Topsoil stripping;
- Stockpiling; and
- IDTs movement.

School End/Hermitage/Old Stable Cottage

- Compound development,
- Bulk excavation,
- Topsoil stripping,
- Drainage,
- Pond maintenance,
- Stockpiling,
- Topsoil Stripping,
- IDTs movement and
- Piling Platform (CHW18 Overbridge).

<u>Turweston</u>

- Access road,
- Topsoil stripping,
- Compound maintenance,

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- · Drainage/ponds,
- Bulk excavation, and
- Stockpiling.

Aylesbury

Moat Farm

- Stoke Mandeville Bypass piling
- Stockpiling
- Earthworks Aylesbury South Cutting

Westfield

- PRA Overbridge Piling
- Earthworks Aylesbury South Cutting
- Stockpiling
- Overhead utility diversion
- Haul road construction
- PRA Night deliveries

Oat Close

- Earthworks Aylesbury Embankment
- Stockpiling
- Haul road construction

Glebe House

- Earthworks Aylesbury North Cutting
- Stockpiling
- Piling platform works
- Haul road construction

Meadoway

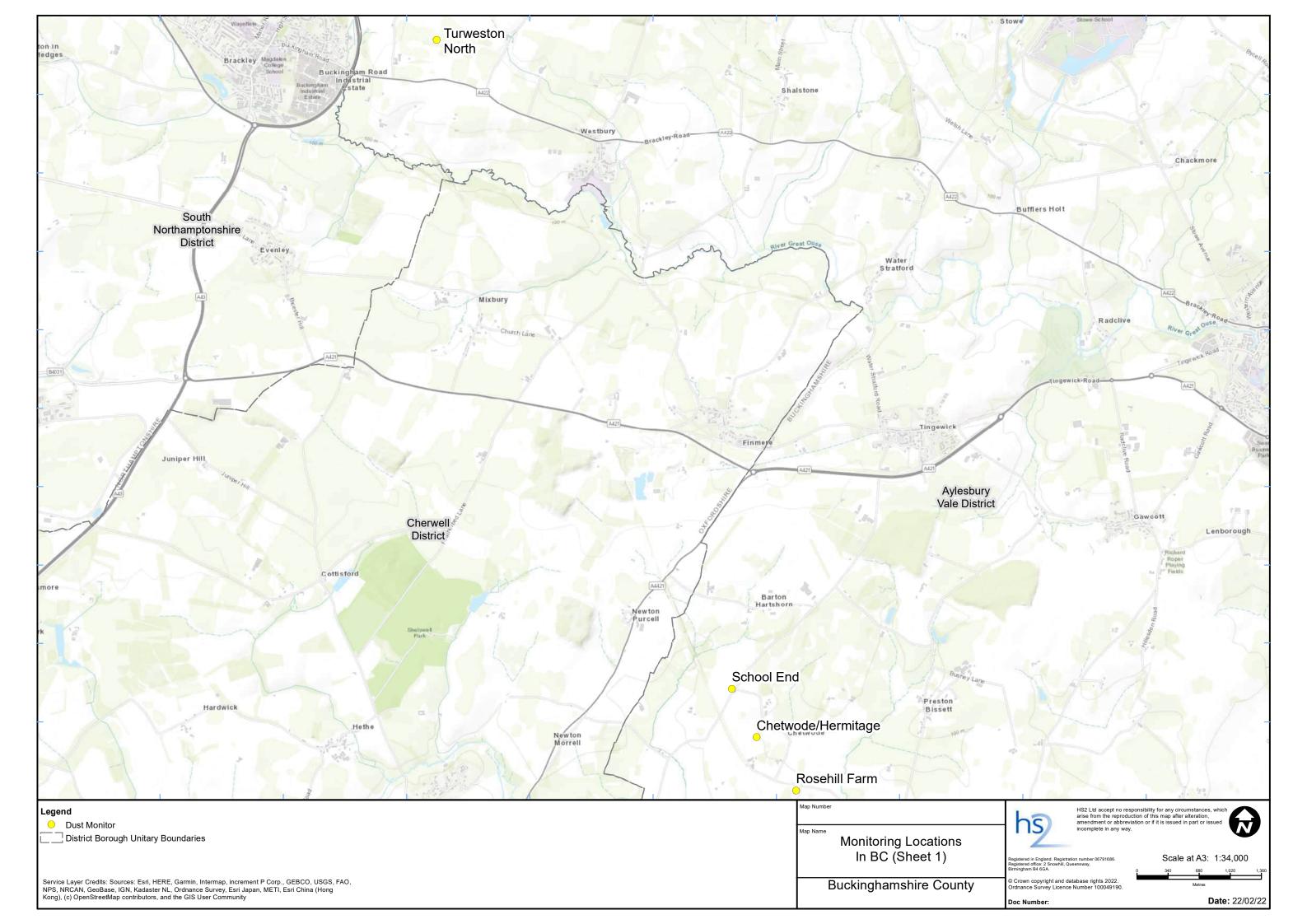
- Compound access road works
- Stockpiling
- Piling platform works
- Haul road construction
- 1.1.5 Thirty-five (35) dust monitors are installed around the worksites, where works are underway. These sites returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for September 2022 are presented in Appendix B, Table 2, 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

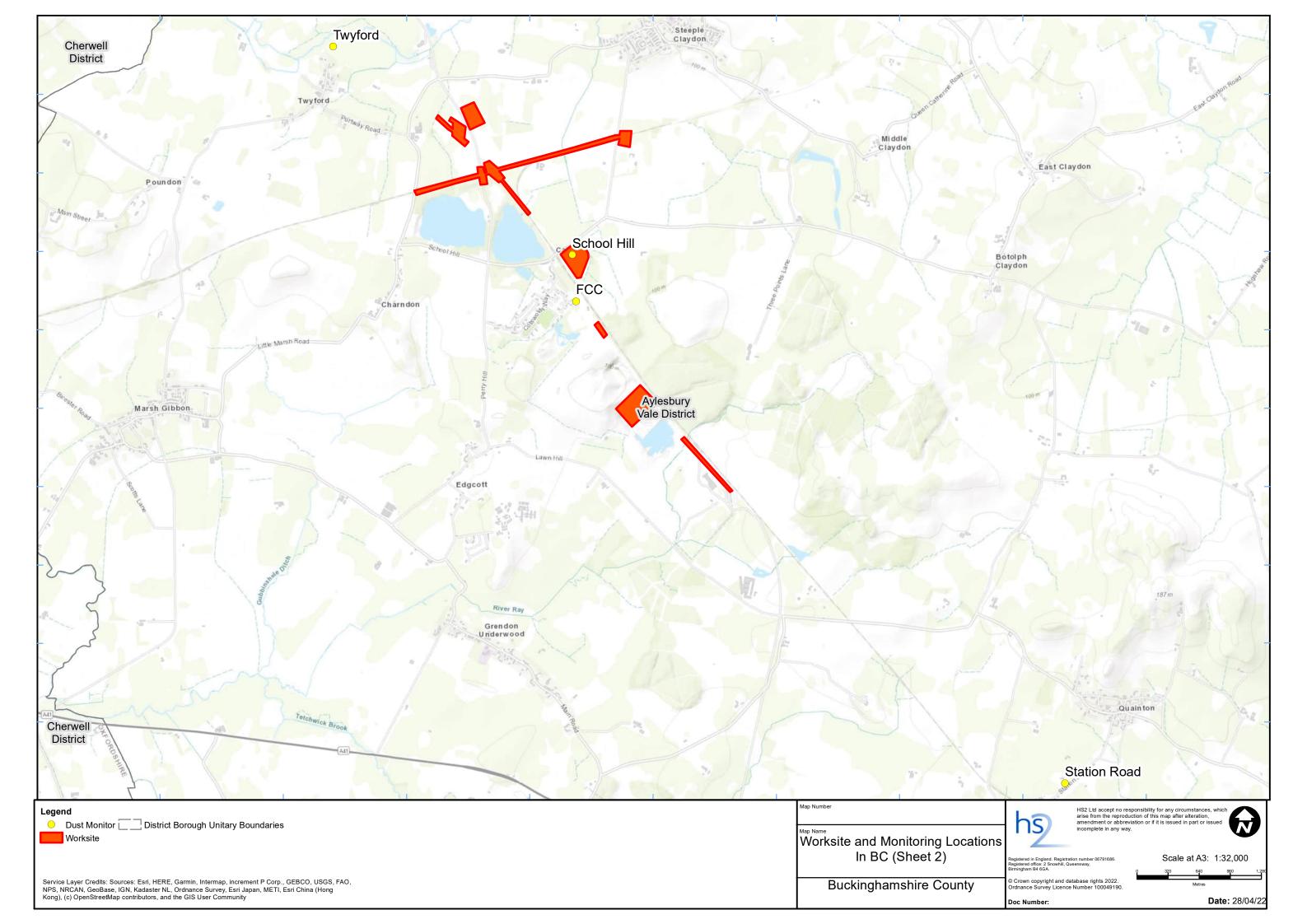
Quality Standards for human health and the environment. The purpose of the monitoring undertaken is to ensure the effectiveness of the on-site mitigation.

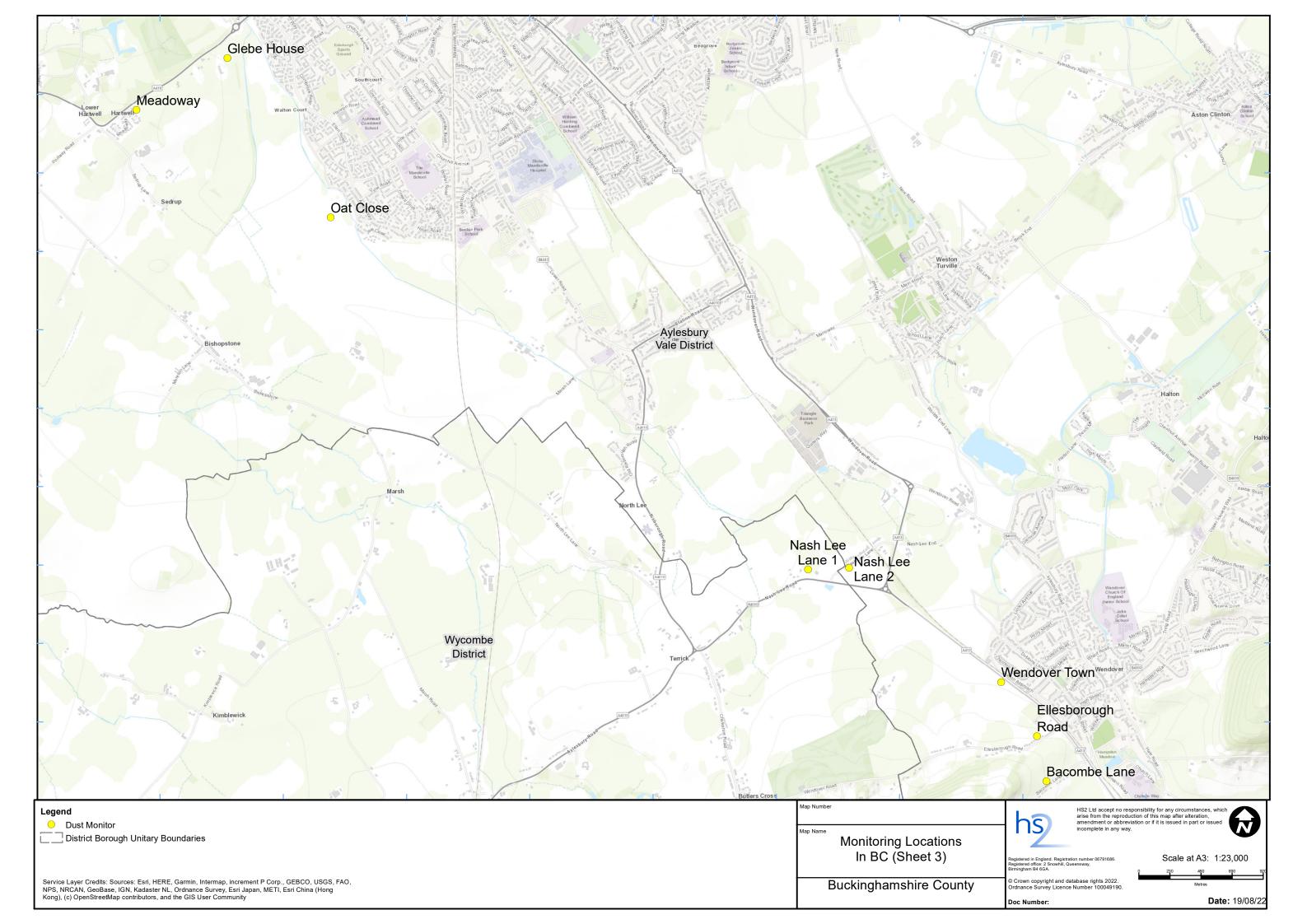
- 1.1.7 The trigger level for PM_{10} concentrations of 190 μ g/m³, measured as a 1-hour mean, in accordance with the updated guidance document 'Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (October 2018)' has been applied.
- 1.1.8 Details of the trigger alert investigations and remediations are presented in Appendix B, Table 2. All other results were in line with expected ranges.
- 1.1.9 Data capture was below 90% for multiple monitors due to technical issues and/or loss of power due to insufficient sunlight/wind and/or damages.
- 1.1.10 No (0) complaints were received during the monitoring period (September 2022).

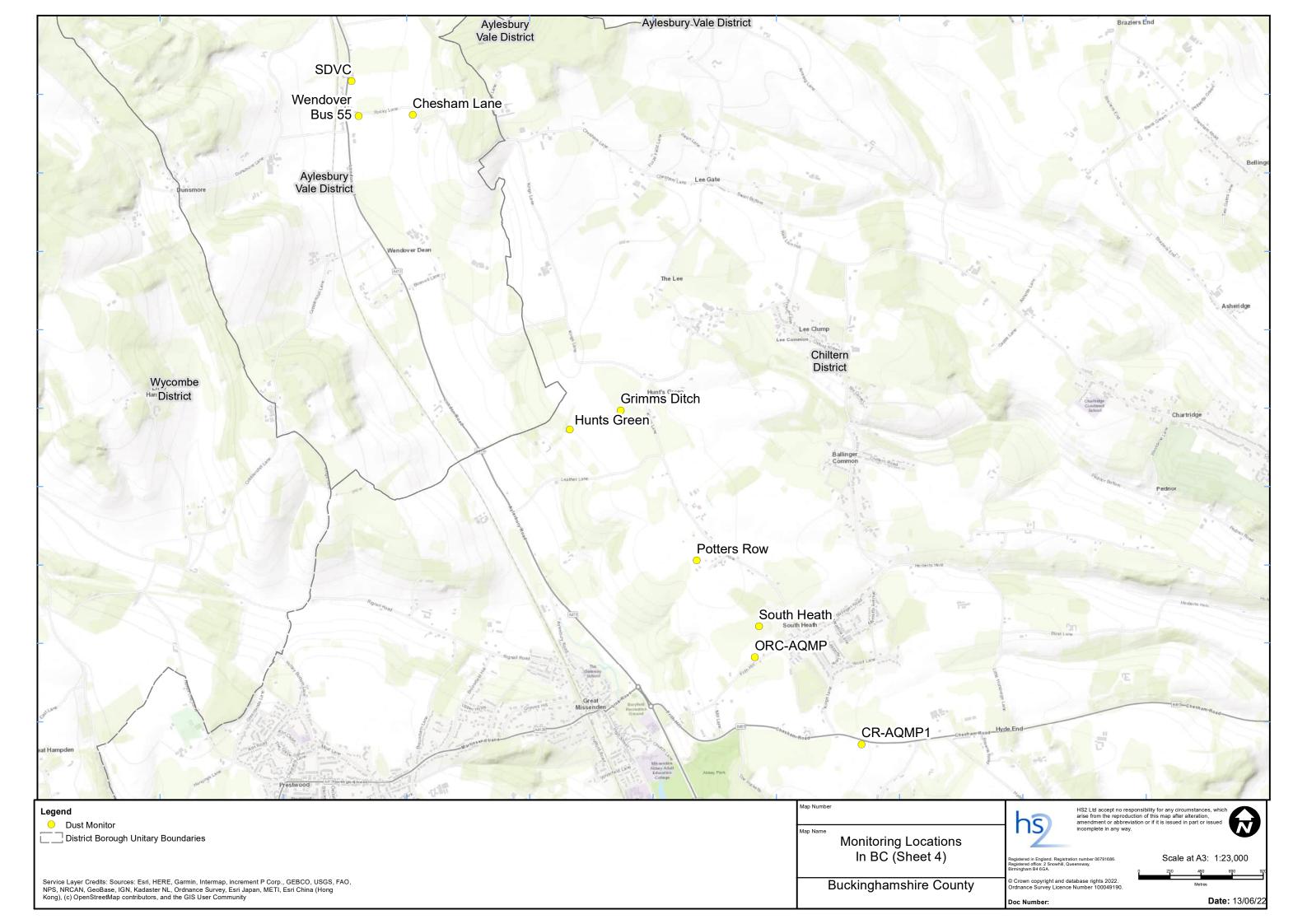
Appendix A - Worksite and Dust Monitoring Locations

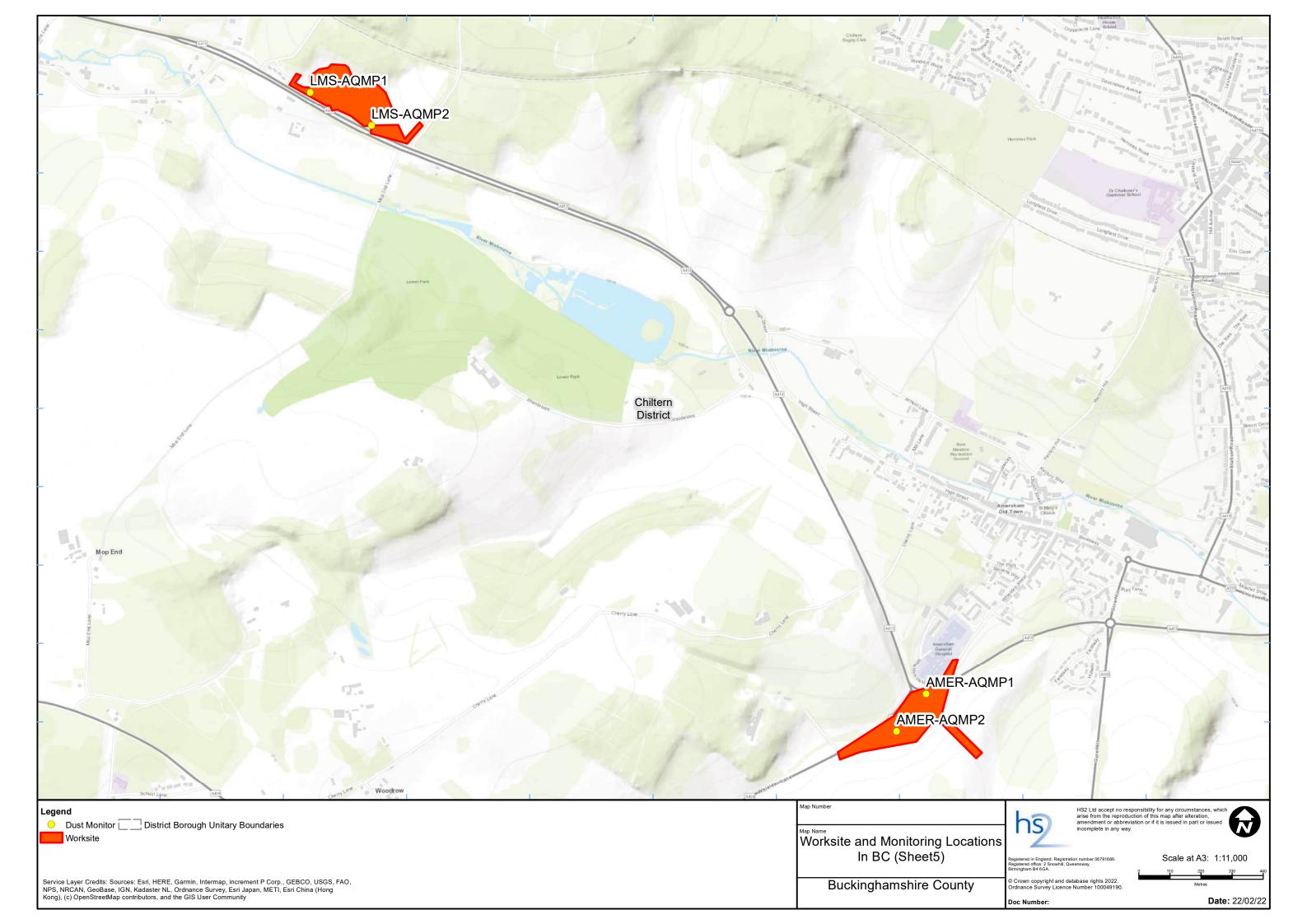
Figures 1 - 7: Worksite and monitoring locations within the BC

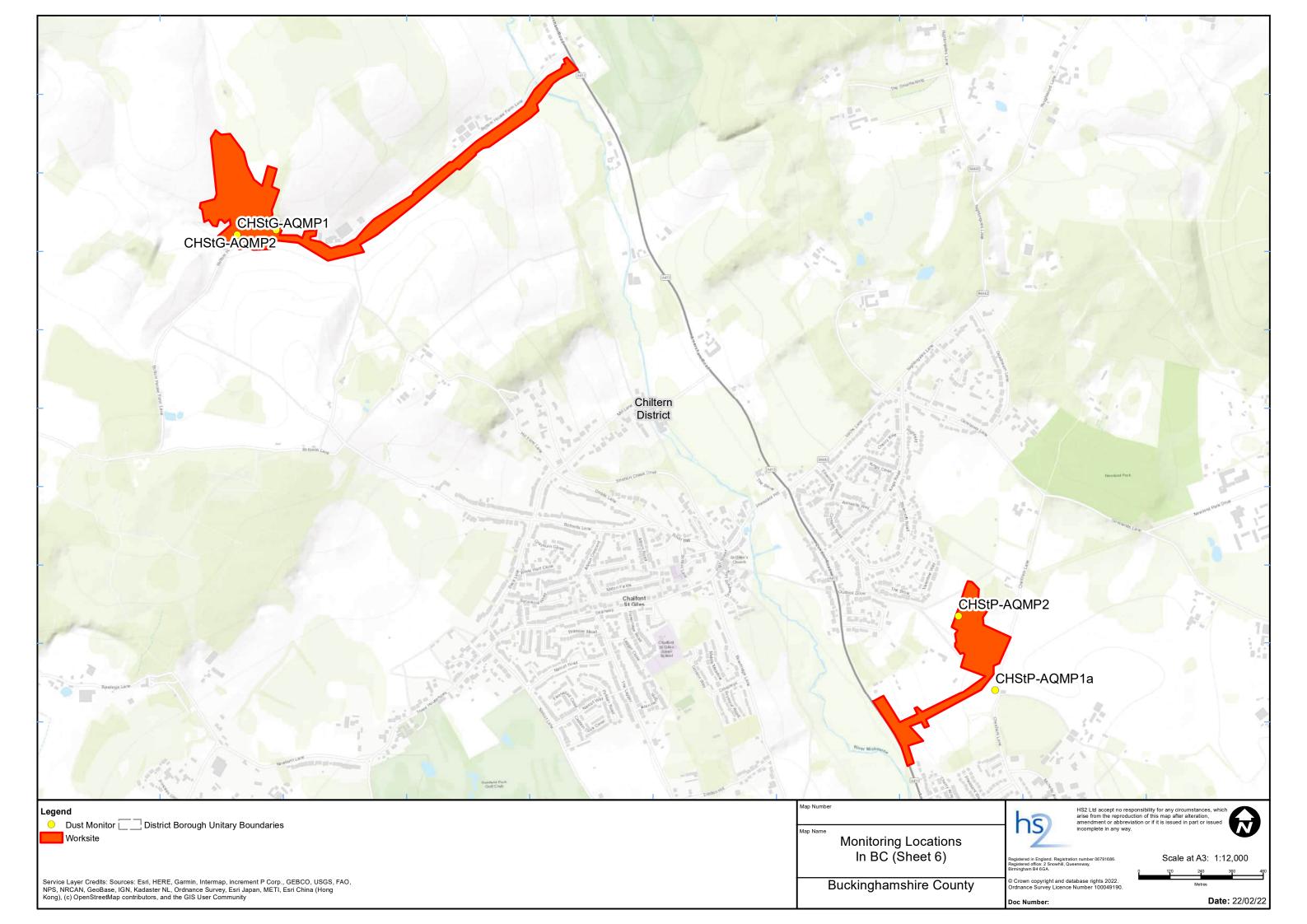


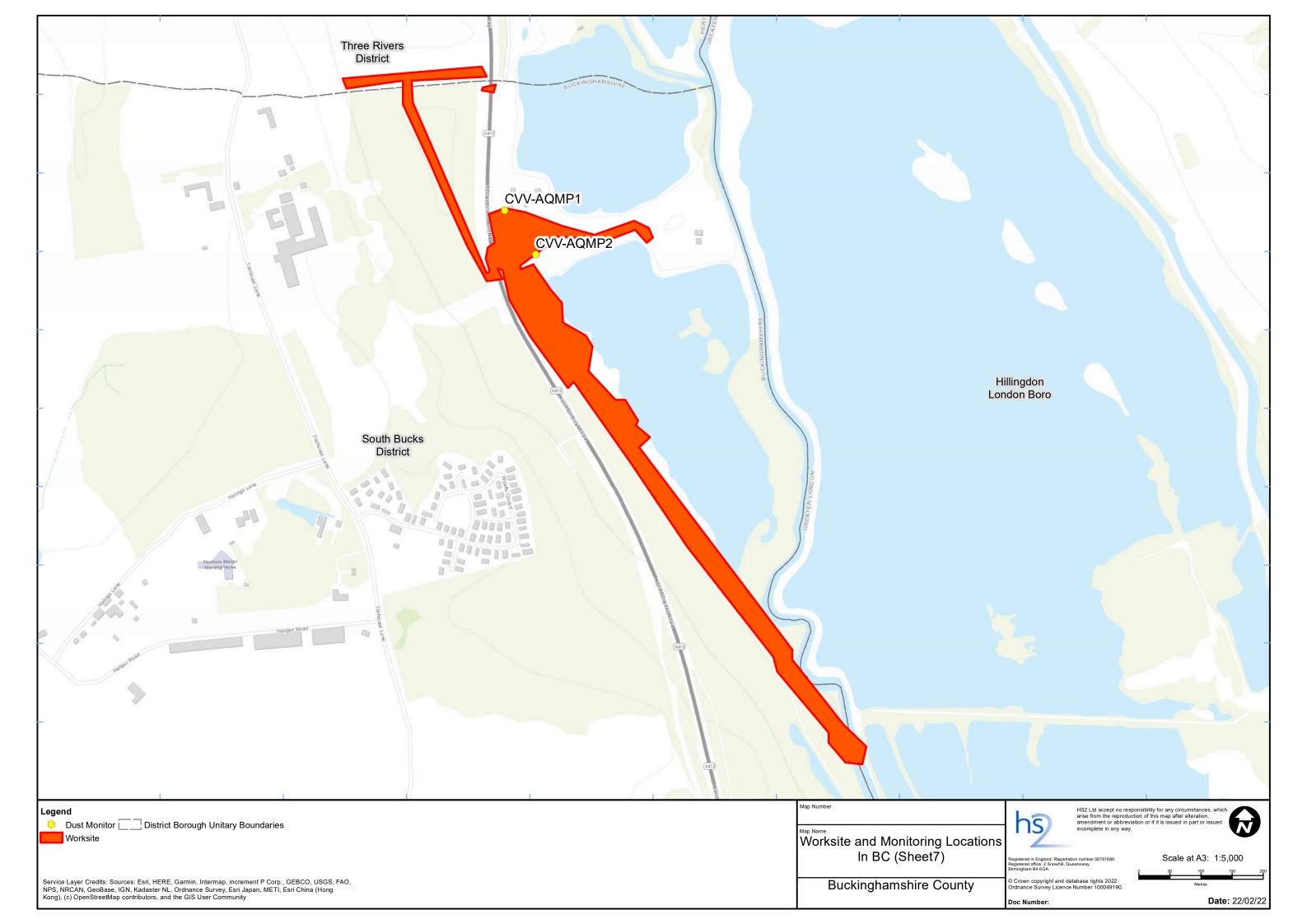












Appendix B - Dust Monitoring Results

Table 1: Dust monitoring locations and September 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	6.1	1.0	22.0	0	98.2
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	5.7	1.0	21.0	0	100.0
CHStP-AQMP1a	500093, 192996	Relocated from CHStP- NMP1 to site-boundary outside residence	M	Yes	Yes	5.4	1.0	23.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	5.5	1.0	27.0	0	100.0
AMER-AQMP1	495367, 196722	On the north-eastern boundary of Amersham	М	Yes	Yes	6.1	1.0	28.0	0	98.3
AMER-AQMP2	495263, 196590	On the south-western boundary of Amersham	М	Yes	Yes	5.7	1.0	28.0	0	98.3
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	4.7	1.0	115.0	0	56.7
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	5.6	1.0	27.0	0	99.9
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	6.0	1.0	34.0	0	100.0
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	5.7	1.0	33.0	0	97.1
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	5.5	1.0	28.0	0	100.0
ORC-AQMP	490503, 201786	Orchard Cottage South- eastern Site Boundary	М	Yes	Yes	5.6	1.0	30.0	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 PM₁₀ concentration (μg/m³)	Minimum 1-hour PM₁₀ 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 (%)
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	9.7	1.6	41.4	0	5.1
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	5.9	1.0	37.0	0	99.9
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	9.1	1.8	79.9	0	99.4
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	5.9	1.0	30.0	0	99.7
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	23.9	1.0	840.0	9	48.9
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	5.5	1.0	38.0	0	49.2
Hunts Green - Dust	489511, 203611	The Lee, South Heath	М	Yes	Yes	-	-	-	-	-
Chesham Lane - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	М	Yes	Yes	6.0	1.0	35.0	0	76.3
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	6.4	1.0	41.0	0	72.8
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	6.2	1.0	49.0	0	100.0
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	5.6	1.0	38.0	0	100.0
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	6.4	1.0	27.0	0	49.9
Chetwode/Hermitage - Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	5.5	1.0	54.0	0	99.9
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	5.5	1.0	38.0	0	100.0
Turweston North - Dust	460439 , 237140	Turweston, Buckinghamshire	М	Yes	Yes	5.3	1.0	38.0	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 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 (%)
FCC - Dust	469042 , 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	5.9	1.0	68.0	0	78.3
Ellesborough Road - Dust	486458 , 207550	Ellesborough Road, Wendover	М	Yes	Yes	5.9	1.0	41.0	0	83.5
Nash Lee Road - Dust	484766 , 208782	Nash Lee Lane (west)	М	Yes	Yes	6.4	1.0	38.0	0	70.6
Nash Lee Lane - Dust	485069 , 208793	Nash Lee Lane (east)	М	Yes	Yes	5.8	1.0	36.0	0	100.0
Bacombe Lane – Dust	486528 , 207217	Bacombe Lane, Wendover	М	Yes	Yes	5.3	1.0	71.0	0	99.7
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	6.1	1.0	42.0	0	100.0
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	5.5	1.0	41.0	0	100.0
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	5.8	1.0	42.0	0	100.0

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

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Potters Row – Dust	14/09/2022 09:00 – 9:59; 662 µg/m³ 10:00 – 10:59; 387 µg/m³ 11:00 – 11:59; 446 µg/m³ 13:00 – 13:59; 296 µg/m³ 14:00 – 14:59; 289 µg/m³ 18:00 – 18:59; 328 µg/m³	Upon investigation, vegetation clearance works were being carried between 10m and 50m from Potters Row monitor.	Environmental Team liaised with Works Manager to send dust mitigation measures to the location (water bowser). The incident was raised to HS2 via Horace and internally via Airsweb.
Potters Row – Dust	14/09/2022 19:00 – 19:59; 383 μg/m ³	Upon investigation, EKFB did not undertake any activities at this time. Discounted as outside of site working hours agreed with Buckinghamshire Council.	N/A
Potters Row – Dust	15/09/2022 17:00 – 17:59; 218 µg/m³ 18:00 – 18:59; 840 µg/m³	Upon investigation, EKFB did not undertake any activities at this time. Discounted as outside of site working hours agreed with Buckinghamshire Council.	N/A

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

