

Air Quality and Dust Monitoring Monthly Report – August 2021

Buckinghamshire Council



Department for Transport

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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) area during August 2021.

1.1.2 Figure 1 Appendix A present the current worksites together with the dust monitoring locations for August 2021.

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 phase of works commenced within BC during January 2020 and is expected to be completed by 2025. The current worksites, as presented in Figure 1, include: 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;
- Haul road 28,220 - 29,200: civil works;
- North Embankment Compound: compound operation;
- Ground investigation works: GI works and overwater GI works;
- DWSC Compound: compound operation and de-sanding compound;
- River Colne Realignment;
- Thames water diversion;
- Construction of North Abutment Pile Wall;
- Yard Support of North Abutment Works;
- P41 retaining wall;
- Core Drilling for Integrity Test of Concrete Piles; and
- Cofferdam Excavation, Dewatering, Waling Beams and Concrete Plugs.

Chalfont St Peter Vent Shaft:

- General Plant;
- Shaft Base Slab: preparation works;
- Basement secant piling works: guide walls, shallow box retaining wall contiguous & secant piles, excavate & cut contiguous & secant piles;
- Road Maintenance Works;

- Stockpile management at ventilation shaft site and management of temporary stockpile;
- Shaft Dewatering;
- Shaft excavation after 25m depth;
- All auxiliary plant 01-07; and
- Post Treatment Injection works including dewatering.

Amersham Vent Shaft:

- General site Activity: general plant;
- Earthworks: stockpile management;
- Water Treatment; and
- D-wall Works: excavation, concreting, desanding and mud treatment.

Chalfont St Giles Vent Shaft:

- General Site Activity: general plant;
- Earthworks: stockpile management;
- Ground Post Treatment: drilling and grouting;
- Water Treatment; and
- Temporary Capping Beam: breakout and formation.

Little Missenden Vent Shaft:

- General Site Activity: general plant;
- Earthworks: stockpile management;
- D-Wall Works: civil works, construct guidewalls, excavation, concreting, desanding, mud treatment, delivery, and assembly; and
- Water Treatment.

Calvert Worksites & Calvert Area

- Preparation for concrete using hand tools and small excavator;
- Concreting;
- T2G section works: Access road and slab crossing;
- Demolition of Sunflower Cottage;
- De-vegetation;
- West Street Compound mobilisation;
- School Hill Batching Plant Compound mobilisation;
- Decommissioned SGN pipeline removal;
- Addison Road overbridge enabling works;
- East West Rail overbridge;
- Charndon Lodge underbridge;
- Perry Hill overbridge;
- Haul road – temporary bridge over Gawcott Road;
- Site access road – at grade crossing;

- FCC offloading platform; and
- OXD line earthworks.

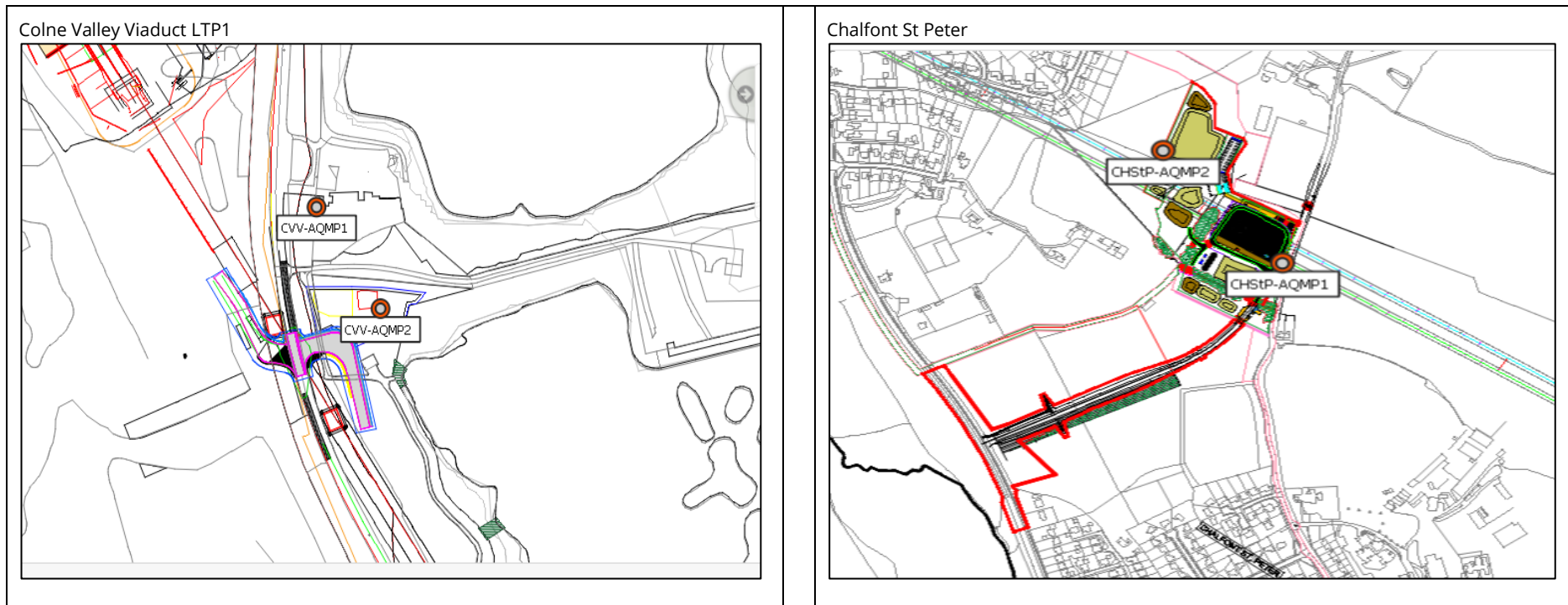
Lower Bottom House Farm Lane

- Earthworks covering a ~25,000m² area: excavation, stockpiling. Subject to soil classification, the fill will be used from site won material;
- Construction works, including the reconstruction and widening of the existing Bottom House Farm Lane, topsoil stripping, utility diversions, installations of ducting and drainage, lay and compact CBGM, lay asphalt and compact, road lining, signage and landscaping; and
- Track out activities.

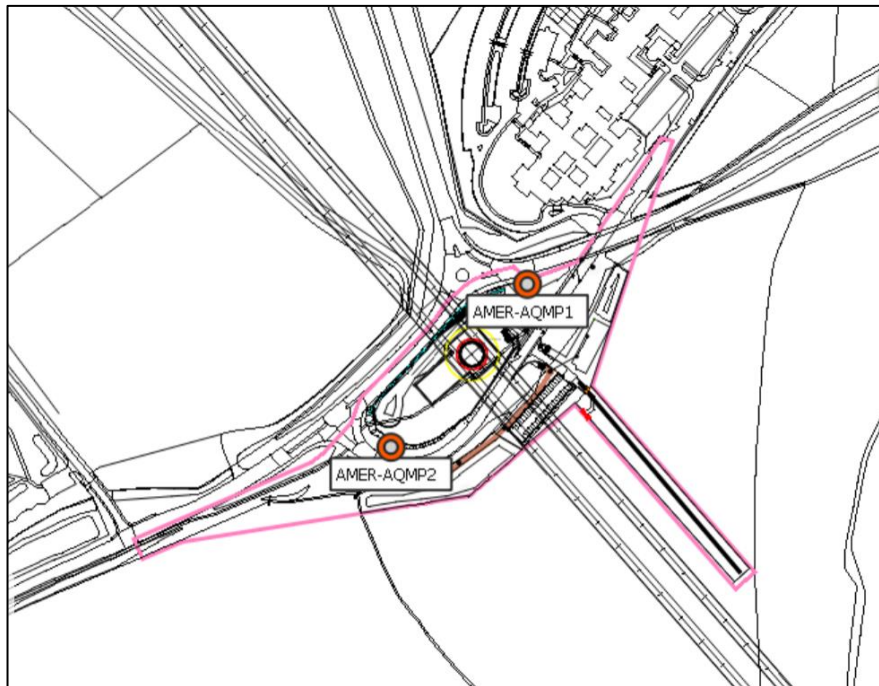
- 1.1.5 Twenty-five dust monitors are installed around the worksites, where demolition, earthworks, construction and trackout activities are underway. Dust Risk Assessments for each worksite classified a medium dust risk for works currently active on site, where applicable. Dust monitoring locations and results for August 2021 are presented in Appendix B, Table 1, together with a line chart of monthly data from each dust monitor presented in Figure 2. 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.
- 1.1.6 The trigger level for PM₁₀ concentrations of 190 µg/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.
- 1.1.7 There were three (3) dust trigger alerts recorded during the monitoring period (August 2021). Trigger alerts are presented in Appendix B, Table 2. All other results were in line with expected ranges.
- 1.1.8 Data capture for multiple monitors was below 90% for the month of August 2021. The data loss at Elm Tree Cottage is due to ongoing power interruption. Missing data at CAL-AQMP2 was due to the monitor being turned off on weekends, while site was not active. Missing data at Grimms Ditch, NCA station 5 and NCA station 6 is due to it being installed on 23rd August 2021. The FCC Sidings monitor's low data capture was due to issues with tree cover over the solar panel, which is now backed up with batteries. The monitor at the School End worksite had low data because of power supply issues. All concerned issues have been or are in the process of being resolved.
- 1.1.9 There were no (0) complaints received for dust or air quality during the reporting period (August 2021).

Appendix A – Worksite and Dust Monitoring Locations

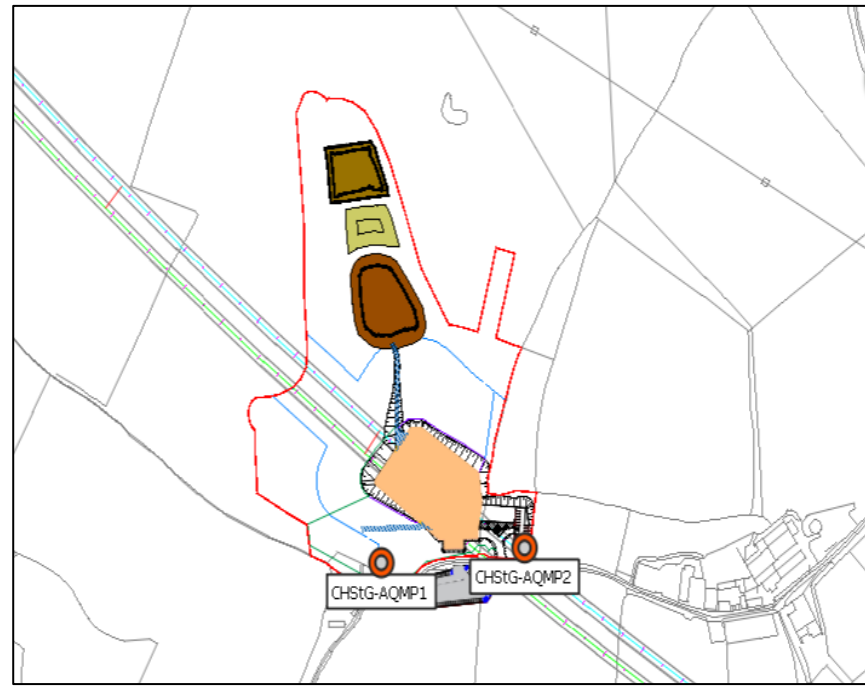
Figure 1: Buckinghamshire Council Worksite and Monitoring locations during August 2021



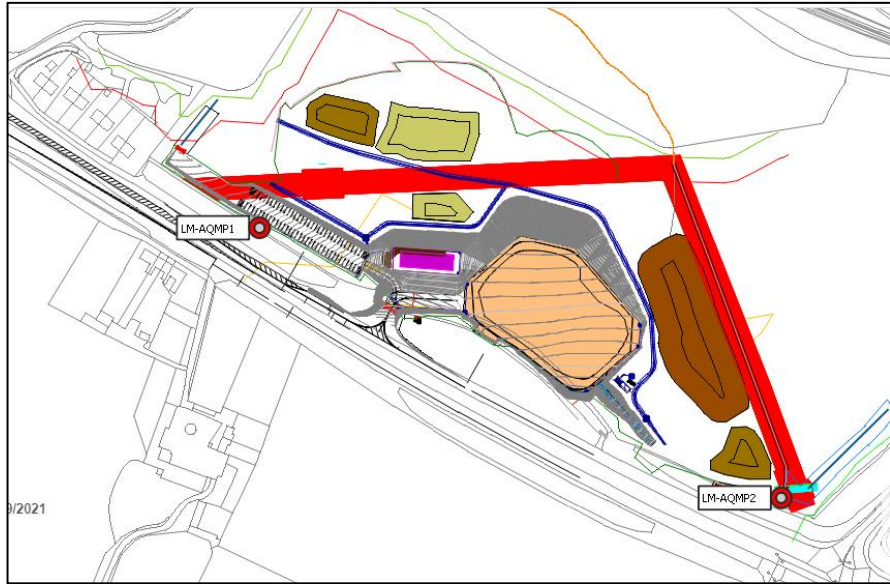
Amersham



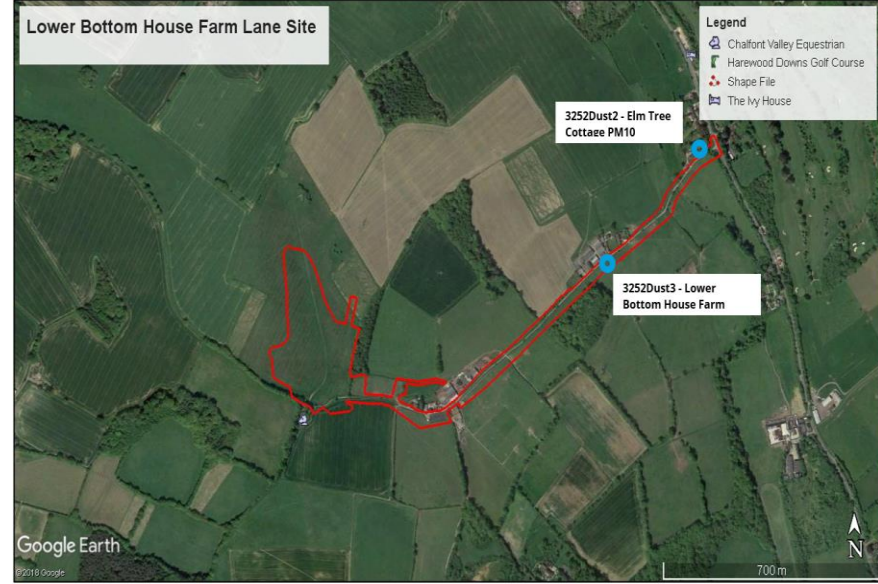
Chalfont St Giles



Little Missenden



Lower Bottom House Farm Lane



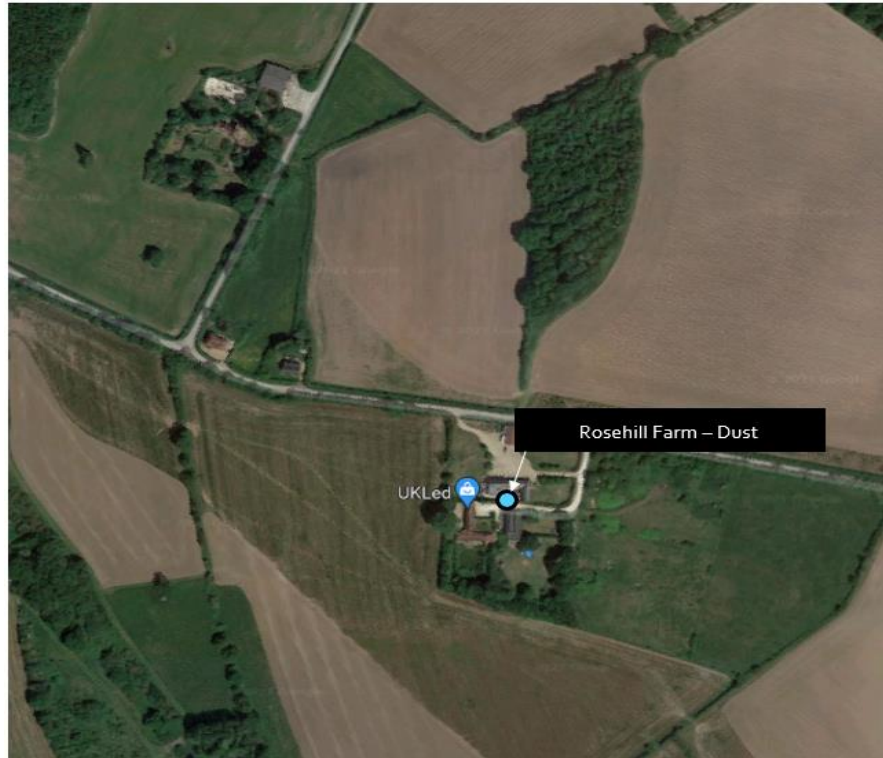
FCC-Sidings, CAL-AQMP2



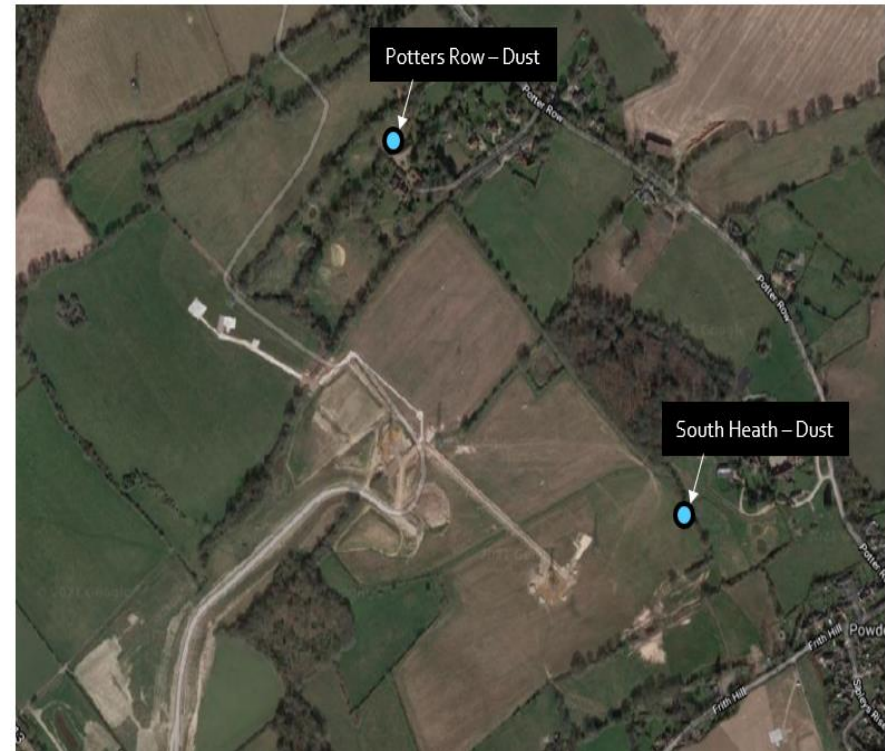
School End - Dust & Chetwode/Hermitage - Dust



Rosehill Farm - Dust



South Heath - Dust & Potters Row - Dust



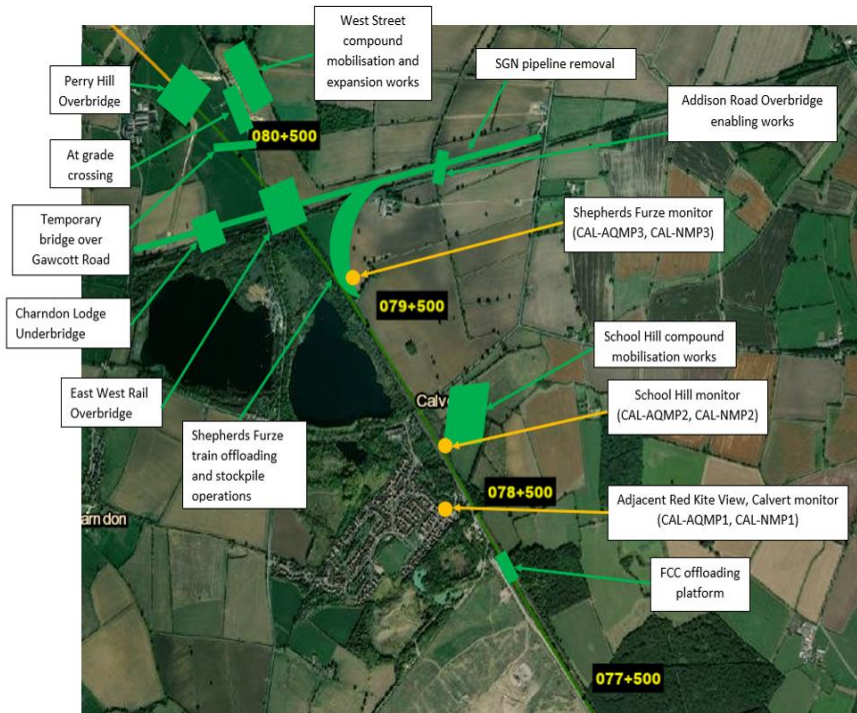
Hunts Green – Dust & Grimms Ditch – Dust



NCA Station 5 & NCA Station 6

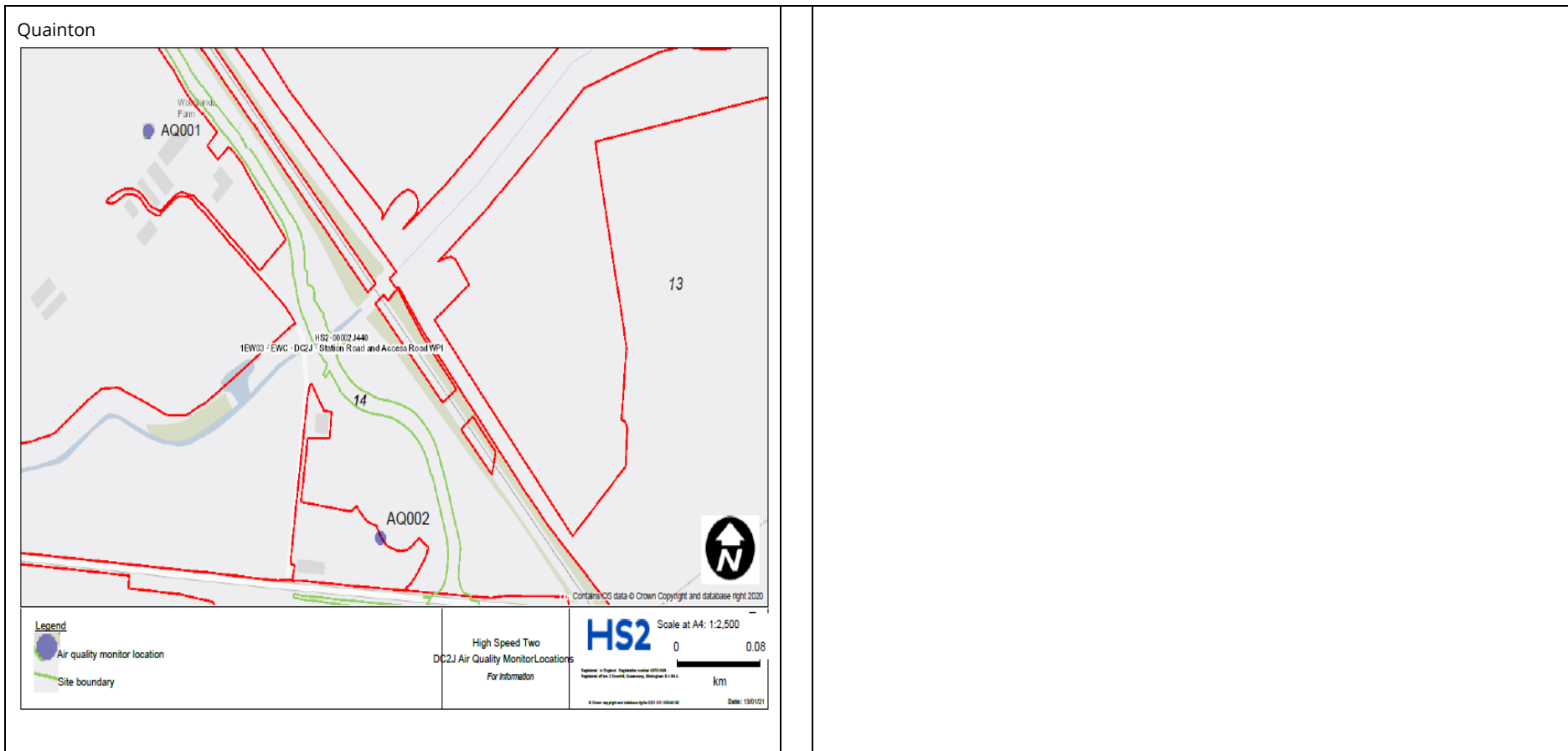


Calvert



(Calvert) – CAL-AQMP1 (FCC Sidings) and CAL-AQMP2 (School Hill)





Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and August 2021 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/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
CVV-AQMP1	503612, 189846	On the north boundary of LTP1	M	Yes	Yes	5.8	1.0	38.0	0	99.0
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	M	Yes	Yes	5.6	1.0	30.0	0	99.0
CHStP-AQMP1	500118, 193105	On the eastern boundary of the site with Chesham Lane	M	Yes	Yes	5.8	1.0	192.0	1	99.0
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	5.5	1.0	68.0	0	96.0
AMER-AQMP1	495367, 196722	On the north-eastern boundary of Amersham	M	Yes	Yes	5.8	1.0	34.0	0	100.0
AMER-AQMP2	495263, 196590	On the south-western boundary of Amersham	M	Yes	Yes	6.0	1.0	33.0	0	99.0
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	M	Yes	Yes	5.5	1.0	30.0	0	100.0
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	M	Yes	Yes	5.5	1.0	31.0	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/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
LMS-AQMP1	493190, 198848	On the south-west of the site	M	Yes	Yes	5.4	1.0	36.0	0	99.0
LMS-AQMP2	493407, 198731	On the south-east of the site	M	Yes	Yes	3.6	1.0	48.0	0	93.0
3252Dust2	498390, 195434	On the boundary with Elm Tree Cottage, Bottom House Farm Lane	M	Yes	No	-	-	-	-	00.0
3252Dust3	498100, 195145	On the site boundary opposite Lower Bottom House Farm	M	Yes	No	7.6	1.0	66.5	0	98.4
AQ001	51.886029, -0.963654	Woodlands Farm	M	Yes	No	5.9	1	97	0	100.0
AQ002	51.883233, -0.960381	Woodlands Cottage	M	Yes	No	6.5	1	39	0	100.0
FCC-SIDINGS	469040, 224261	Adjacent Red Kite View, Calvert	M	Yes	Yes	7.1	2.0	26.0	0	14.3
CAL-AQMP2	469003, 224740	School Hill Compound	M	Yes	Yes	14.9	1.2	445.4	1	86.3
School End – Dust	463666, 230049	School End, Chetwode	M	Yes	Yes	5.7	1.0	82.0	0	66.1
Chetwode/Hermitage – Dust	463936, 229521	Hermitage, Chetwode	M	Yes	Yes	4.7	1.0	27.0	0	100.0
Rosehill Farm – Dust	464368, 228939	Old Stable Cottage, Rosehill Farm, Chetwode	M	Yes	Yes	9.0	1.5	108.2	0	96.05
South Heath – Dust	490534, 202014	Bury Farm, South Heath	M	Yes	Yes	4.4	1.0	11.0	0	99.5

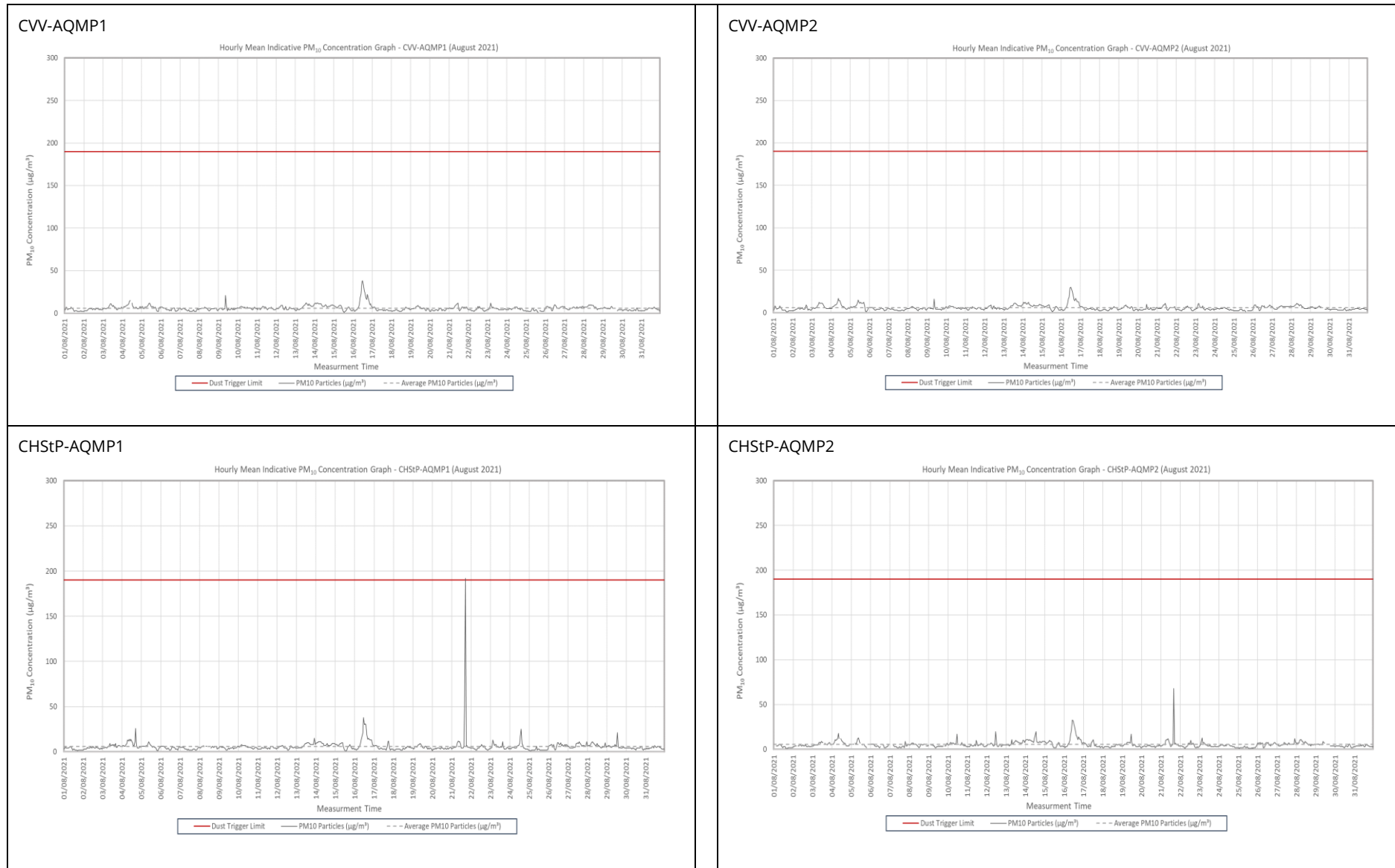
Monitoring site ID	Coordinates (X,Y)	Location description	Dust risk rating for site	Monitoring site active during period	Change to site since previous period report	Mean 1-hour PM ₁₀ concentration (µg/m ³)	Minimum 1-hour PM ₁₀ concentration (µg/m ³)	Maximum 1-hour PM ₁₀ concentration (µg/m ³)	Number of 1-hour periods exceeding trigger level of 190 µg/m ³	Data capture (%)
Potters Row - Dust	490075, 202502	Potters Row, South Heath	M	Yes	Yes	18.3	3.0	199.0	1	100.0
Hunts Green - Dust	489135, 203468	Leather Lane, The Lee, South Heath	M	Yes	Yes	4.7	1.0	14.0	0	98.0
Grimms Ditch - Dust	489511, 203611	The Lee, South Heath	M	Yes	Yes	4.0	1.0	8.0	0	41.2
NCA Station 5 - Dust	487974, 205794	Chesham Lane, The Lee, Wendover	M	Yes	Yes	4.0	1.0	9.0	0	44.9
NCA Station 6 - Dust	487574, 205787	Chesham Lane, The Lee, Wendover	M	Yes	Yes	4.2	1.0	11.0	0	40.2

Table 2: Summary of exceedances during period (August 2021)

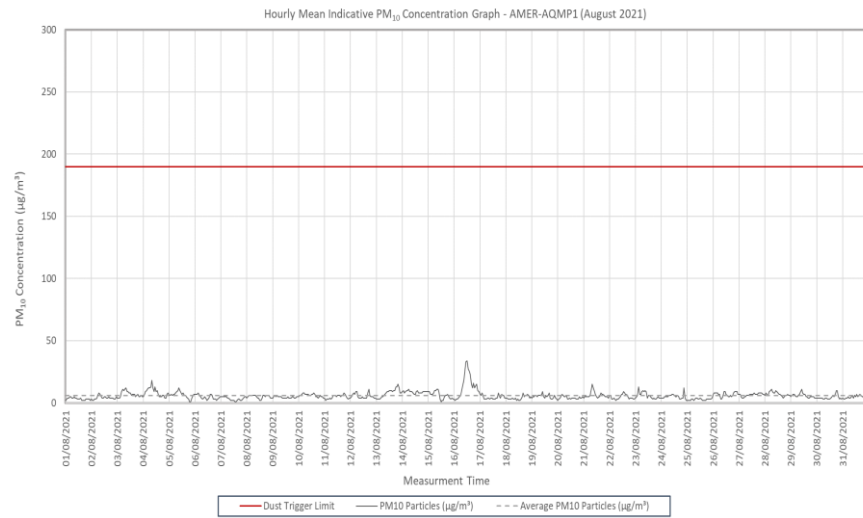
Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
CHStP-AQMP1	21/08/2021 16:01-17:00 - 198 µg/m ³	At the time of the alert, no dusty activities were being undertaken on the site. No further alerts were received; therefore on investigation indicates that the alert was not linked to site activities, but rather a localised disturbance from a vehicle on nearby Chesham Lane, or the road sweeper.	N/A (continue to deploy mitigation measures outlined in the CoCP)
CAL-AQMP2	19/08/2021 10:01-11:00 445.4 µg/m ³	Team at School Hill compound were contacted to confirm what works were ongoing at the time of the alert. Works included the reprofiling of the car park next to the dust monitor, in particular trimming of the surcharge previously placed Type 1. The alert is deemed to be as a result of these works. Mitigation was being deployed, and no further alerts were received.	The team have confirmed that they have a jet wash on standby to ensure the works are sufficiently mitigated is applied at all times.

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
Potters Row - Dust	23/08/2021 13:01-14:00 199.0 µg/m ³	There were no works being carried out on behalf of EKFB that day at Old Stable Cottage. On investigation it was noted that the Rosehill Farm were undertaking roof renovations, which are believed to be the cause of the alert.	N/A

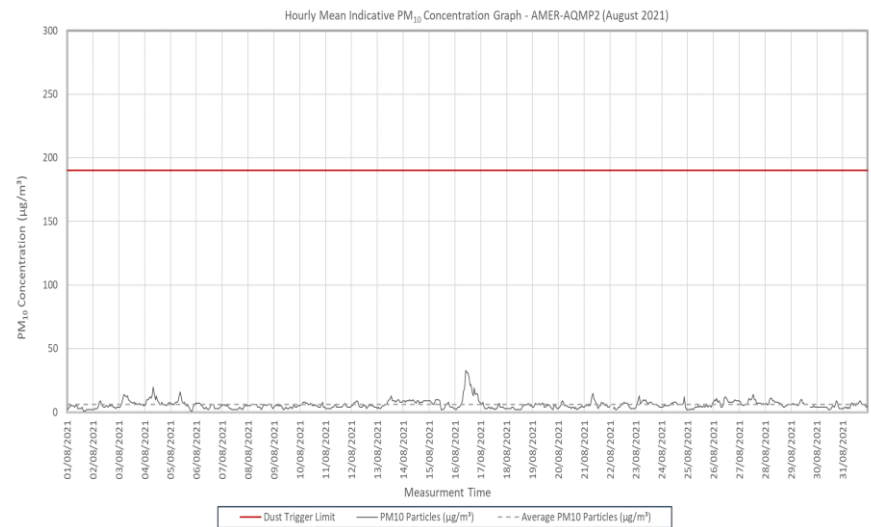
Figure 2: Continuous dust 1-hour mean indicative PM₁₀ concentration for August 2021



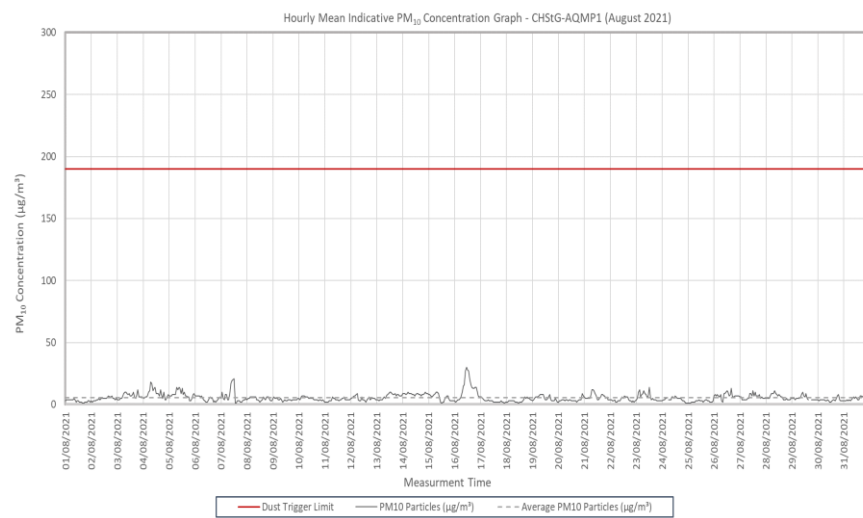
AMER-AQMP1



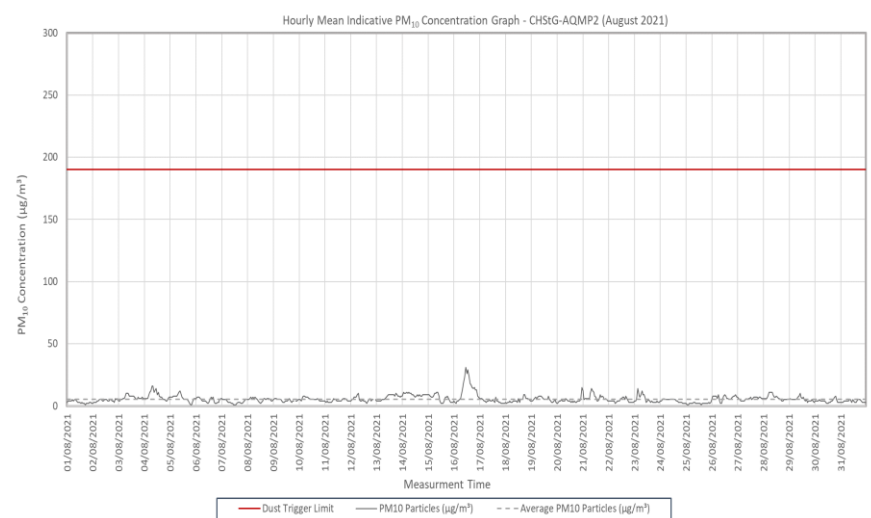
AMER-AQMP2



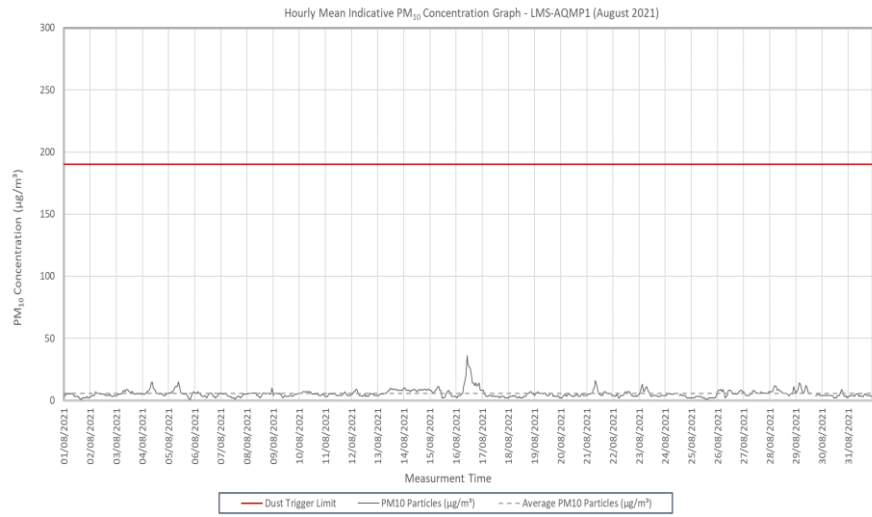
CHStG-AQMP1



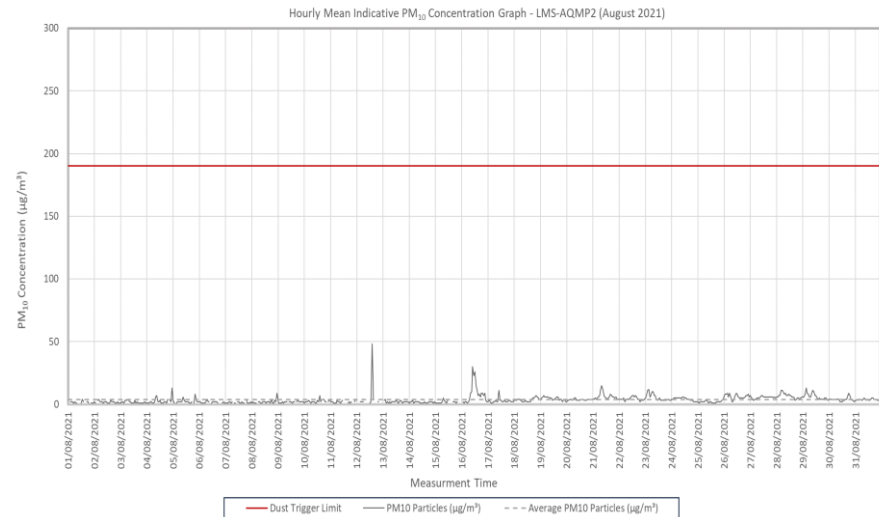
CHStG-AQMP2



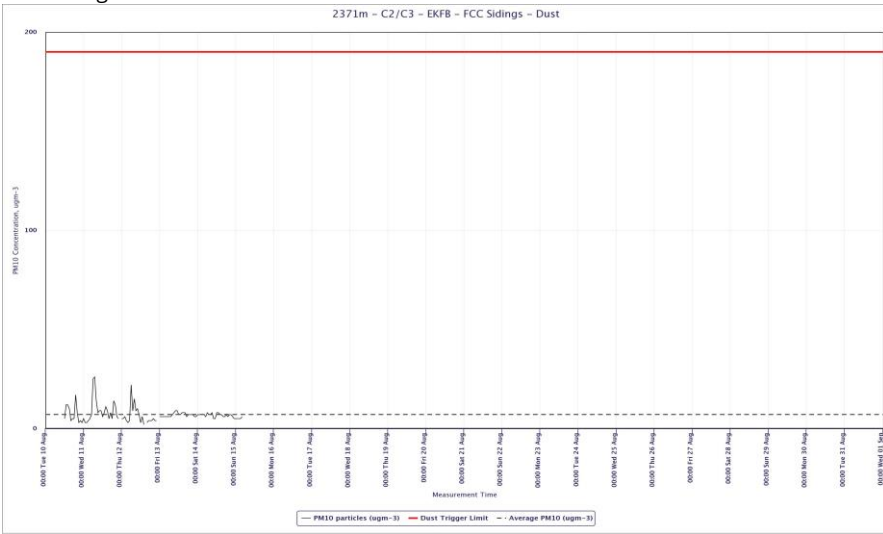
LMS-AQMP1



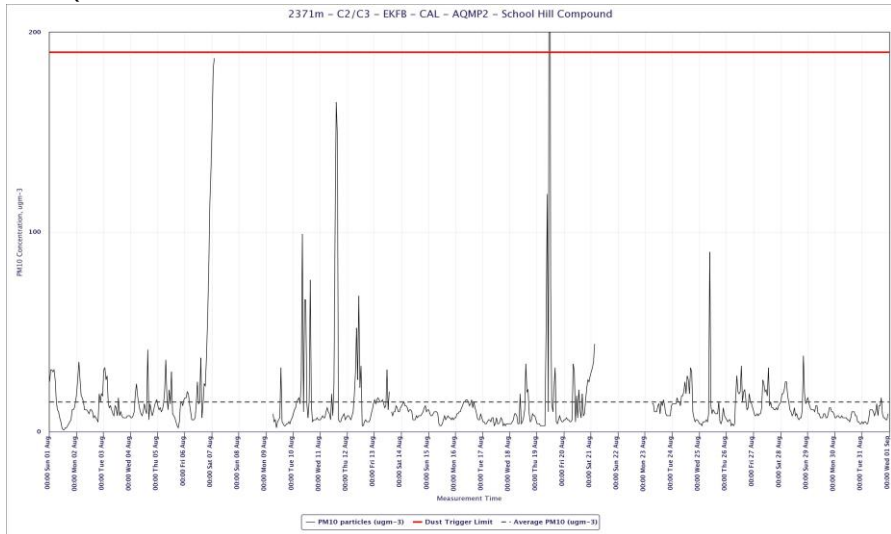
LMS-AQMP2



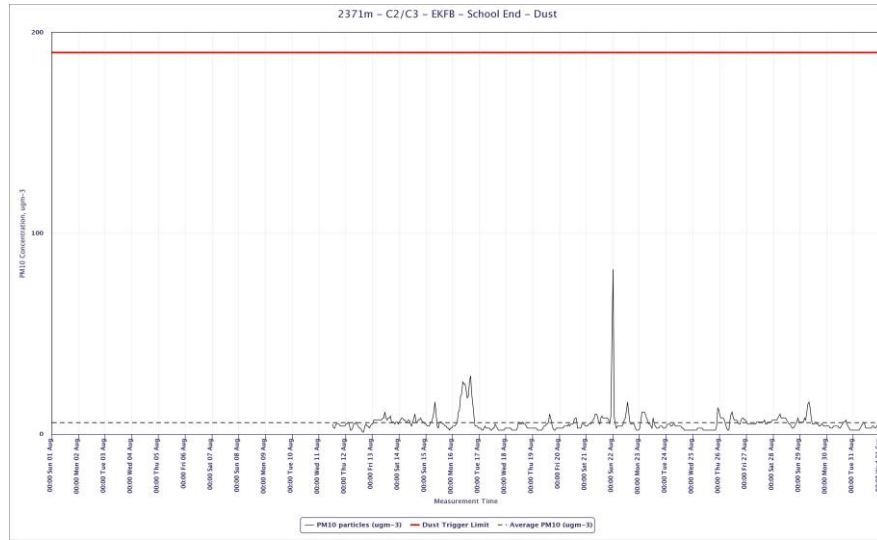
FCC-Sidings



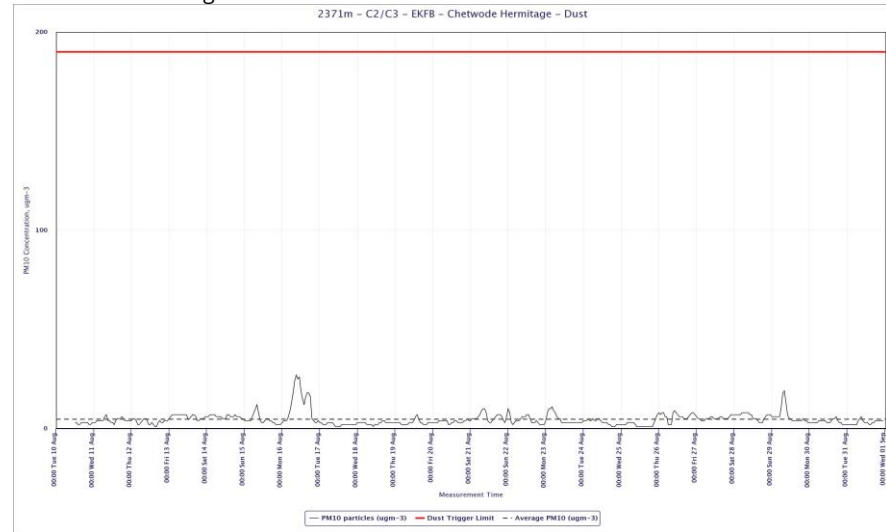
CAL-AQMP2



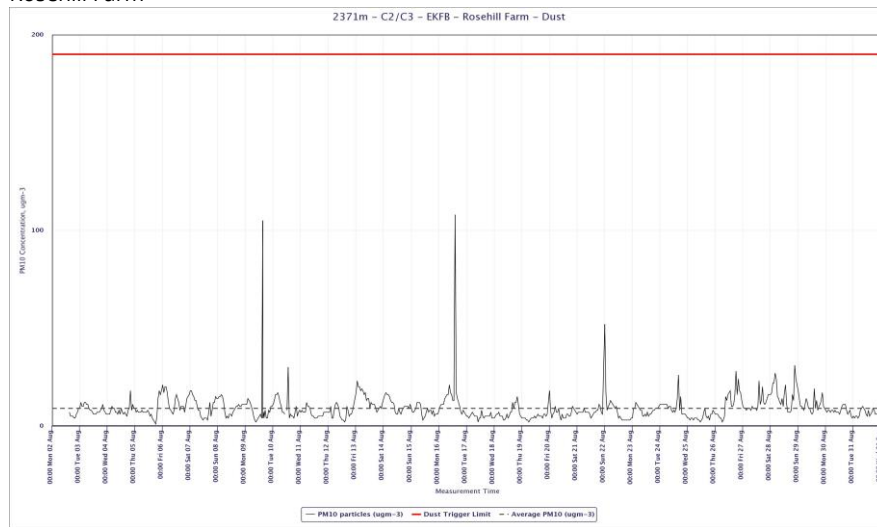
School End



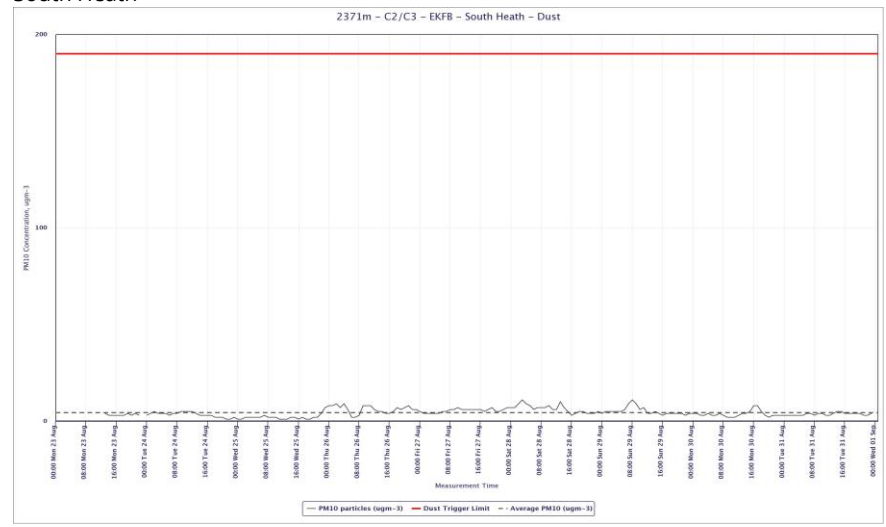
Chetwode/Hermitage



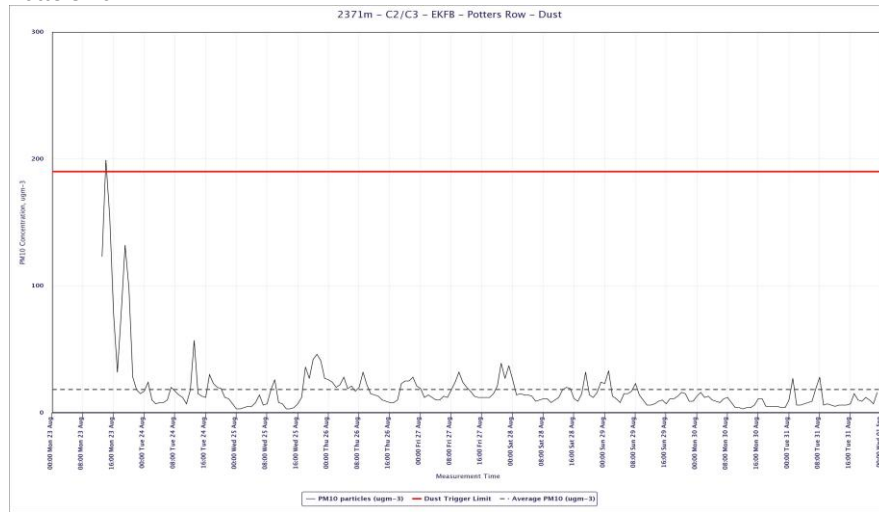
Rosehill Farm



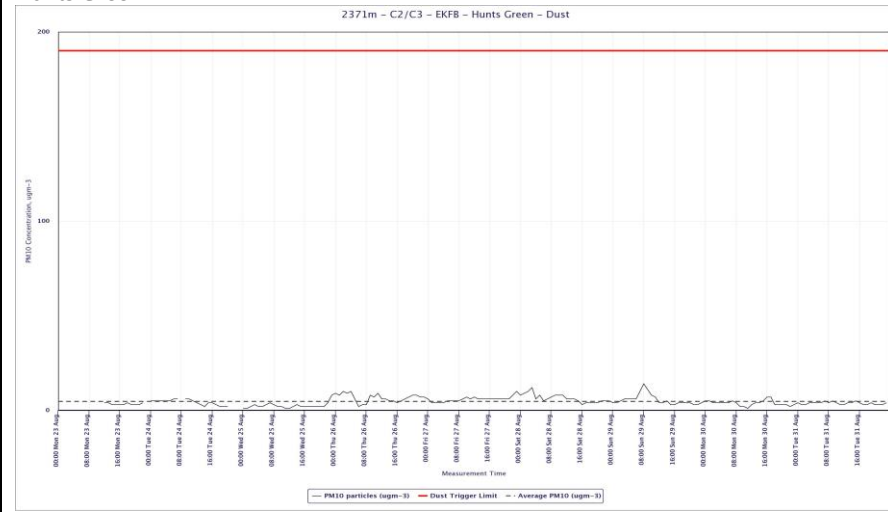
South Heath



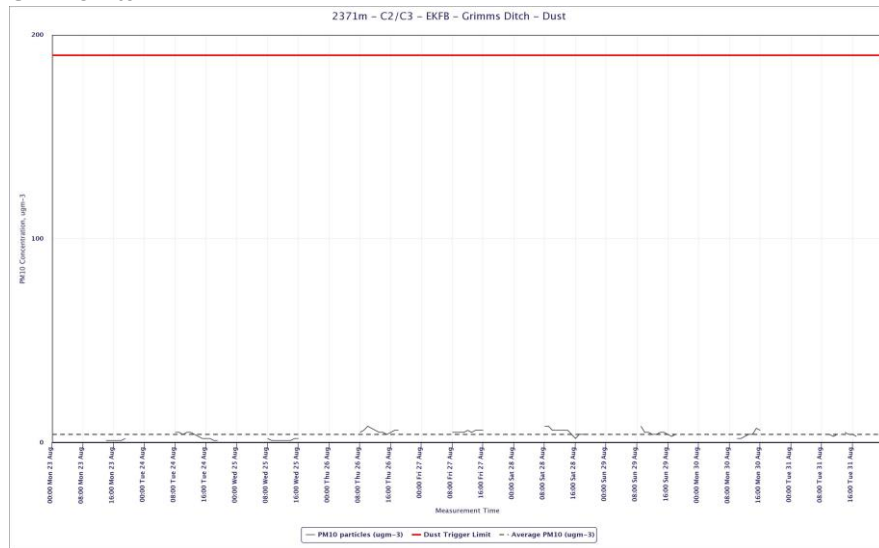
Potters Row



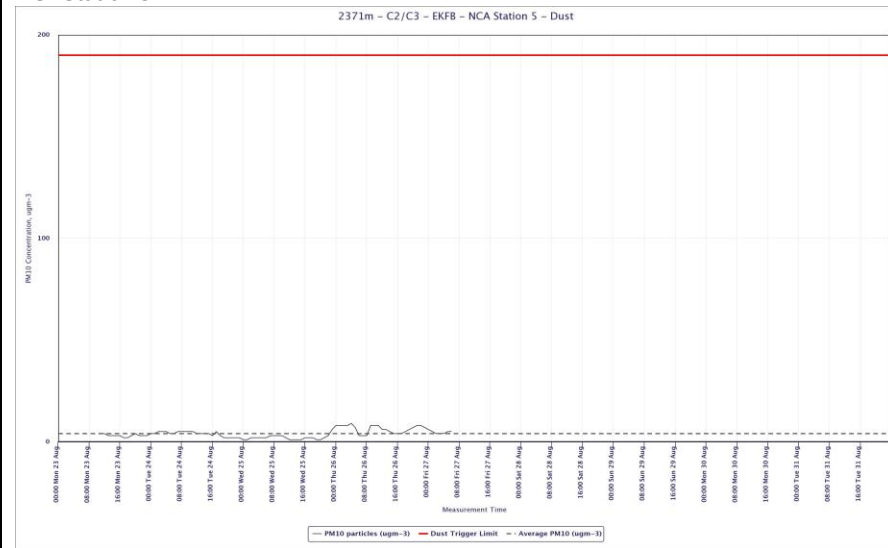
Hunts Green



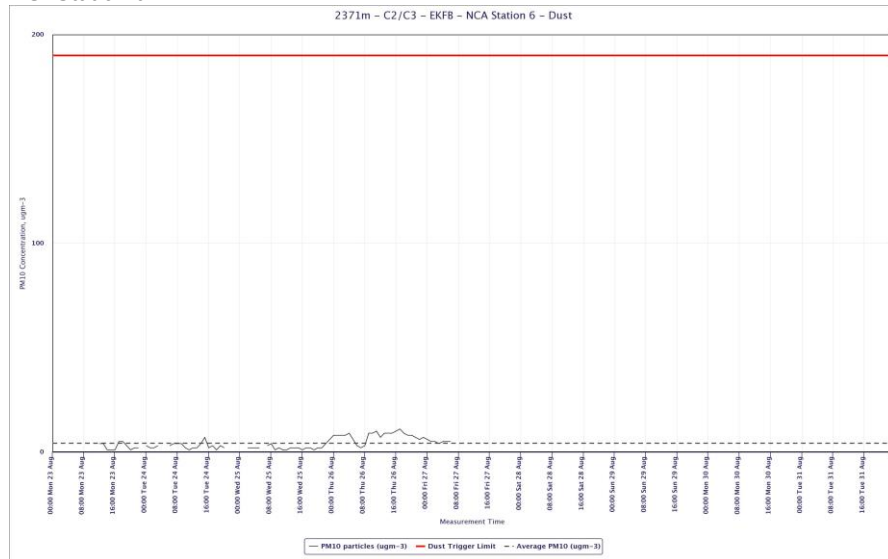
Grimms Ditch



NCA Station 5



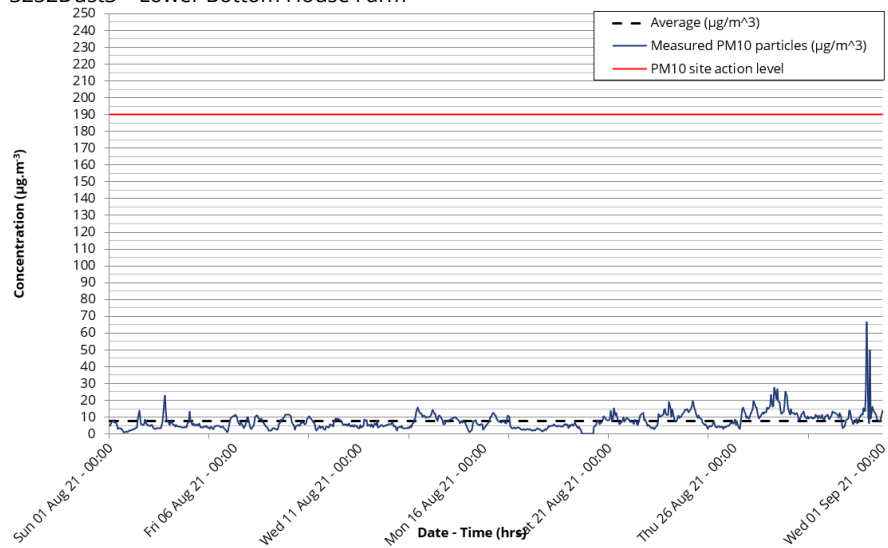
NCA Station 6



3252Dust2 - Elm Tree Cottage

No Data

3252Dust3 - Lower Bottom House Farm



AQ001

