

July 2022

## Air Quality and Dust Monitoring Monthly Report – July 2022 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 July 2022.
- 1.1.2 Figures 1-7 in Appendix A present the current worksites together with the dust monitoring locations for July 2022.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report available from <a href="www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2">www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2</a>, 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:

## The Colne Valley Viaduct (CVV) LTP1

- Jetty Piling: piling plant form, platforms, support plant, compound; and 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, 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 pier 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;
- Collar Construction;
- Small Basement Construction; and
- Secondary lining; and Internal structures.

#### Chalfont St Giles Vent Shaft

- General Site Activity: general plant;
- Secant Piling;
- Road Maintenance Works;
- Secondary Lining;
- Reinforced Concrete Internal Structure: concrete walls and floors; and
- Basement Construction: excavation of basement, reinforced concrete ground beams and waterproofing works.

#### Little Missenden Vent Shaft

- General site activity: general plant;
- Dewatering;
- Base Slab: preparation works and concrete pours;
- Collar construction; and
- Secant Piling. Inc excavation and cutting of piles.

## 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, grouting, lining base slab, reinforced concrete works, backfilling and the removal of sheet piles.

### 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

#### 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 works including rebar fixing, formwork lifting / removal and concreting
- East West Rail Overbridge FRC works including rebar fixing, formwork lifting / removal and concreting
- Perry Hill Overbridge pilecap excavation, pile cropping, and FRC works including rebar fixing, formwork lifting / removal and concreting
- Addison Road Overbridge FRC works including rebar fixing, formwork lifting / removal and concreting
- 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 embankment removal, dig and replace (D&R), 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 excavation of piling platform
- Doddershall No.6 and No.7 Culvert excavation of working area
- West Street Temporary Diversion formation excavation, laying and compacting of stone, cutting of drainage ditches, and surfacing / tarmacking
- Addison Road Temporary Diversion removal of existing embankment
- Creighton Road Traffic Lights concrete works for traffic light bases
- Site Access Roads formation excavation, laying and compacting of stone, cutting of drainage ditches, and surfacing / tarmacking
- Quainton Temporary Utility Diversions Concrete shaft sinking for under track crossings (UTXs), microtunnelling for UTXs, auger boring for UTXs, field trenching for duct laying, and road trenching for duct laying
- West Street Temporary Utility Diversions field trenching for duct laying
- SGN Pipe Temporary Diversions field trenching for duct laying

## Twyford to Greatworth (T2G)

- School End/Hermitage/Old Stable Cottage: compound development, bulk excavation, topsoil stripping, Drainage, pond maintenance, I&M, Stockpiling, Topsoil Stripping, and IDTs movement;
- Twyford: Access Road maintenance, Haul Road, drainage/culvert, topsoil stripping;
- Turweston: access road, topsoil stripping, compound maintenance, drainage/ponds, bulk excavation, stockpiling, and slab crossing; and
- Routewide Vegetation clearance, access road, drainage, and ponds maintenance along SAR from ch 81;500 to 87;000.

## Aylesbury

## <u>Meadoway</u>

- Construction of the A418 Security Plaza access road;
- Construction of the A418 Security Plaza access road connection to haul road;
- Earthworks (Aylesbury North Cutting excavation, stockpile construction).

## <u>Oat Close</u>

• Earthworks (Aylesbury Embankment excavation, stockpile construction).

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

- Earthworks (Aylesbury North Cutting excavation, stockpile construction);
- A418 Overbridge earthworks (excavation, stockpile construction);
- UKPN utility works.

#### <u>Moat Farm</u>

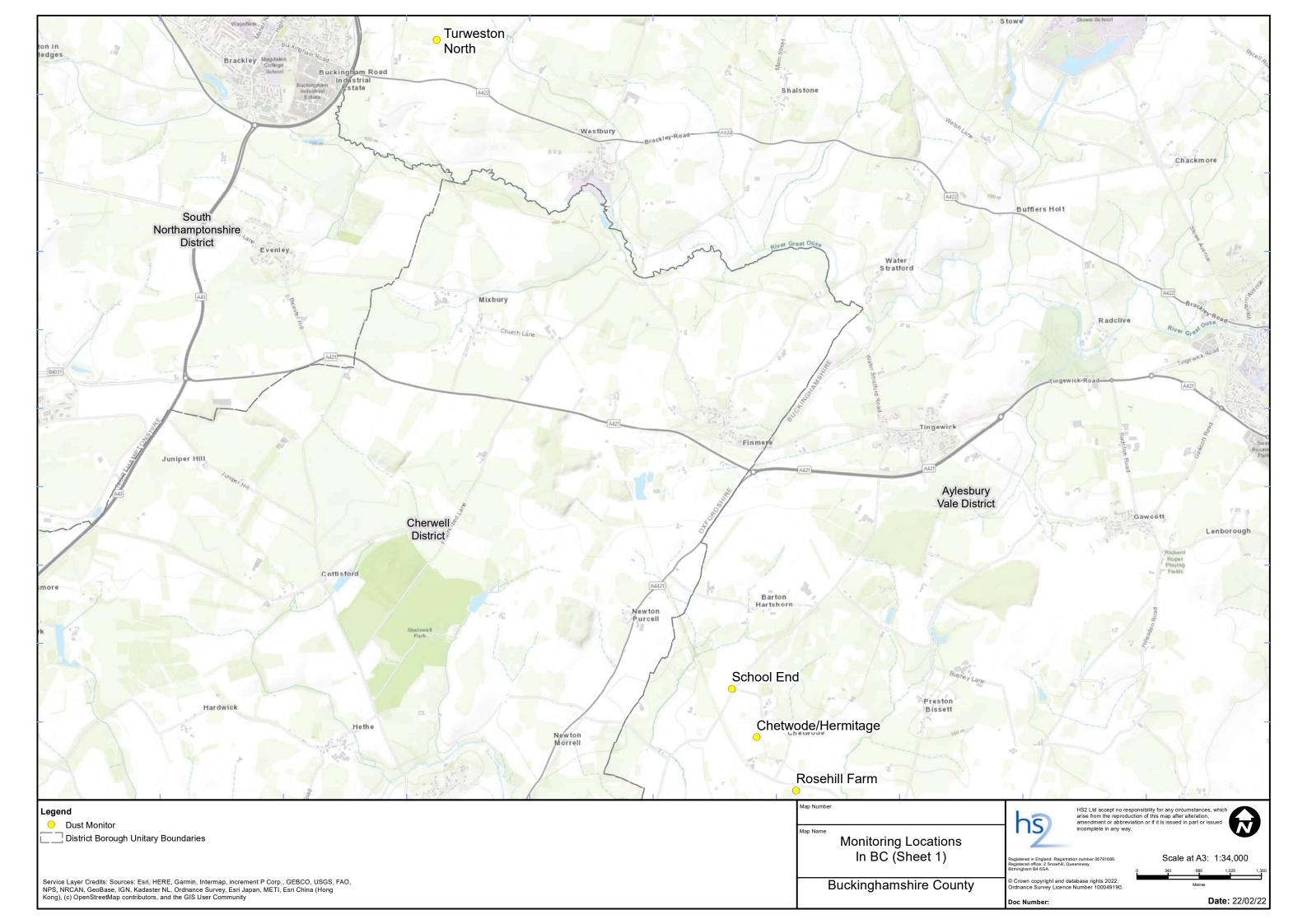
- Earthworks (Aylesbury South Cutting excavation, stockpile construction);
- PRA Overbridge piling works;
- PRA Realignment earthworks (excavation, stockpile construction);
- Overhead utility underground diversion works;
- PRA Rail Deliveries maintenance of stockpile and access road; and
- PRA Rail Deliveries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

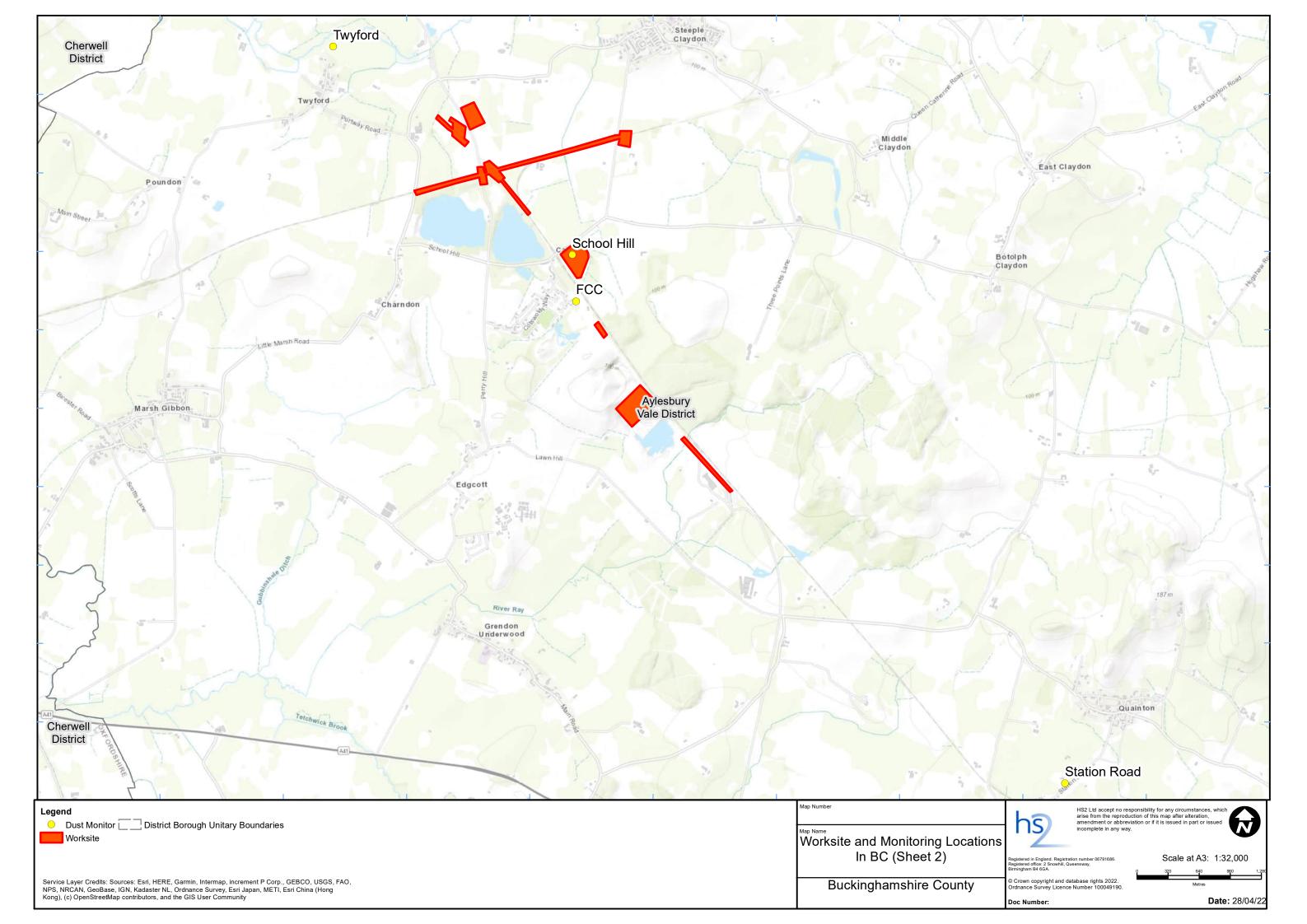
#### <u>Westfield</u>

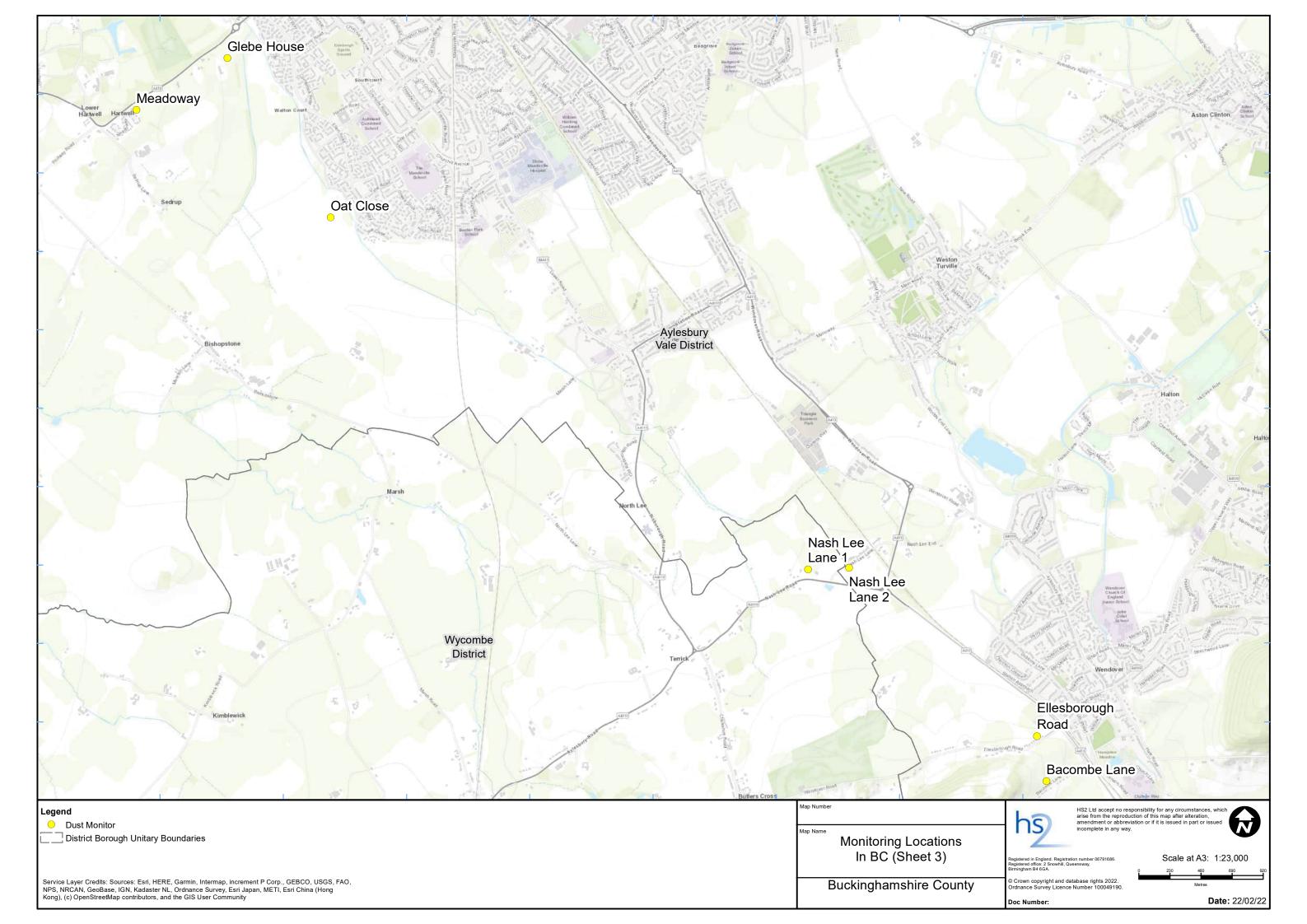
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- PRA Overbridge piling works;
- PRA Realignment earthworks (excavation, stockpile construction);
- Overhead utility underground diversion works;
- PRA Rail Deliveries maintenance of stockpile and access road; and
- PRA Rail Deliveries by train and unloading, transport to stockpile area.
- 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 July 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<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 (October 2018)*' has been applied.
- 1.1.8 Data capture was below 90% for multiple monitors in July 2022 due to technical issues, remote connection problems and loss of power (Nash Lee Road: damaged solar panel cable; Hunts Green & School Hill (CAL-AQMP2): communication cable failure/damage).
- 1.1.9 Details of trigger alert investigations and remediations are presented in Appendix B, Table3.
- 1.1.10 No (0) complaints were received during the monitoring period (July 2022).

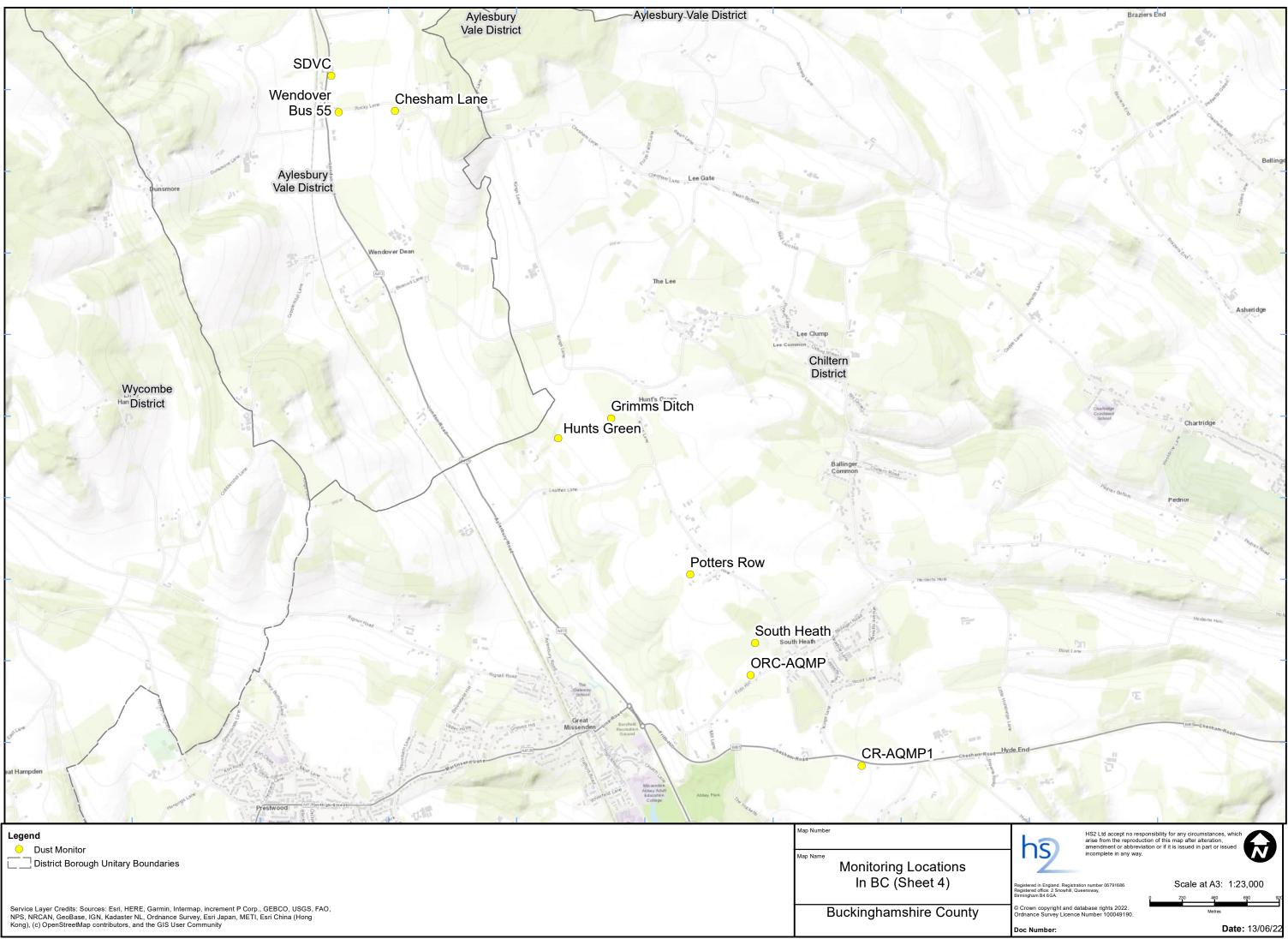
## **Appendix A – Worksite and Dust Monitoring Locations**

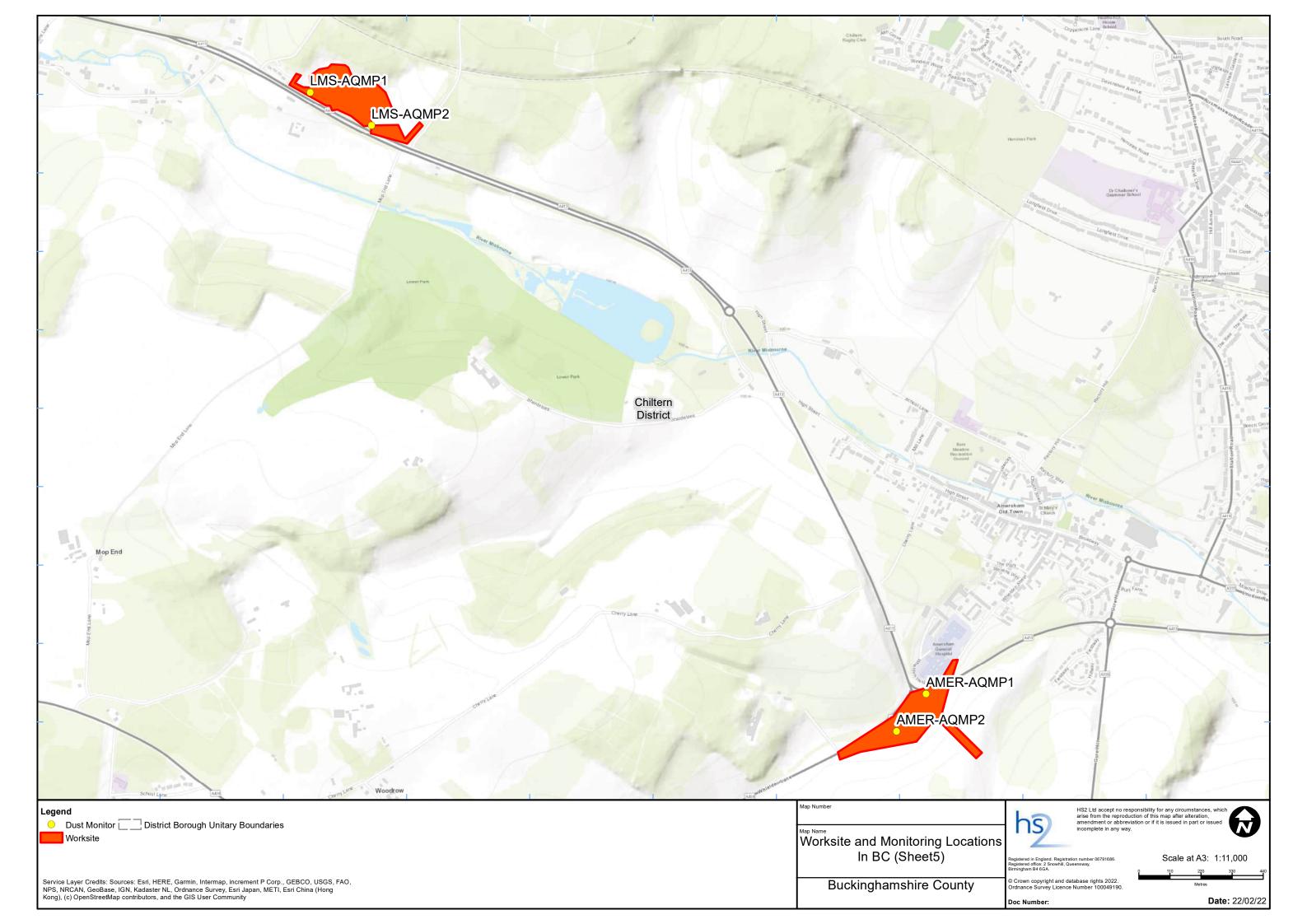
Figure 1-7: Worksite and monitoring locations within the BC

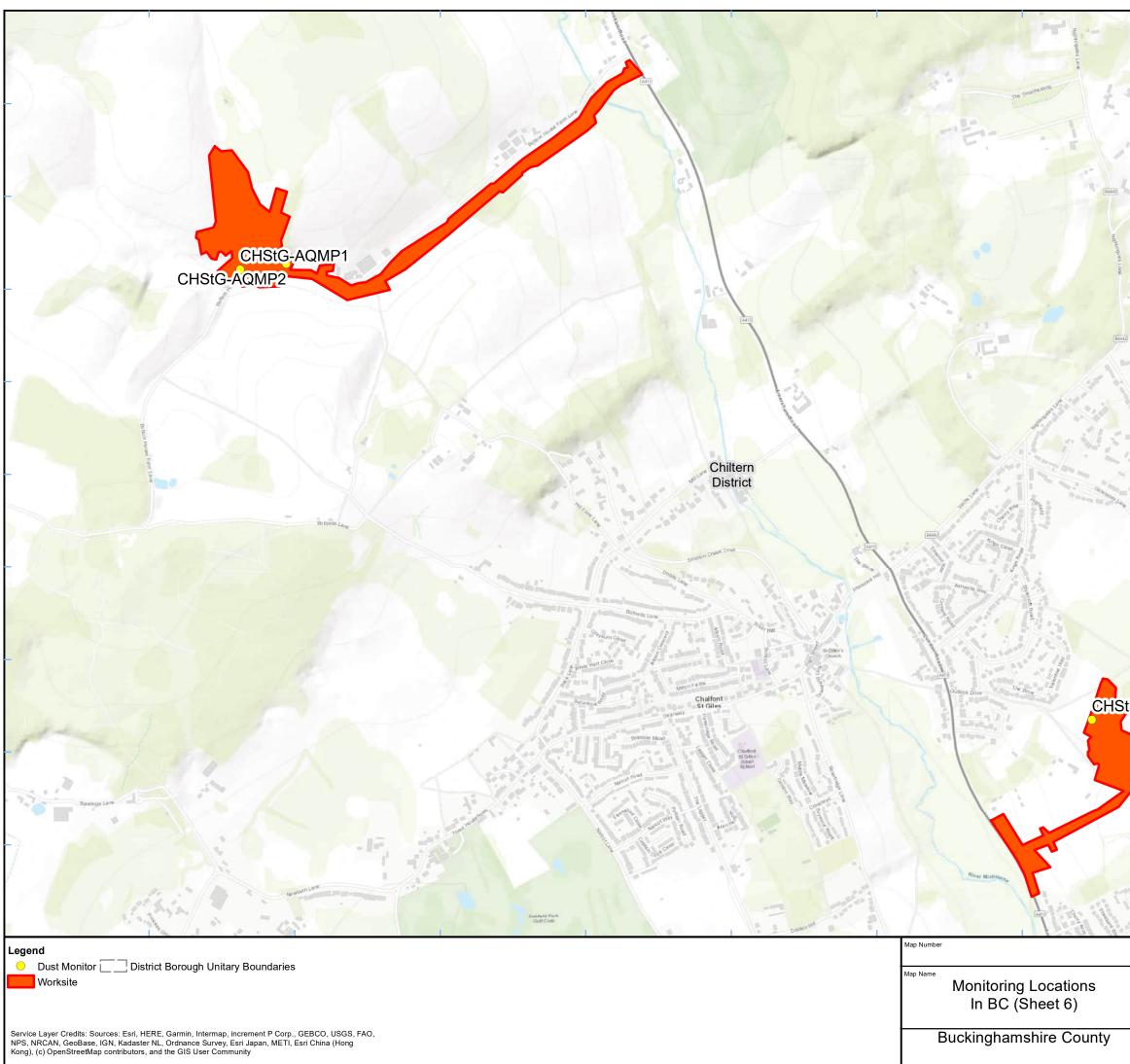




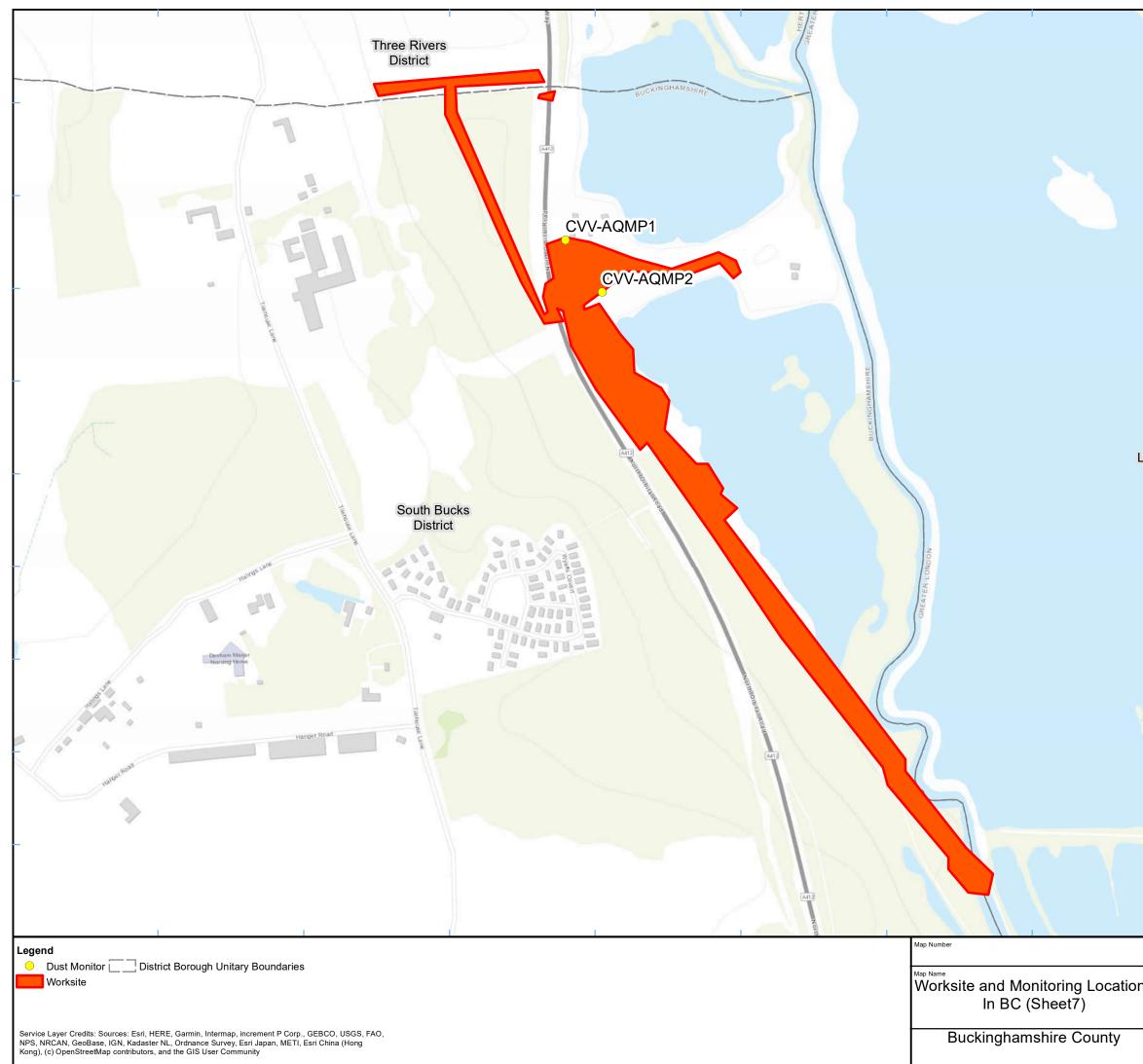








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## **Appendix B – Dust Monitoring Results**

Table 1: Dust monitoring locations and July 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 <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/m³)	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	Yes	5.0	1.0	36.0	0	99.5
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	М	Yes	Yes	4.9	1.0	34.0	0	98.4
CHStP-AQMP1a	500093, 192996	Relocated from CHStP- NMP1 to site-boundary outside residence	М	Yes	Yes	4.3	1.0	54.0	0	100.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	М	Yes	Yes	4.2	1.0	26.0	0	99.7
AMER-AQMP1	495367, 196722	On the north-eastern boundary of Amersham	М	Yes	Yes	5.0	1.0	27.0	0	97.3
AMER-AQMP2	495263, 196590	On the south-western boundary of Amersham	М	Yes	Yes	4.7	1.0	28.0	0	98.4
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	М	Yes	Yes	4.5	1.0	124.0	0	82.0
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	М	Yes	Yes	4.4	1.0	31.0	0	100.0
LMS-AQMP1	493190, 198848	On the south-west of the site	М	Yes	Yes	4.6	1.0	27.0	0	99.1
LMS-AQMP2	493407, 198731	On the south-east of the site	М	Yes	Yes	4.4	1.0	29.0	0	99.1
CR-AQMP1	491291, 201143	On the Chesham Road Vent Shaft	М	Yes	Yes	4.3	1.0	41.0	0	98.5
ORC-AQMP	490503, 201786	Orchard Cottage South- eastern Site Boundary	М	Yes	Yes	3.6	1.0	48.0	0	68.4

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 <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/m³)	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
School Hill (CAL- AQMP2) - Dust	469003, 224740	School Hill Compound	М	Yes	Yes	-	-	-	-	-
School End – Dust	463666, 230049	School End, Chetwode	М	Yes	Yes	5.4	1.0	83.0	0	99.9
Rosehill Farm – Dust	464368, 228939	Rosehill Farm, Chetwode	М	Yes	Yes	14.7	1.6	448.5	3	96.6
South Heath – Dust	490534, 202014	Bury Farm, South Heath	М	Yes	Yes	4.5	1.0	36.0	0	99.6
Potter Row – Dust	490075, 202502	Potter Row, South Heath	М	Yes	Yes	5.0	1.0	36.0	0	57.0
Grimms Ditch – Dust	489135, 203468	Leather Lane, The Lee, South Heath	М	Yes	Yes	2.7	1.0	6.0	0	8.5
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	4.7	1.0	34.0	0	85.3
Wendover Bus 55 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	М	Yes	Yes	4.7	1.0	32.0	0	84.7
Meadoway – Dust	479803, 212178	Aylesbury, Buckinghamshire	М	Yes	Yes	4.5	1.0	37.0	0	99.6
Oat Close – Dust	481237, 211384	Oat Close, Bishopstone, Aylesbury	М	Yes	Yes	4.6	1.0	49.0	0	99.6
Twyford - Dust	466544, 226883	Twyford, Buckinghamshire	М	Yes	Yes	4.2	1.0	25.0	0	99.6
Chetwode/Hermitage – Dust	463936, 229521	Hermitage, Chetwode	М	Yes	Yes	5.0	1.0	37.0	0	99.9
Glebe House - Dust	480475, 212560	A418 Aylesbury	М	Yes	Yes	4.5	1.0	41.0	0	99.7
Turweston North - Dust	460439 , 237140	Turweston, Buckinghamshire	М	Yes	Yes	4.6	1.0	65.0	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 PM₁₀ concentration (µg/m³)	Minimum 1-hour PM₁₀ concentration (µg/m³)	Maximum 1-hour PM <sub>10</sub> concentration (μg/m³)	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	Data capture (%)
FCC - Dust	469042 , 224263	Adjacent Red Kite View, Calvert	М	Yes	Yes	7.1	1.0	57.0	0	99.3
Ellesborough Road - Dust	486458 , 207550	Ellesborough Road, Wendover	М	Yes	Yes	5.2	1.0	137.0	0	97.8
Nash Lee Road - Dust	484766 , 208782	Nash Lee Lane (west)	М	Yes	Yes	4.0	1.0	10.0	0	4.2
Nash Lee Lane - Dust	485069 , 208793	Nash Lee Lane (east)	М	Yes	Yes	4.3	1.0	44.0	0	99.1
Bacombe Lane – Dust	486528 , 207217	Bacombe Lane, Wendover	М	Yes	Yes	4.1	1.0	40.0	0	99.9
SDVC – Dust	487522, 206043	Small Dean Viaduct, London Road	М	Yes	Yes	5.5	1.0	56.0	0	99.9
Station Road – Dust	474068, 219307	Station Road, Quainton	М	Yes	Yes	4.2	1.0	34.0	0	99.6
Wendover Town - Dust	486193, 207950	Wendover Bypass, Wendover	М	Yes	Yes	4.0	1.0	43.0	0	99.9

## Table 3: Summary of exceedances during period (July 2022)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Rosehill Farm – Dust	12/07/2022 11:00 – 11:59; 284.4 μg/m <sup>3</sup>	Upton investigation, EKFB did not undertake any activities in close vicinity, except ADTs movements. Dust suppression was in place. Furthermore, this day EKFB carried out topsoil tripping and excavation to level the ground to install acoustic noise barriers near Hermitage. However, no dust exceedance was triggered in this area by the monitoring (10m). Therefore, there is no evidence that EKFB have been the cause of the dust exceedance.	N/ A
	25/07/2022 11:00 – 11:59; 299.6 μg/m <sup>3</sup> 12:00 – 12:59; 448.5 μg/m <sup>3</sup>	Upton investigation, EKFB did undertake works close to Rosehill Farm properties, approx. 10m. See below drawing. Two alerts have been sent by the monitoring near Rosehill Farm, behind the temporary black fence. An excavator and ADT were moving the bund that was generated from the material stripped to clear the area. The area has been stabilised the next day for EKFB contractor to prepare noise barriers installation.	Engagement team have been liaising with the residents after the works. As remedial action EKFB is engaged to pay for any dust impact in their garden.

