

Air Quality and Dust Monitoring Monthly Report – March 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 March 2021.
- 1.1.2 Figures 1 to 6 in Appendix A presents the current worksites together with the dust monitoring locations for March 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 the end of September 2021. The current worksites at Colne Valley Viaduct (CVV) LTP1, Chalfont St Peter Vent Shaft, Amersham Vent Shaft, Chalfont St Giles Vent Shaft, Little Missenden Vent Shaft, Lower Bottom House Farm Lane and DC2J Haul Road and Compound site are presented in Appendix A, Figures 1 to 7. Activities for each worksite during March 2021 included:

Colne Valley Viaduct (CVV) LTP1:

- Utilities: Sections: B1, B5, B7, B8 and B11;
- Affinity Water Access Road: earthworks and drainage;
- DWSC Access road: earthworks and drainage;
- DWSC Compound: compound operation and desanding compound;
- Haul road 29,150 - 29,400: civil works, earthworks and drainage;
- Haul road 28,220 - 29,200: preparation works, earthworks, and drainage;
- Ground investigation works: GI works and overwater GI works;
- Cofferdam Sheet Piling: piling plant and support plant;
- INNS – River Colne to GUC: removal works;
- Permanent main piling works: boring pile, desanding pile bore at pile position, installing reinforcement cage and concreting pile, bored pie break-down to prepare pile surface, grout curtain around viaduct pile groups maintenance plant;
- A412 Crossings: Main works, finishing works and fencing; and
- Thames water diversion.

Chalfont St Peter Vent Shaft:

- Stockpile management: at ventilation shaft site and management of temporary stockpile;
- D-wall works: D-wall excavation, rebar and concreting; and

- Operation of all auxiliary plant.

Amersham Vent Shaft:

- Site installations;
- Construct bell mouth, gate & wheel wash at site entrance;
- Construct new footpath;
- Construct internal site roads & car park;
- Car park finishes, utilities & drainage;
- Install gates & access road to site/offices;
- Install edge protection posts and fence above retaining wall; and
- Excavate to shaft piling platform level (stage 1).

Chalfont St Giles Vent Shaft

- General site activity: general plant;
- Earthworks: stockpile management;
- Ground pre and post treatment: drilling and grouting;
- D-wall works: civil works, excavation, construct guidewalls, desanding, mud treatment, concreting, delivery and assembly;
- Car park finishes, utilities & drainage;
- Install gates & access road to site/offices;
- Install edge protection posts and fence above retaining wall; and
- Excavate to shaft piling platform level (stage 1).

Little Missenden Vent Shaft

- Construct pond;
- Construct storage, reinforcement, crane bases & workshop areas;
- Surface water drainage & other internal drainage;
- Install piling mat & other hardstanding;
- Construct permanent retaining wall around permanent site around shaft;
- Sites roads and car parking;
- Water recharge wells & dewatering route to River Misbourne;
- Construct water treatment unit with settlement tank;
- Construct 2.4m high site hording and fence;
- Establish satellite compound offices, welfare facilities & stores;
- Bellmouth permanent surfacing works; and
- Construction of Swales/ditches/ponds/WTP.

Lower Bottom House Farm Lane:

- Earthworks including excavation, stockpiling, and material movement;

- Construction works, including new road haul road, topsoil strip, cut/fill placing and compaction, utility diversions, installations of ducting and drainage, lay CBGM, installation of 1 no. temporary bridge, road signage and landscaping; and
- Track out activities with up to 10 – 50 HGV (>3.5 t) trips anticipated in any one day.

DC2J Haul Road and Compound site:

- Construction of a 4.6km long access road between Quainton and Greatmoor Sidings; and
- The construction of a satellite compound at the southern end of the access road

- 1.1.5 Fourteen (14) dust monitors are installed around the worksites, where demolition, earthworks, construction and trackout activities are underway. Two (2) are located at the CVV LTP1 compound, two (2) are located at the Chalfont St Peter worksite, two (2) are located at the Amersham worksite, two (2) are located at the Chalfont St Giles worksite, two (2) are located at the Little Missenden worksite, two (2) are located at Lower Bottom House Farm Lane site and two (2) are located at the DC2J Haul Road and Compound worksite. The two monitors at the Little Missenden worksite were installed on 04/03/2021 and the two monitors at the Chalfont St Giles worksite were installed on 17/03/2021. Dust Risk Assessments for each worksite returned a medium dust risk rating.
- 1.1.6 Dust monitoring locations and results for March 2021 are presented in Appendix B, Table 2, together with a line chart of monthly data from each dust monitor presented in Figures 7 to 20. 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 PM₁₀ concentrations of 190 µg/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 There were two (2) dust trigger alerts recorded during the monitoring period (March 2021). Trigger alerts are presented in Appendix B, Table 3. All other results were in line with expected ranges.
- 1.1.9 Data capture for monitors LM-AQMP1 and 2252Dust2 was below 90% for the month of March 2021. Data missing for monitor LMS-AQMP1 was due to technical issues and/or loss of power due to insufficient renewable energy powering the monitor. Data missing at monitor 2252Dust2 was due to an ongoing power interruption. All concerned issues have been or are in the process of being resolved.
- 1.1.10 Table 1 provides a summary of the complaint information related to dust or air quality received during this reporting period (March 2021), together with the findings of any related investigations.

Table 1: Summary of complaints received during March 2021

Complaint Reference No.	Worksite Reference	Description of complaint	Results of investigation
Comp1-Mar21	Lower Bottom House Farm Lane site	A resident notified Fusion (HS2 contractor) of some dust on their vehicle on 3 rd March 2021, after some night-time works in the vicinity.	Contractors have been reminded about the importance of good dust mitigation - ongoing dampening down and good housekeeping practices continue to be implemented in line with the CoCP.

Appendix A – Worksite and Dust Monitoring Locations


Figure 1 to Figure 6: Current monitoring locations and worksites within Buckinghamshire Council



Legend
 ● Dust Monitor □ District Borough Unitary Boundaries
 ■ Worksite

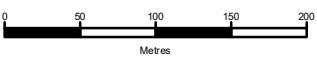
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Map Number
 Map Name
Worksite and Monitoring Locations at Colne Valley Viaduct, BC (Sheet 1)
 Buckinghamshire Council

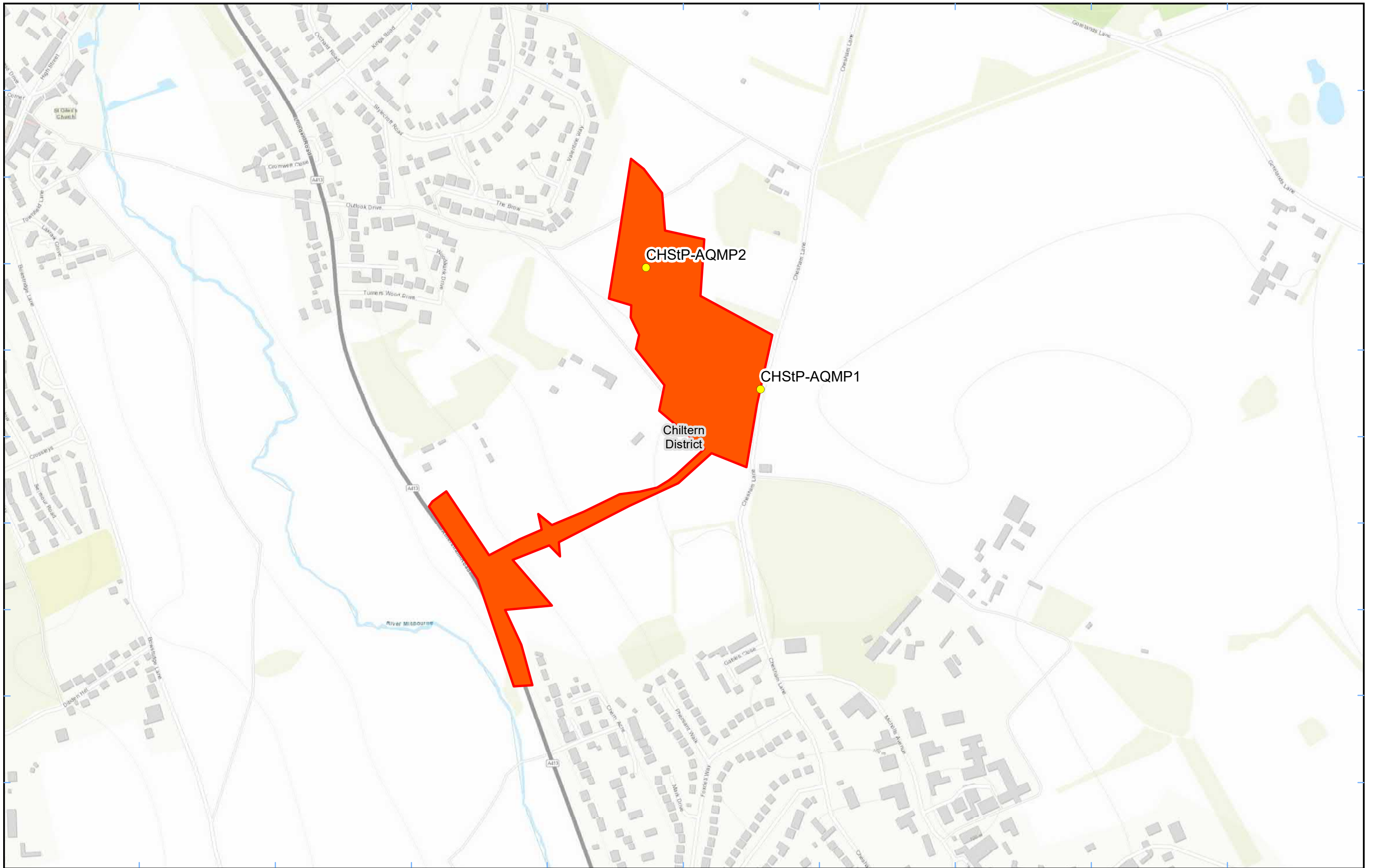

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Legend

- Dust Monitor
- District Borough Unitary Boundaries
- Worksite

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Map Number

Map Name

Worksite and Monitoring Locations at Chalfont St Peter, BC (Sheet 2)

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- Dust Monitor
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- Worksite

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Map Number Map Name Worksite and Monitoring Locations at Amersham, BC (Sheet 3)	Map Number Map Name Worksite and Monitoring Locations at Amersham, BC (Sheet 3)
Buckinghamshire Council	

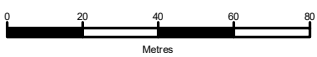


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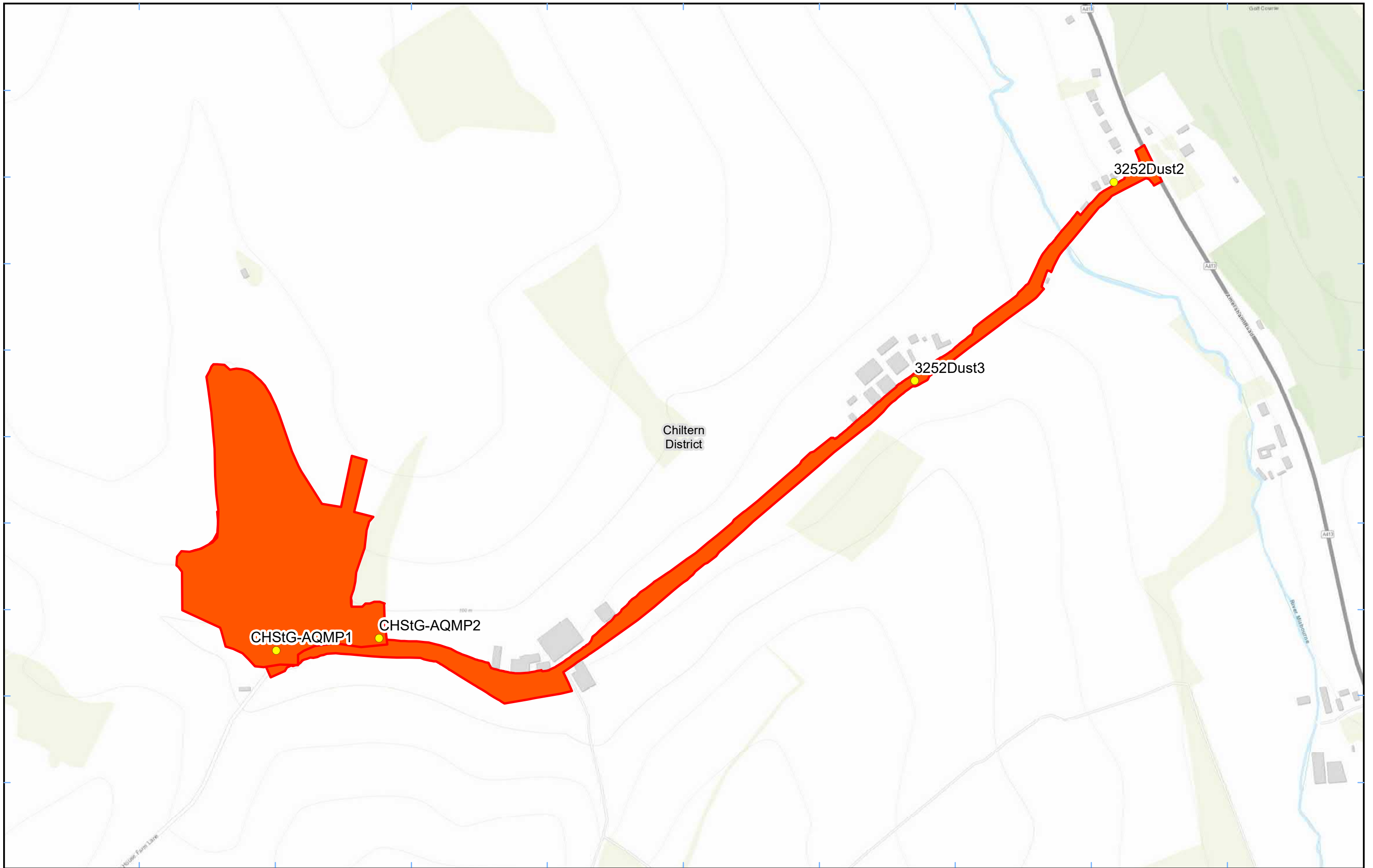


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Legend
 Dust Monitor
 Worksite
 District Borough Unitary Boundaries

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Map Number
 Map Name
**Worksites and Monitoring Locations
 at Chalfont St Giles and Lower Bottom
 House Farm Lane, BC (Sheet 4)**
Buckinghamshire Council

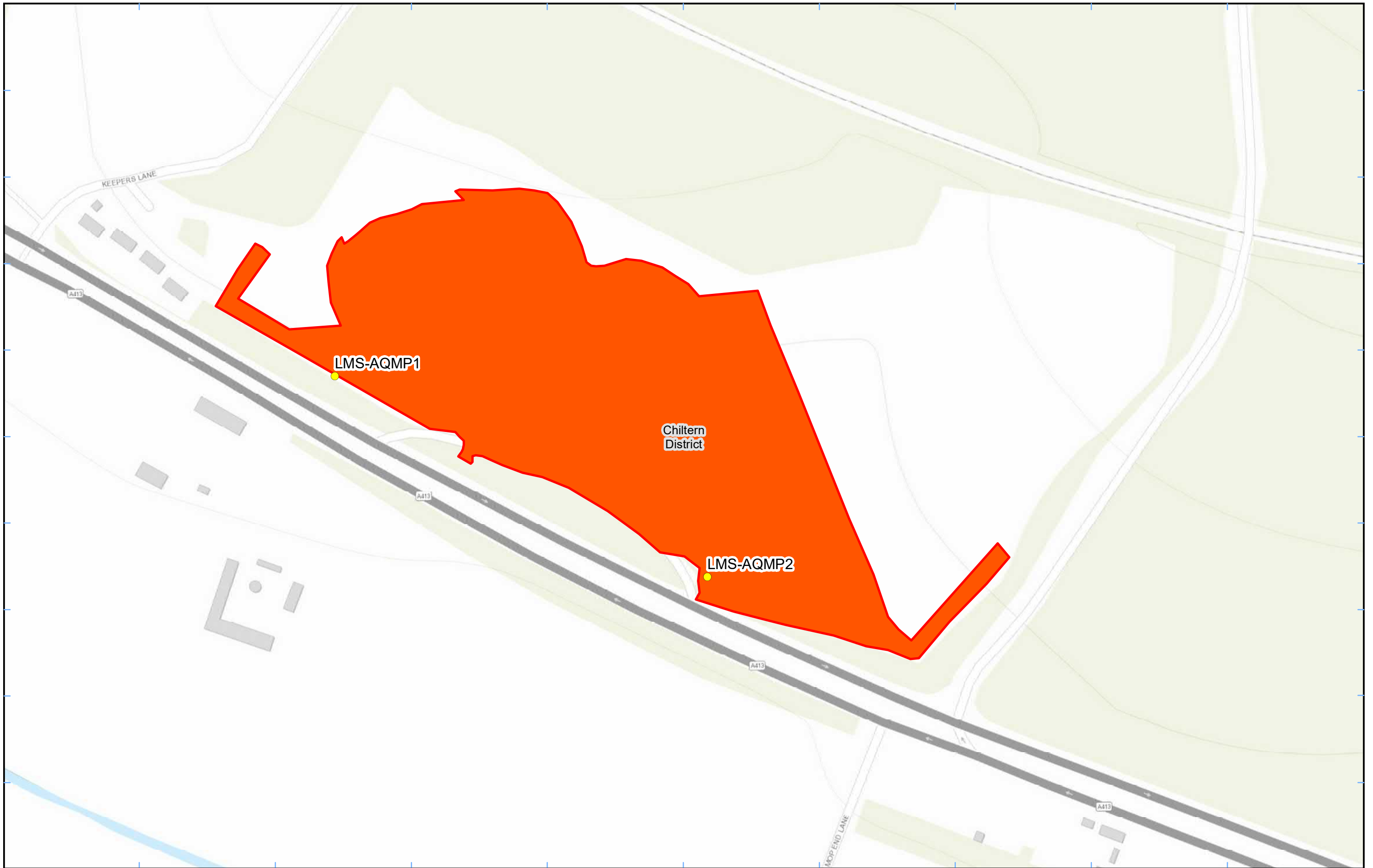
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Legend
 ● Dust Monitor
 □ District Borough Unitary Boundaries
 ■ Worksite

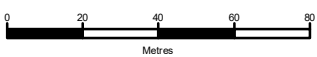
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Map Number
 Map Name
Worksite and Monitoring Locations at Little Missenden, BC (Sheet 5)
 Buckinghamshire Council

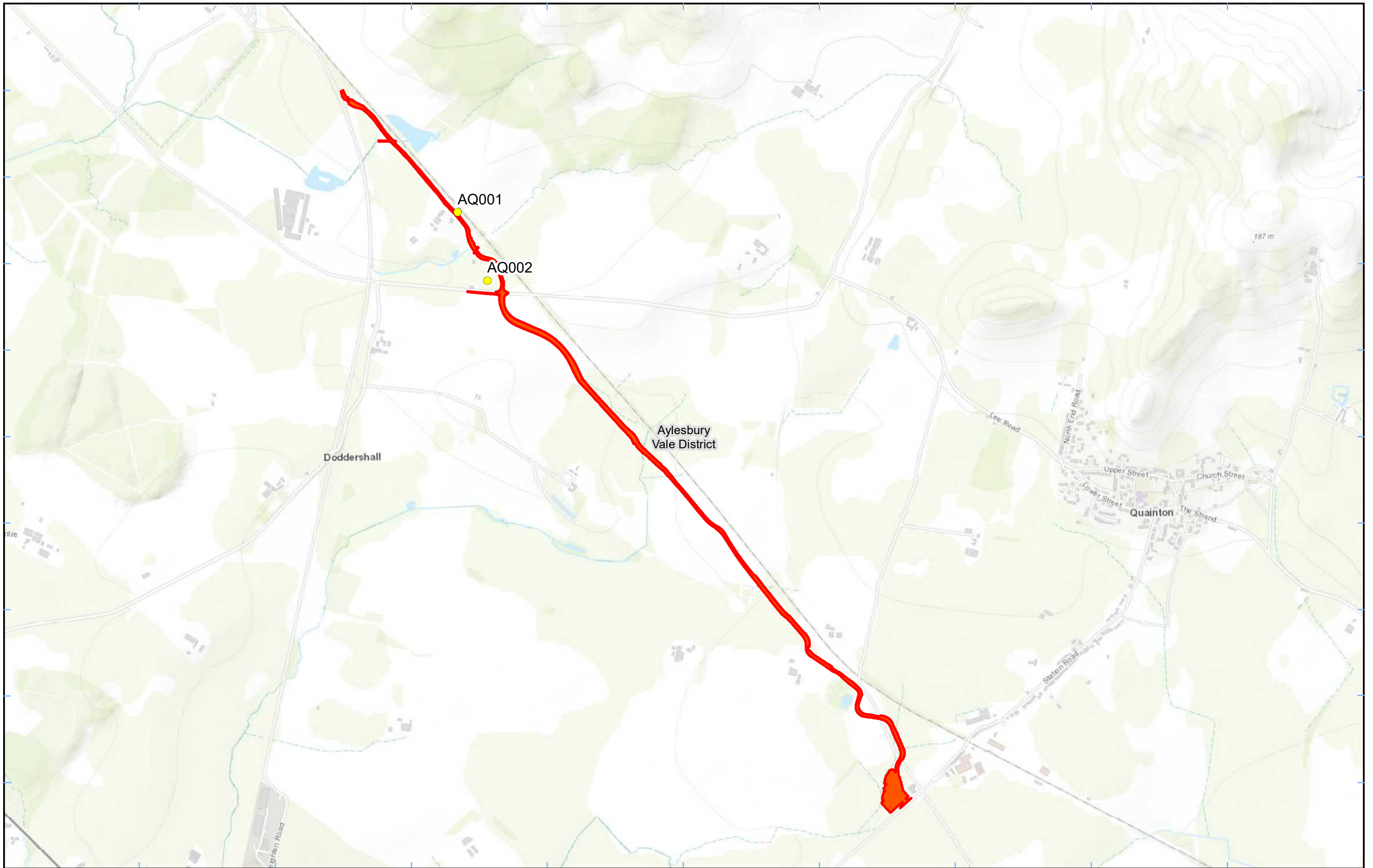

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Legend
 Dust Monitor  District Borough Unitary Boundaries
 Worksite

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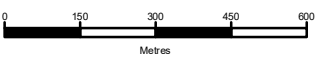
Map Number
 Map Name
**Worksite and Monitoring Locations
 at DC2J, BC (Sheet 6)**
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Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and March 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	14.5	1.0	113.0	0	99
CVV-AQMP2	503662, 189775	On the south boundary of LTP1	M	Yes	Yes	14.6	1.0	102.0	0	100
CHStP-AQMP1	500118, 193105	On the eastern boundary of the site with Chesham Lane	M	Yes	Yes	15.0	1.0	98.0	0	99
CHStP-AQMP2	499951, 193282	On the western boundary of the site	M	Yes	Yes	14.4	1.0	94.0	0	100
AMER-AQMP1	495418, 196738	On the north-eastern boundary of Amersham	M	Yes	Yes	14.0	1.0	92.0	0	100
AMER-AQMP2	495222, 196559	On the south-western boundary of Amersham	M	Yes	Yes	13.9	1.0	96.0	0	100
CHStG-AQMP1	497170, 194752	On the southern boundary close to Hobbs Hole Cottage	M	Yes	Yes	10.3	1.0	49.0	0	94
CHStG-AQMP2	497320, 194770	On southern boundary next to carpark	M	Yes	Yes	10.9	1.0	48.0	0	92
LMS-AQMP1	493190, 198848	On the south-west of the site	M	Yes	Yes	9.0	1.0	32.0	0	23
LMS-AQMP2	493407, 198731	On the south-east of the site	M	Yes	Yes	9.9	1.0	44.0	0	94

3252Dust2	498390, 195434	On the boundary with Elm Tree Cottage, Bottom House Farm Lane	M	Yes	No	11.3	0.4	134.9	0	86
3252Dust3	498100, 195145	On the site boundary opposite Lower Bottom House Farm	M	Yes	No	10.3	0.3	53.9	0	100
AQ001	471524, 221329	Woodlands Farm	M	Yes	No	15.0	1.0	320.0	2	100
AQ002	471654, 221030	Woodlands Cottage	M	Yes	No	14.1	1.0	110.0	0	100

Table 2: Summary of trigger alerts recorded during the monitoring period (March 2021)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
AQ001	02/03/2021 15:01 – 16:00: 244 µg/m ³	At the time of the trigger alert, no works were being carried out, and dust suppression was being implemented. It is unclear what the cause of the trigger may have been.	Ongoing implementation of dampening down and good housekeeping practices across the site.
	18/03/2021 11:01 – 12:00: 320 µg/m ³	On investigation it was noted by the site team that a resident was attempting to light a fire in close proximity to the monitor – as no dust activities were taking place during this time, it is thought that the alert received may relate to the resident's actions. No further triggers were received.	

Figure 7: Continuous dust 1-hour mean indicative PM₁₀ concentration for CVV-AQMP1 for March 2021

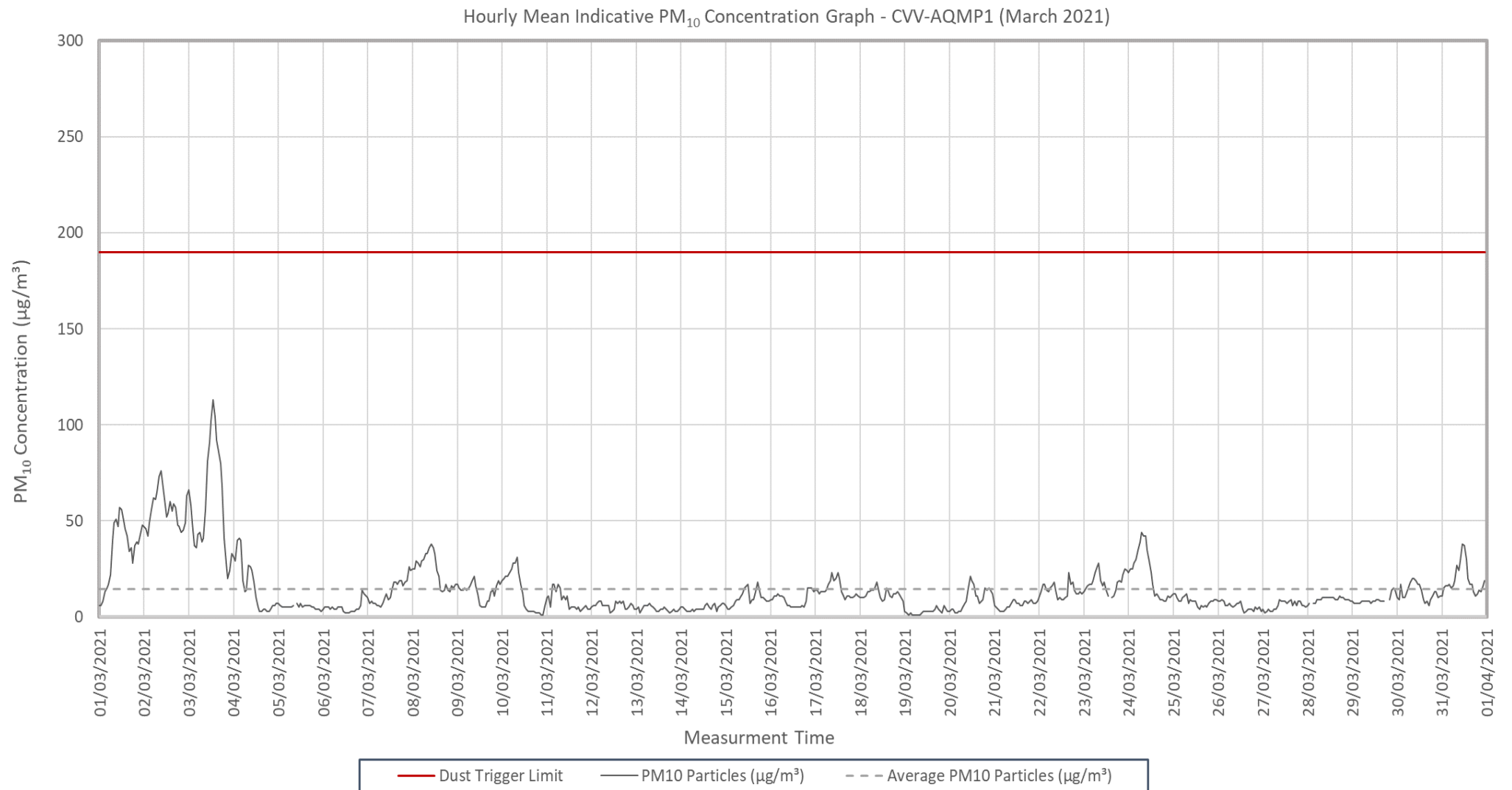


Figure 8: Continuous dust 1-hour mean indicative PM₁₀ concentration for CVV-AQMP2 for March 2021

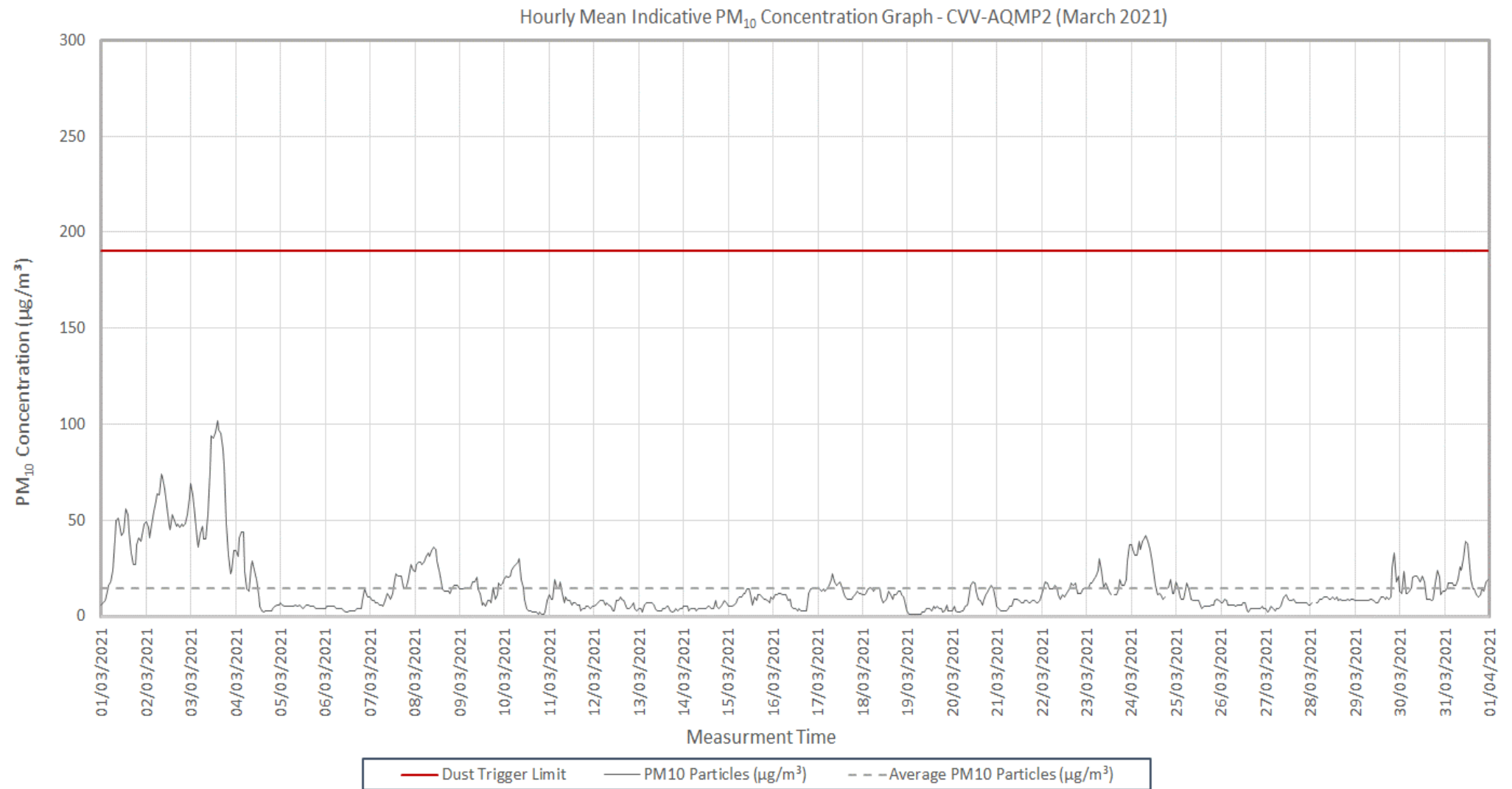


Figure 9: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP1 for March 2021

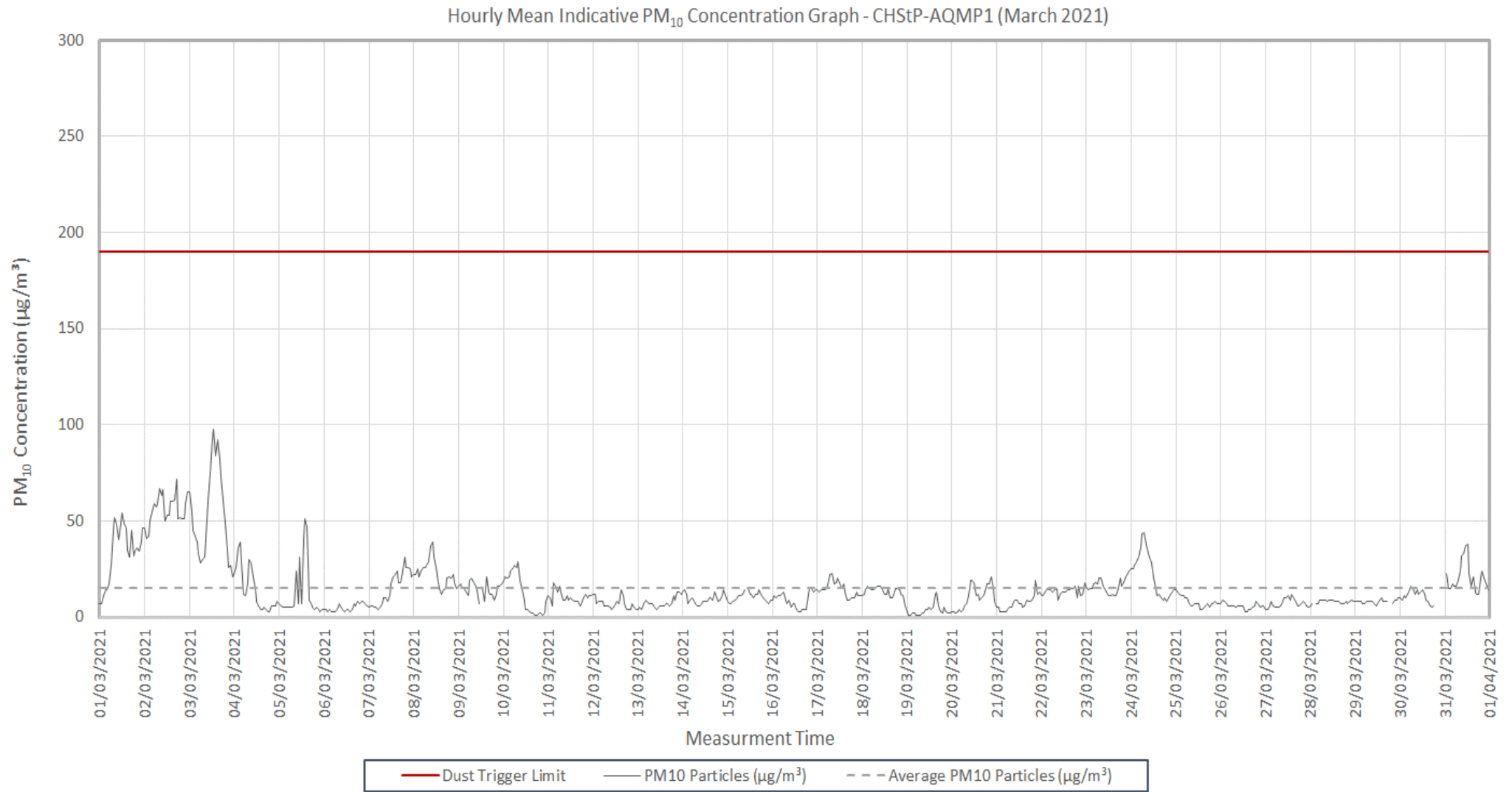


Figure 10: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP2 for March 2021

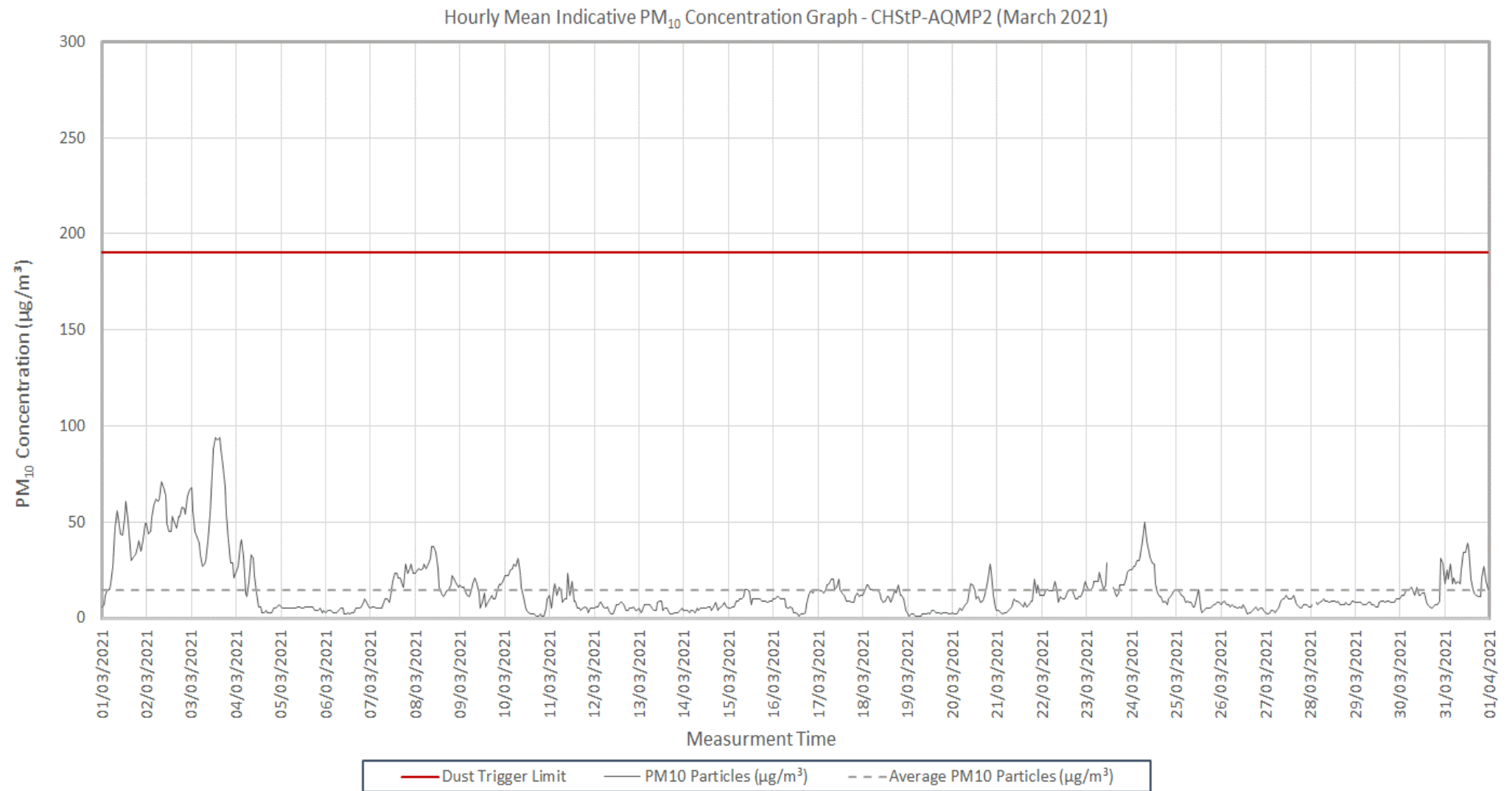


Figure 11: Continuous dust 1-hour mean indicative PM₁₀ concentration for AMER-AQMP1 for March 2021

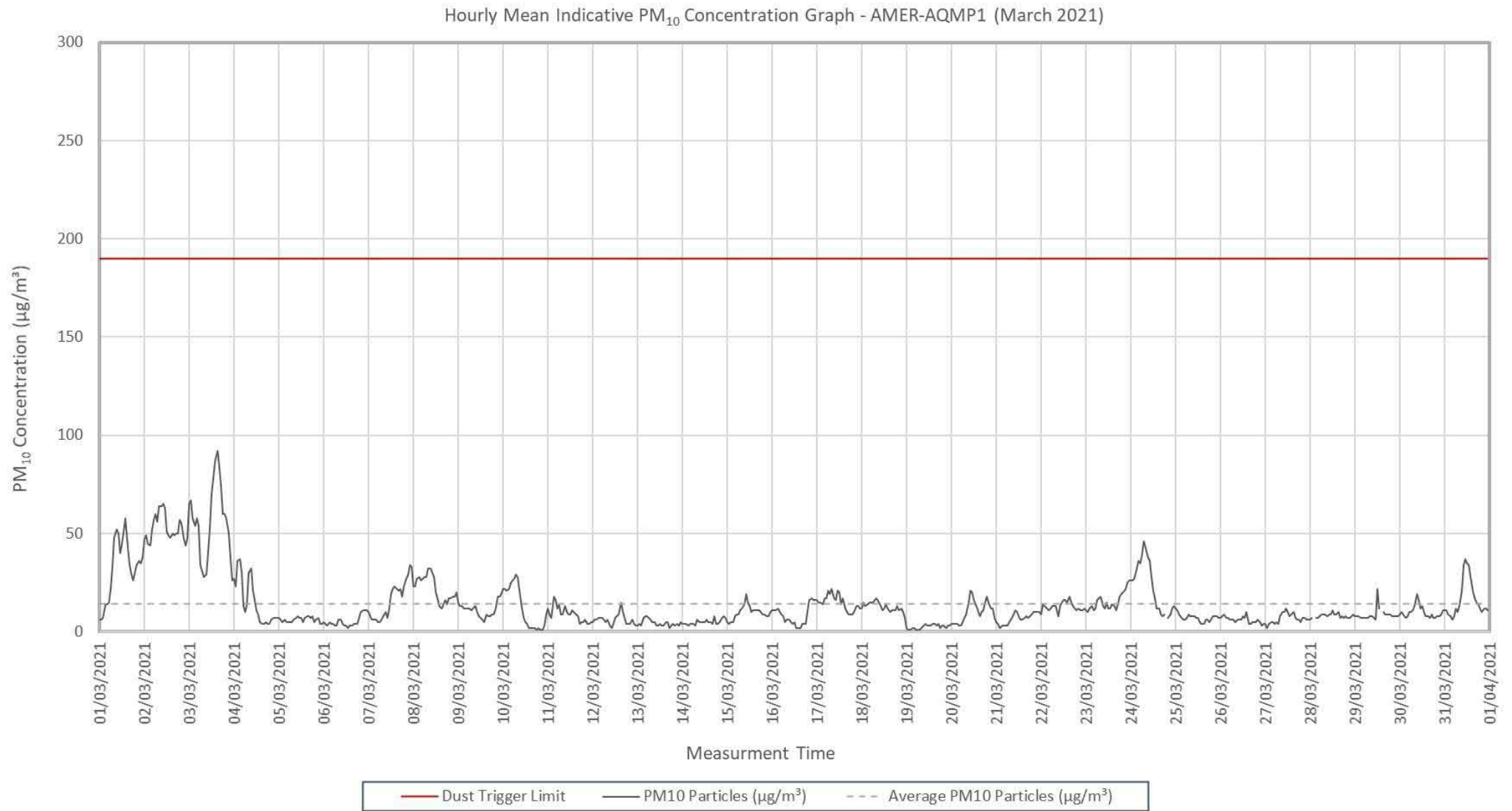


Figure 12: Continuous dust 1-hour mean indicative PM₁₀ concentration for AMER-AQMP2 for March 2021

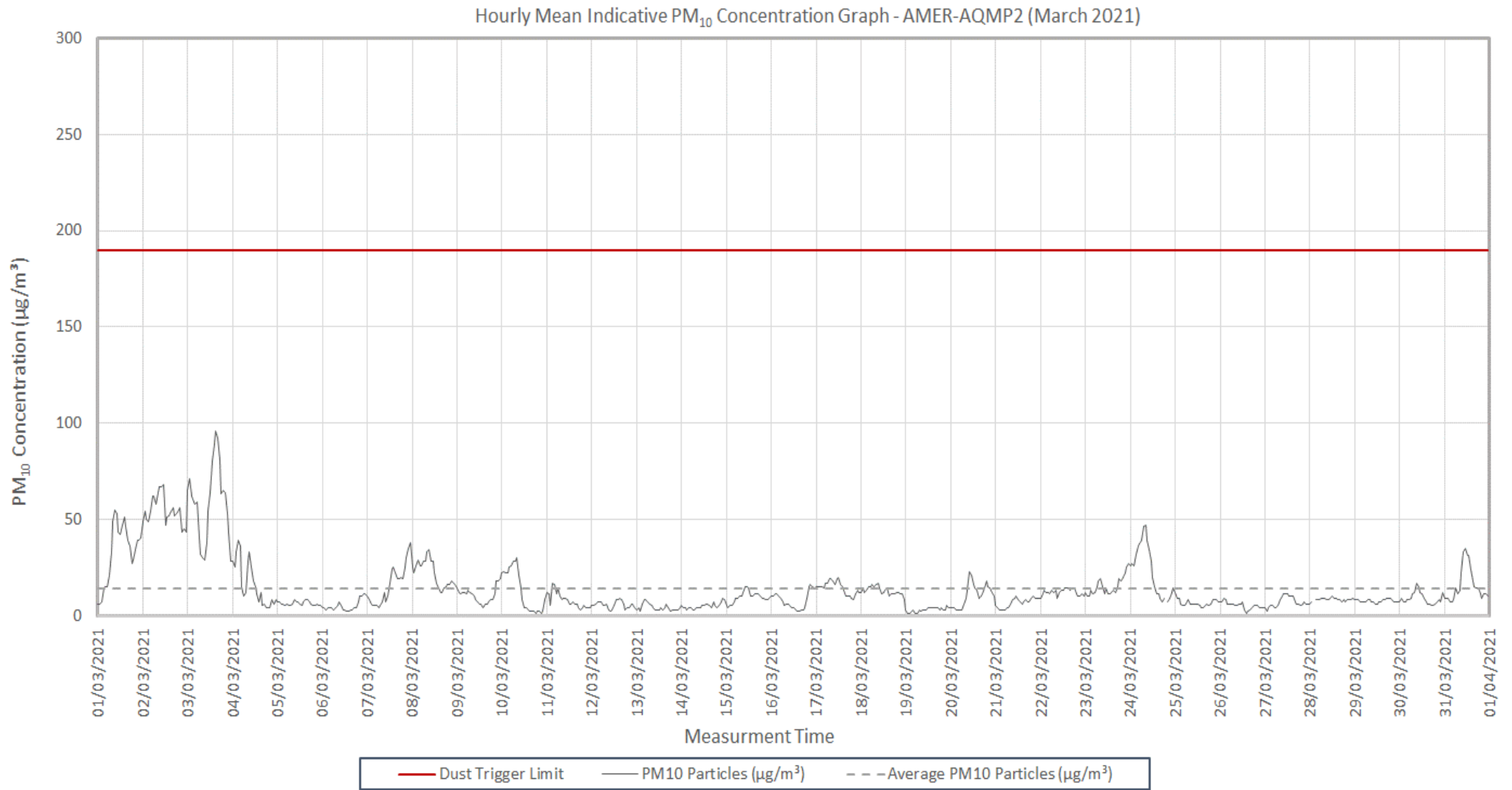


Figure 13: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP1 for March 2021

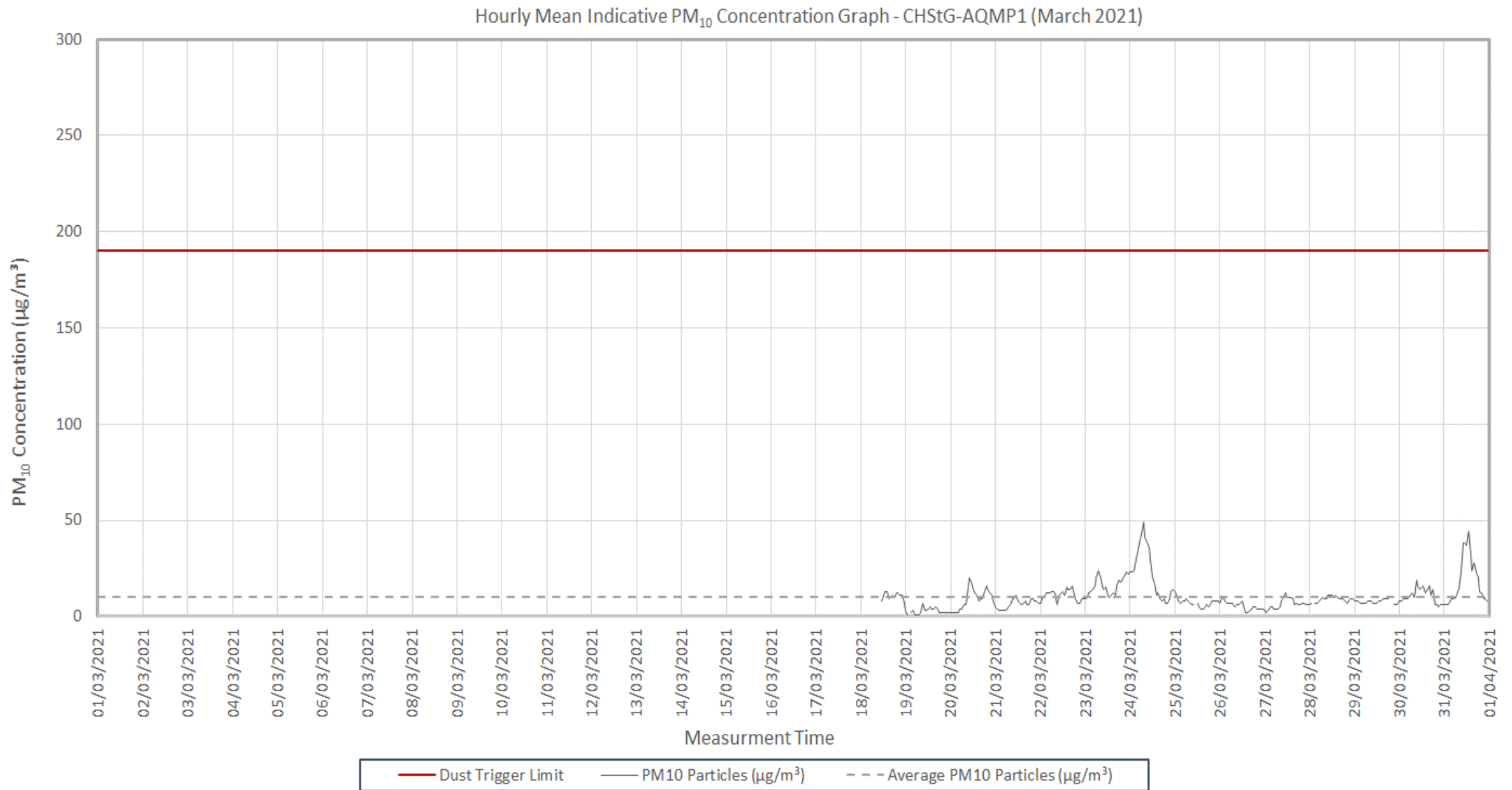


Figure 14: Continuous dust 1-hour mean indicative PM₁₀ concentration for CHStP-AQMP2 for March 2021

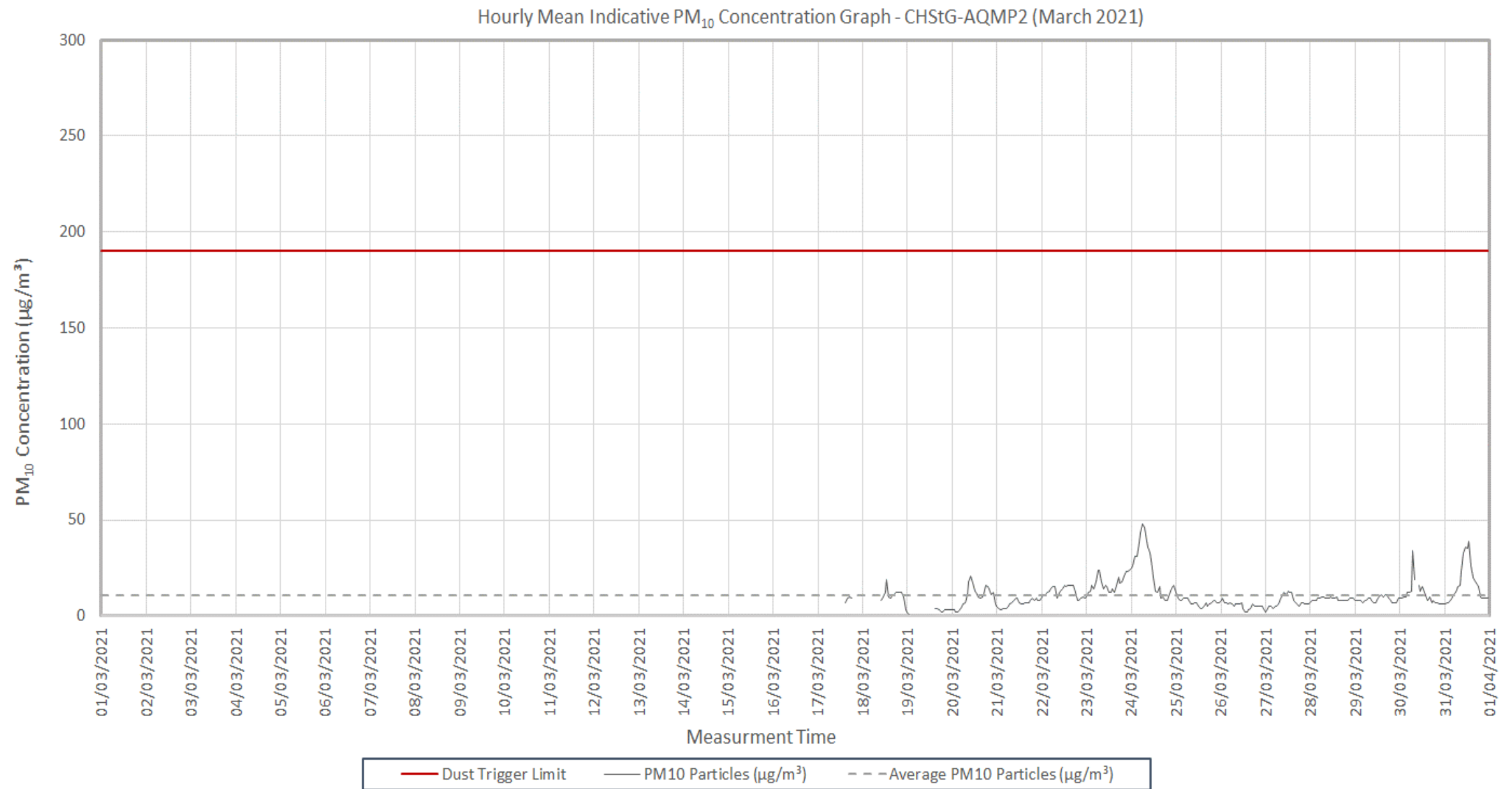


Figure 15: Continuous dust 1-hour mean indicative PM₁₀ concentration for LMS-AQMP1 for March 2021

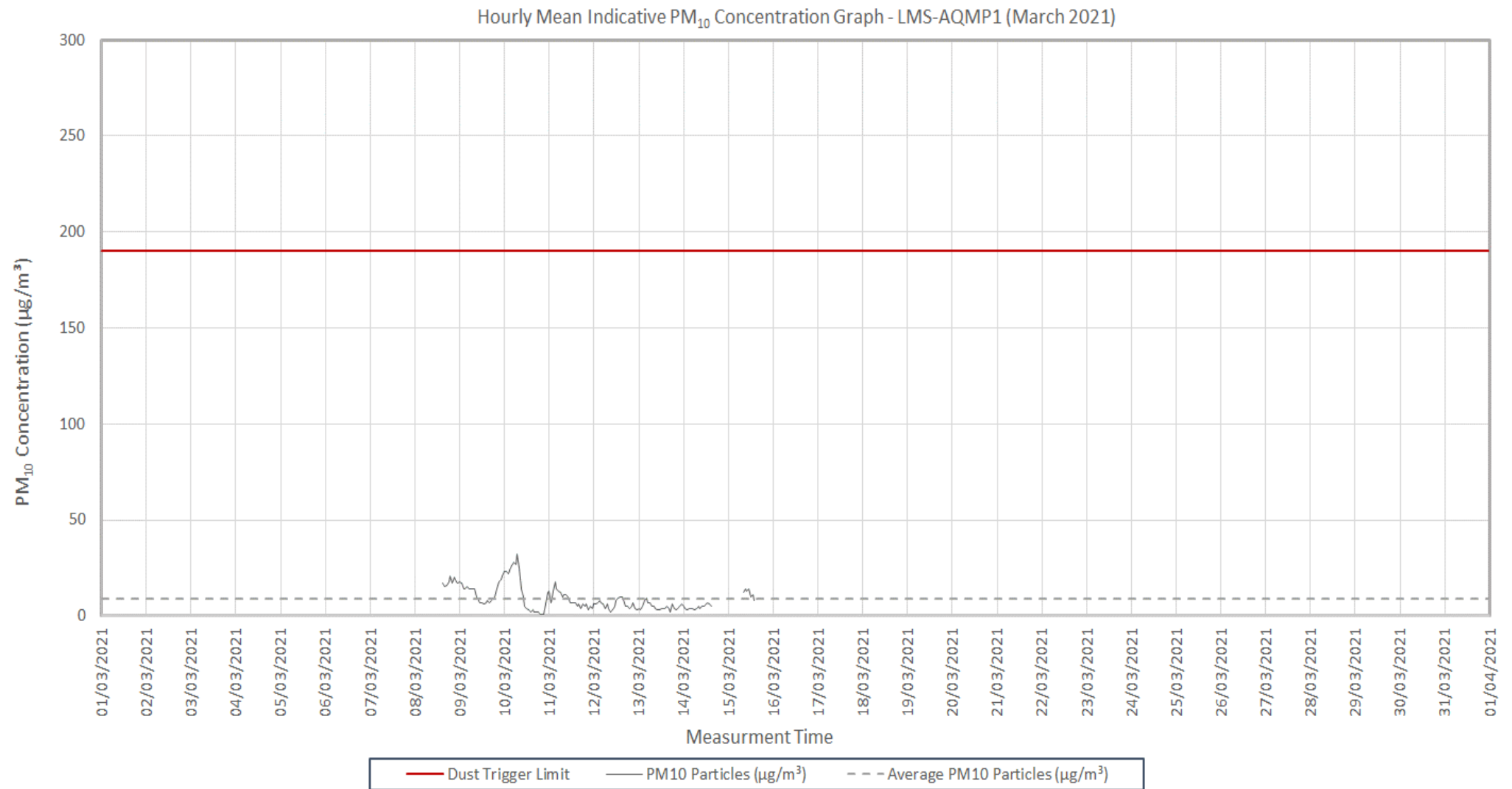


Figure 16: Continuous dust 1-hour mean indicative PM₁₀ concentration for LMS-AQMP2 for March 2021

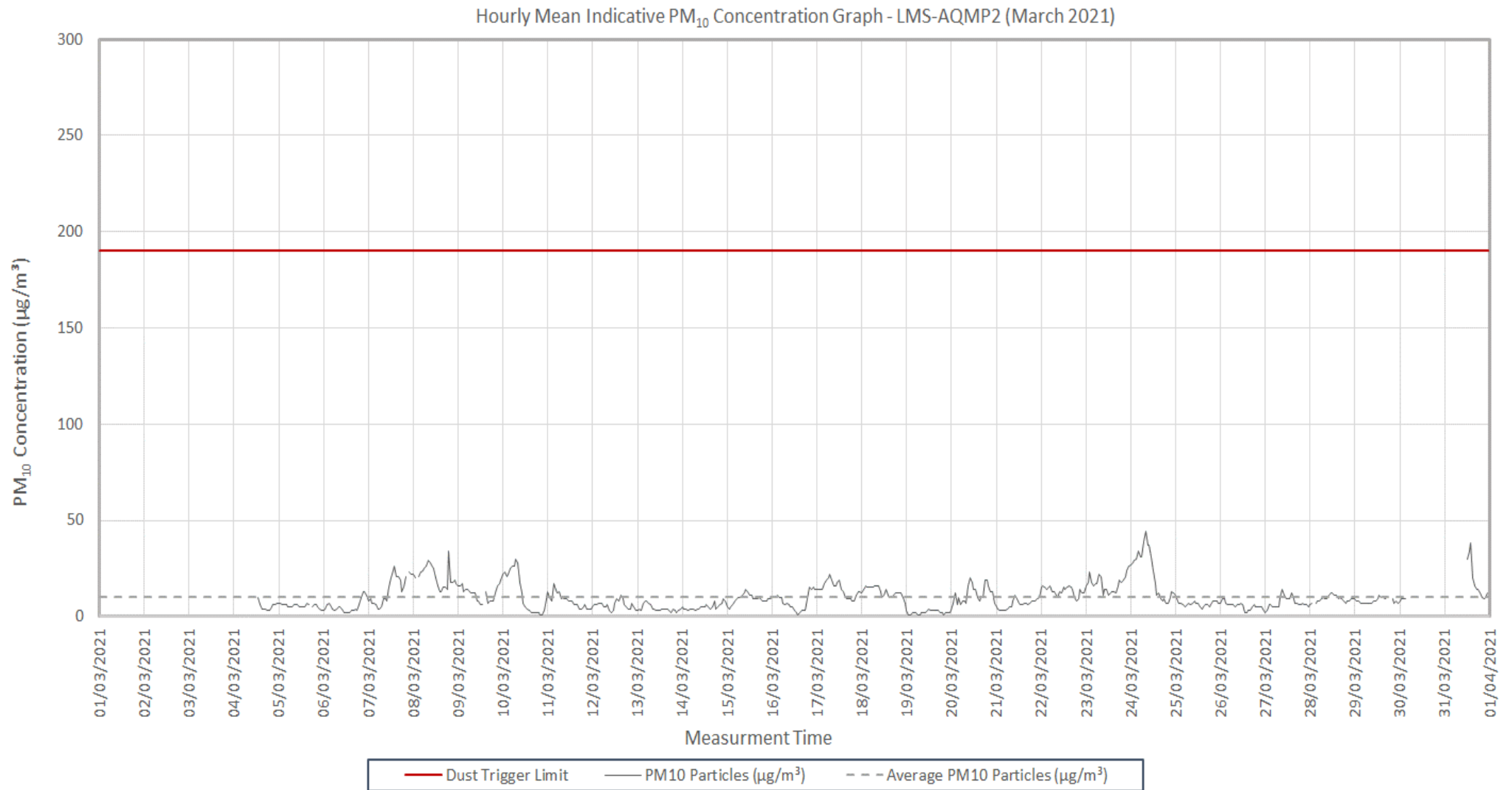


Figure 17: Construction dust 1-hour mean indicative PM₁₀ concentration for 3252Dust2 – Elm Tree Cottage

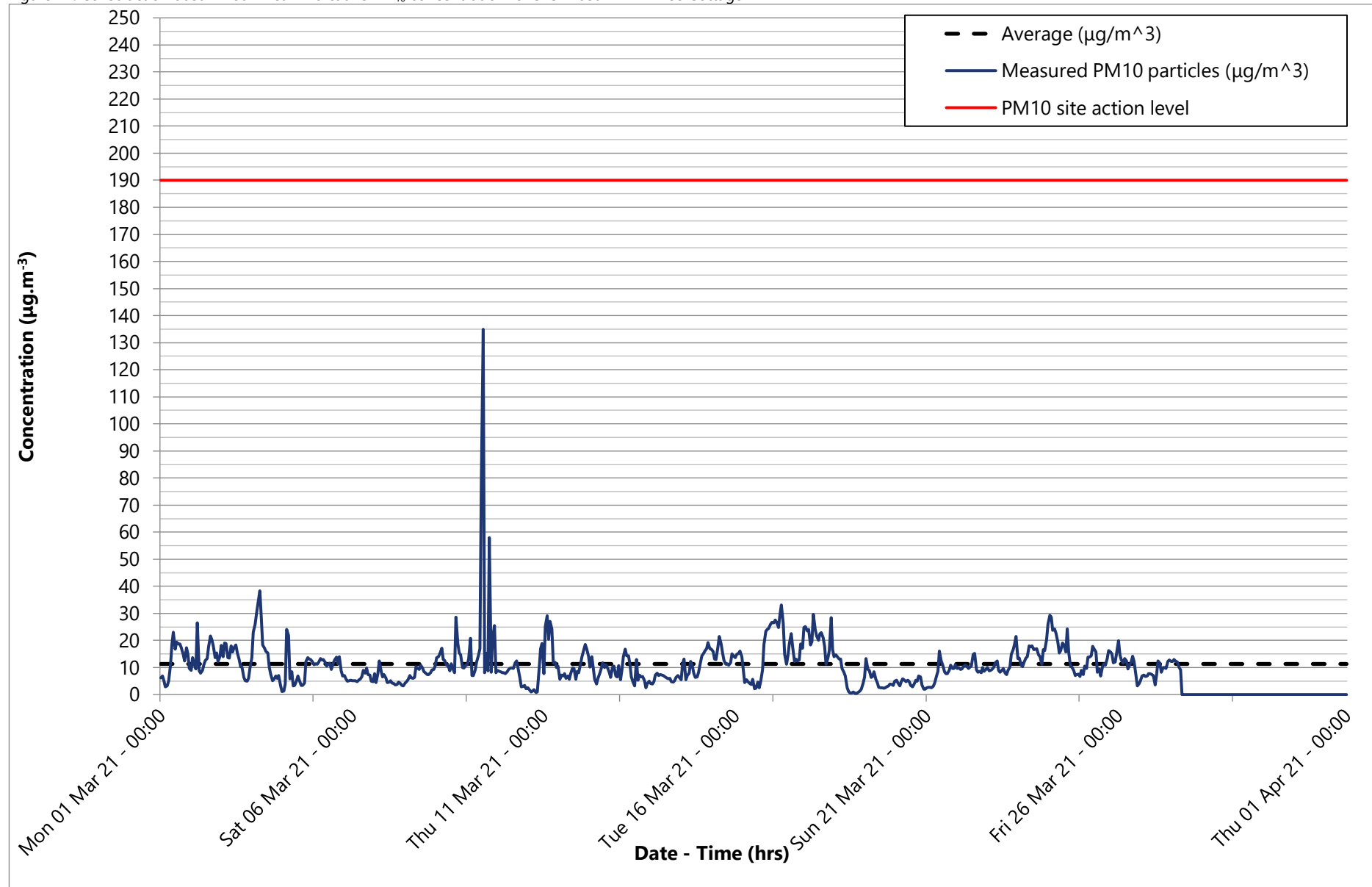


Figure 18: Construction dust 1-hour mean indicative PM10 concentration for 3252Dust3 – Lower Bottom House Farm

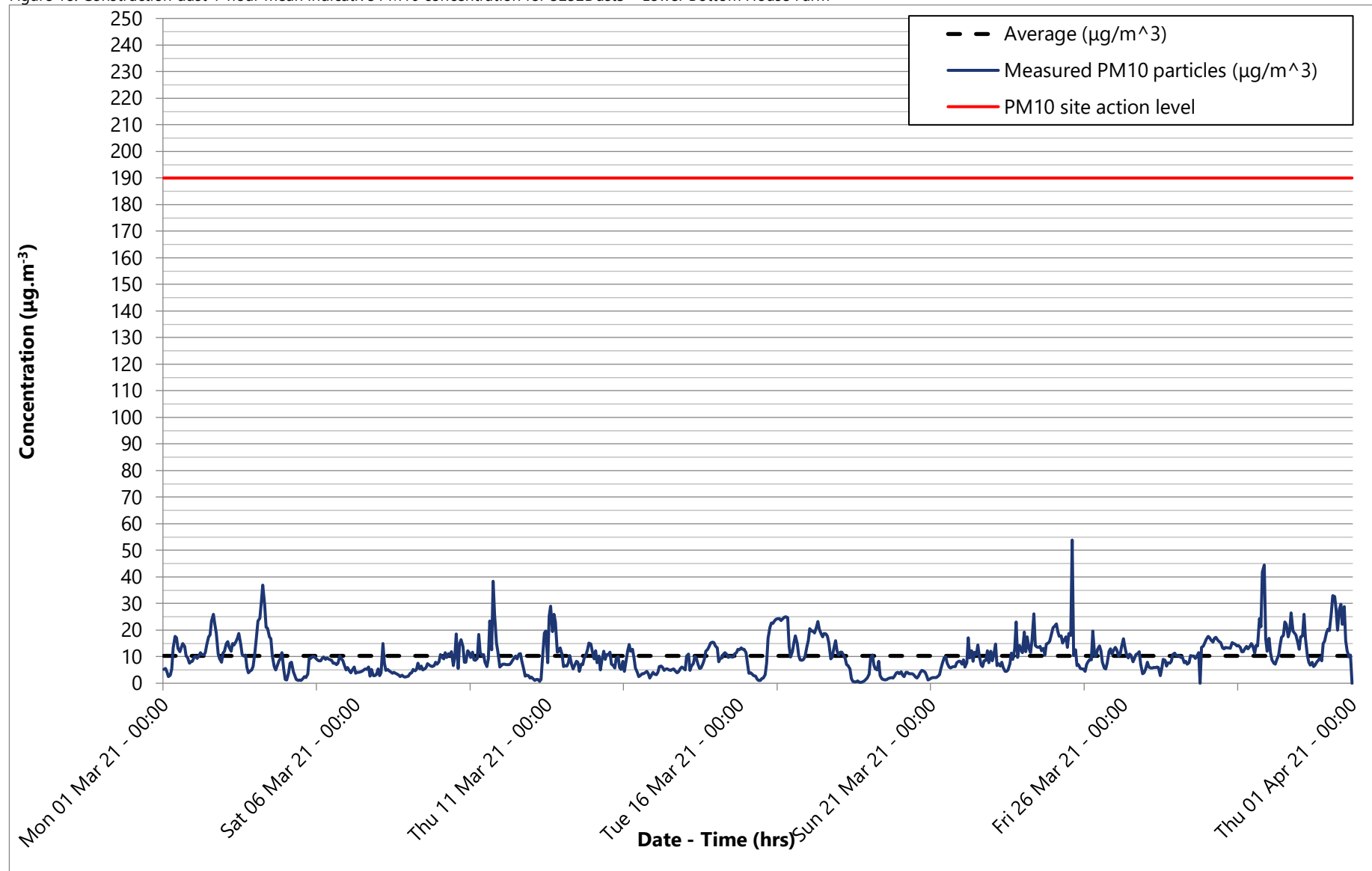


Figure 19: Construction dust 1-hour mean indicative PM10 concentration for dust monitor AQ001 - DC2J Haul Road and Compound site

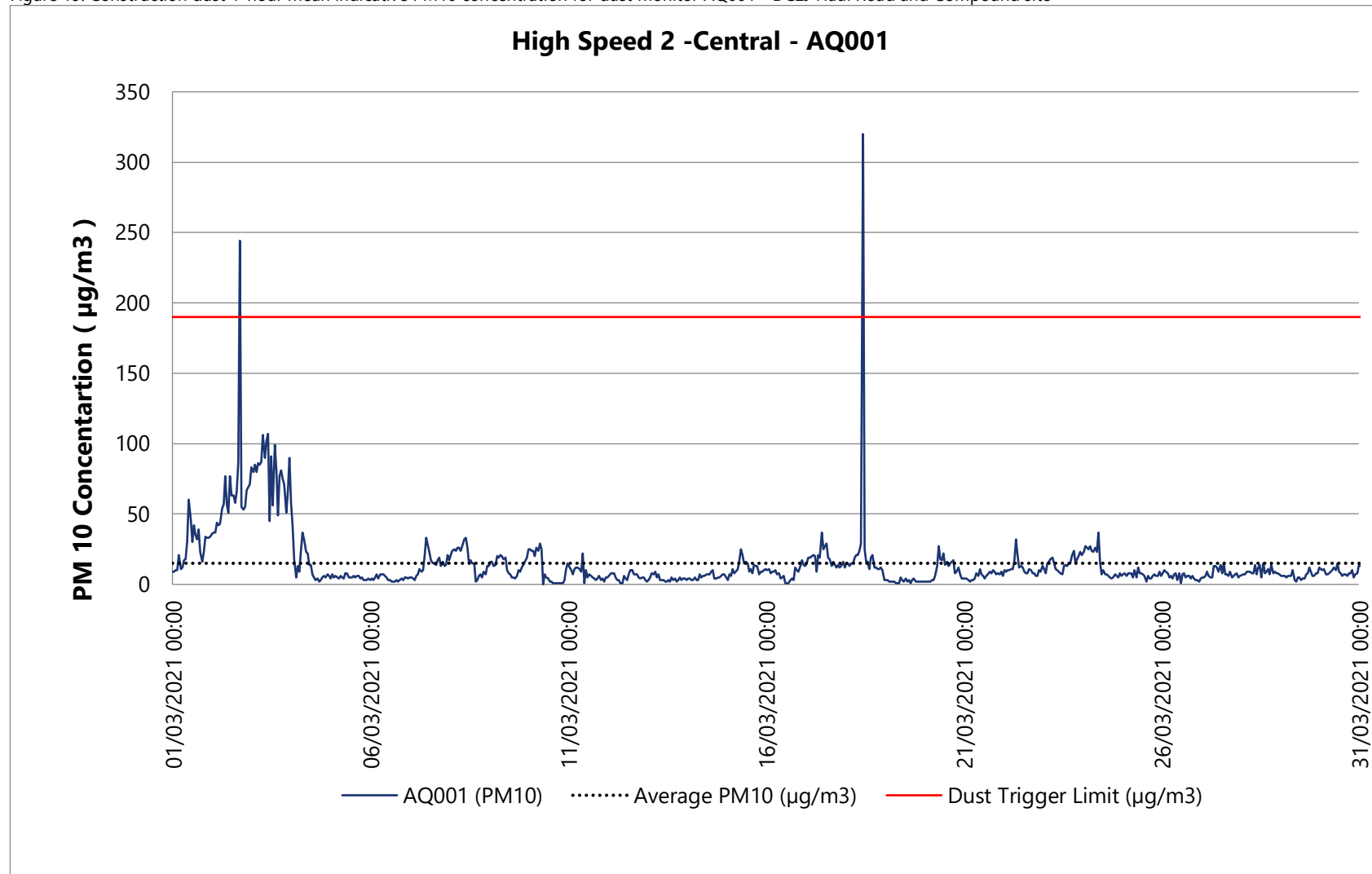


Figure 20: Construction dust 1-hour mean indicative PM10 concentration for dust monitor AQ002 - DC2J Haul Road and Compound site

