

## **Air Quality and Dust Monitoring Monthly Report – December 2019**

**Three Rivers District Council**



## Department for Transport

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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 Three Rivers District Council (TRDC) during December 2019.
- 1.1.2 Figure 1 in Appendix A indicates the current worksite together with the dust monitoring locations for December 2019.
- 1.1.3 This summary should be read in conjunction with the overview monitoring report monthly available from [www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2](http://www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2), which highlights: the applicable standards and guidance, as well as the dust monitoring methodology to be implemented by nominated undertakers throughout construction.
- 1.1.4 The current phase of works commenced within TRDC during July 2017 and is expected to be completed by January 2020. The current worksite at the Chiltern Tunnel South Portal Compound is presented in Appendix A, Figure 1. Activities within December included:
- Ongoing construction of compounds and reinforced concrete structures for the Tunnel boring machine power supply. Worksite located both North and South of Chalfont Lane alongside the M25;
  - Ongoing operation and maintenance of site haul road along the western and northern boundaries of site;
  - Installation of perimeter security fencing around boundary of the South Portal field;
  - Ongoing top-soil strip and trial trenching for the purpose of archaeological investigations;
  - Ecology and geotechnical surveys across the field; and
  - Preconstruction works at the Chiltern Tunnel South Portal Compound including mobilisations, installation of platforms for grouting works, drilling and grouting, removal of topsoil stockpile, topsoil stripping and stockpiling for the temporary pond and amenities as well as subsoil stripping and stockpiling for the temporary pond.
- 1.1.5 Note, the site was closed for the festive period from 14:00 hrs on Friday 20<sup>th</sup> December 2019 until 06:00 hrs Monday 6<sup>th</sup> January 2020 with no activities on site.
- 1.1.6 Two (2) dust monitors are installed around the worksite, where earthworks, construction and trackout activities are underway. These sites returned a medium dust risk rating (for works currently active on site).
- 1.1.7 Dust monitoring locations and results are presented in Appendix B, Table 1, together with a line chart of monthly data from each dust monitor presented in Figures 2 and 3. 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 mitigations.

- 1.1.8 The trigger level of  $190 \mu\text{g}/\text{m}^3$ , 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.
- 1.1.9 There were a number of dust trigger alerts recorded at AQMP1 during this monitoring period (December 2019). These were recorded between 26<sup>th</sup> December and 31<sup>st</sup> December. Following an investigation, it was noted that these were false triggers caused by a faulting heating inlet on the monitor. The heating inlet was replaced on 3<sup>rd</sup> January and regular maintenance inspection will continue to be carried out to avoid reoccurrence.
- 1.1.10 There was one (1) dust trigger alert recorded at AQMP2 during the December 2019 monitoring period. The exceedance of the  $190 \mu\text{g}/\text{m}^3$  dust trigger level at AQMP2 was measured on Wednesday 18<sup>th</sup> December at 03:00 - 04:00 hrs. The cause of this exceedance has been identified as being attributable to power loss which affected the functionality of the heated inlet and are not considered to be associated with site activities.
- 1.1.11 All other results were in line with the expected ranges.
- 1.1.12 The data capture was 59% for AQMP1 and 100% for AQMP2 for the month of December 2019. The site was closed from the 20<sup>th</sup> December (opened 06/01/2020) and as such, the monitoring period for the month was 65%.
- 1.1.13 Missing data from AQMP1 from Friday 13<sup>th</sup> to Friday 20<sup>th</sup> December 2019 was caused by interruptions to continuous power from the solar and wind power pod, likely as a result of calm and overcast conditions. The interruptions in continuous power resulted in an internal battery charging circuit component failure of the AQMP1 unit (TNO4199) which was retrieved from site and replaced with TNO3427 on Friday 20<sup>th</sup> December.
- 1.1.14 There were no complaints, relating to dust or air quality, received during the monitoring period (December 2019).

# Appendix A –Monitoring Locations

Figure 1: Worksites and Monitoring locations during December 2019



## Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and December 2019 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/m <sup>3</sup> )	Minimum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Maximum 1-hour PM <sub>10</sub> concentration (µg/m <sup>3</sup> )	Number of 1-hour periods exceeding trigger level of 190 µg/m <sup>3</sup>	1-hour data capture (%)
AQMP1	502885, 191488	On the northern boundary of the site with Chalfont Lane	M	Yes	Yes	10.9	1.3	157.4	False triggers (34)	59.0
AQMP2	502872, 190833	On the southern boundary of the site with Denham Way	M	Yes	Yes	11.3	0.7	570.3	False trigger (1)	100.0

Table 2: Summary of exceedances during period (December 2019)

Monitoring Site ID	Period of trigger alert & Concentration recorded	Investigation	Outcomes / Resolution / Remedial measures implemented
AQMP2	<u>18/12/2019</u>	Due to number of exceedances occurring outside of working hours suggests possible issue with the heated inlet.	Engineer attended site 03/01/2020. Heated inlet connection damaged and replaced on 03/01/20. Unit left functioning, operation continuing to be monitored.
AQMP1	<u>26/12/2019 – 31/12/2019</u>		

Figure 2: Continuous dust 1-hour mean indicative PM<sub>10</sub> concentration for AQMP1 for December 2019

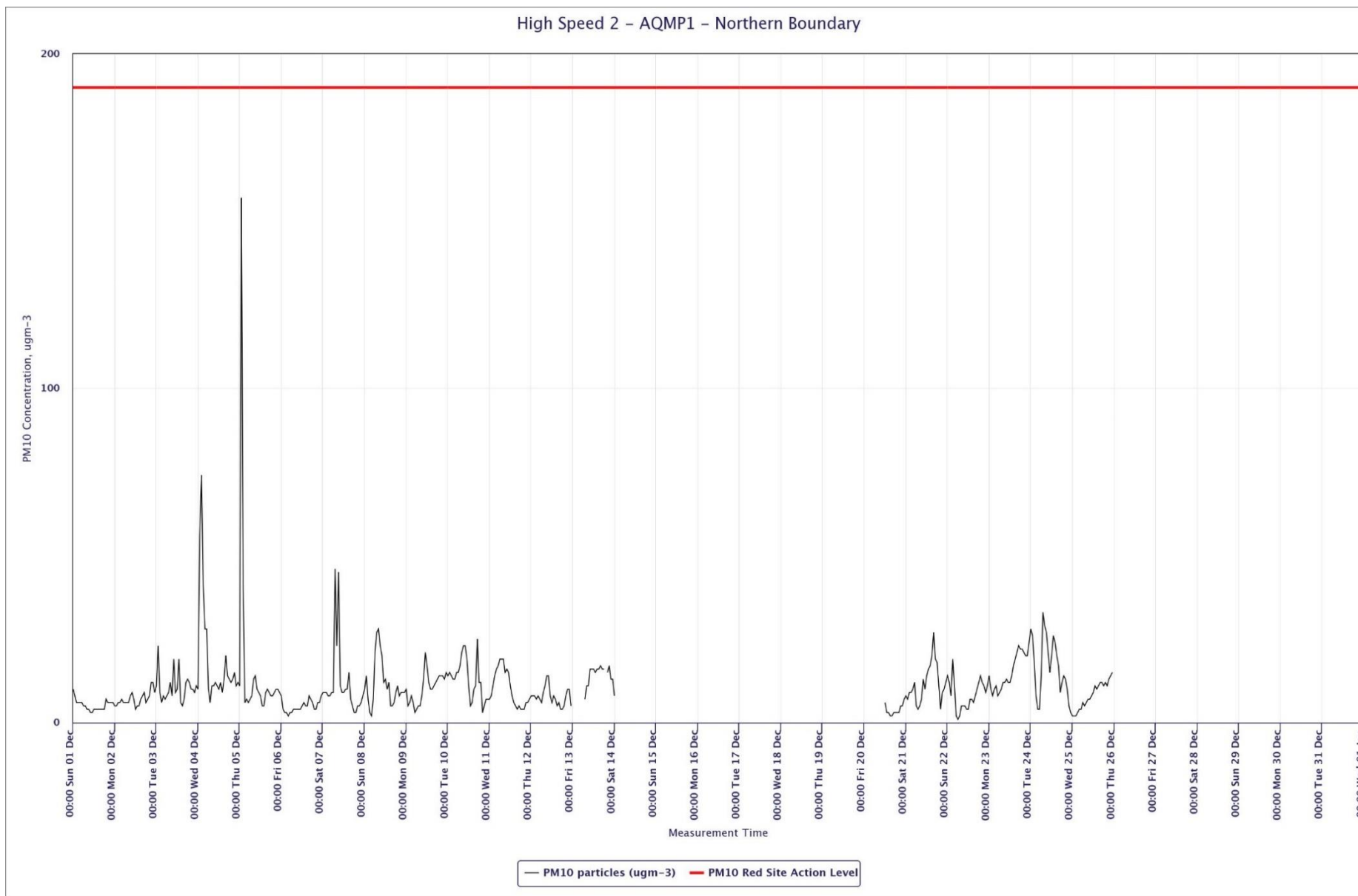


Figure 3: Continuous dust 1-hour mean indicative PM<sub>10</sub> concentration for AQMP2 for December 2019

