

## **Air Quality and Dust Monitoring Monthly Report – July 2018**

**Three Rivers District Council**



## Department for Transport

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A report prepared by Osborne 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 Three Rivers District Council (TRDC) during July 2018.
- 1.1.2 Figure 1 in Appendix A indicates the current work sites together with dust and air quality monitoring locations for July 2018.
- 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](http://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 July 2017, and is expected to be completed in January 2019. The current worksites, as presented in Appendix A, Figure 1, include:
- Construction of a new entry slip onto the clockwise M25, from Shire Lane to include: associated drainage, utilities, lighting, signage and road markings to full motorway standards.
  - Construction of a new exit slip from the anti-clockwise M25, connecting to Chalfont Lane to include: associated drainage, utilities, lighting, signage and road markings to full motorway standards.
  - Construction of a Chalfont Lane diversion road between Shire Lane and Hornhill Road to include a temporary road to Local Authority Highway standards, a junction with Shire Lane and Hornhill Lane and associated signage on local roads.
  - Construction of a new junction for access to Orchards caravan park and footpath CSP/16/1.
  - Widening of Chalfont Lane between the M25 exit slip and Denham Way to include: a bell mouth access to a future Scottish and Southern Energy (SSE) sub-station, accesses to the future High Speed 2 (HS2) construction compound south of Chalfont Lane and construction of BT and City Fibre ducts and chamber diversions along Chalfont Lane.
- 1.1.5 One (1) dust monitor is installed around the worksite, where construction works are underway. This site was classified with a medium dust risk rating.
- 1.1.6 The dust monitoring location, line graph and results are presented in Appendix B, Table 1, together with a line chart of the monthly data from the dust monitor.

- 1.1.7 One hundred and twenty-seven (127) exceedances of the dust trigger level were recorded during the July 2018 monitoring period, as detailed in Appendix B, Table 2. Osborne works in Chalfont Lane re-commenced on 19<sup>th</sup> July (following the transfer of land south of Chalfont Lane from Affinity Water to Highways England). Exceedances prior to this date were attributed to prolonged dry weather periods coupled with Kier's construction activities and vehicle movements along the access haul route through this field.
- 1.1.8 There are also several exceedances relating to windy conditions which resulted in the generation of dust plumes/ swirls through the vastly open field south of Chalfont Lane, blowing directly across the monitor. Kier, working on behalf of Affinity Water, and Osborne are automatically notified of each exceedance to conduct further investigations and implement mitigation measures where the cause is associated to construction works. Osborne are unable to confirm what, if any, mitigation measures were implemented by Kier for their works where the monitor was triggered. Osborne mitigation measures throughout the July period are detailed within the context of this report.
- 1.1.9 From July 19<sup>th</sup> onward, Osborne have been undertaking bulk earthworks from Sunnyhill Road down to Denham Way (within the vicinity of the designated medium-risk receptors where the dust monitor has been positioned). Osborne have employed a tractor and bowser to spray water along the length of Chalfont Lane (specifically, the access route to/ from this works area and targeting the stockpile locations) and address the work areas themselves. The mitigation measures executed by Osborne have successfully mitigated dust trigger exceedances associated with Osborne works. On occasions where the water spraying measures dried out in the hot temperatures faster than anticipated and resulted in a monitor alert, Osborne responded with additional dampening measures to address the dust generation.
- 1.1.10 At the end of July 2018, Osborne began to provide supportive dust suppressant measures to address Kier work zones in an attempt to reduce construction related dust generation along the haul road. The notable decline in trigger alerts can be attributed to the completion and de-mobilization of the Kier contractor from site coupled with increased and targeted water spraying efforts.
- 1.1.11 All other results throughout the construction phase were in line with the expected ranges.
- 1.1.12 Five complaints were forwarded to the HS2 C1 Engagement Team during the month of July in relation to dust generation at the Chalfont Lane/Tilehouse Lane construction site.
- Three Rivers District Council representatives were conducting a site visit on July 3<sup>rd</sup> for adjacent construction works at the Pynesfield Quarry. The assurance inspector noted dust emerging from the Chalfont Lane site works and launched a correspondence with HS2 for some suppressant measures to be undertaken.
  - Hertfordshire County Council expressed a concern on July 17<sup>th</sup> for dust arising from Chalfont Lane works and requested dust-suppression measures be actioned.

- A resident complaint was addressed to Kier on July 18<sup>th</sup> with concerns of health effects from dust migration outside of the construction zone. The HS2 project manager confirmed dust suppression measures were being undertaken for Osborne work areas. In addition, a speed reduction limit was enforced for all haul routes to 5/mph to minimise dust generation from vehicle movements. Kier suspended earthwork operations until a dust-suppressant solution could be agreed with Affinity Water.
- A complaint was sent July 20<sup>th</sup> from Three Rivers District Council. The issue was also raised as a separate discussion topic from Local Authorities at the July EHO Subgroup meeting with HS2 representatives. The complaint involved dust generation associated with the movements of vehicles in the Chalfont Lane construction site as well as the haul route alongside Tilehouse Lane.
- A resident complaint was raised July 30<sup>th</sup> reporting concerns of dust migrating through the A412 region from the HS2 work area.

# Appendix A – Worksites and Monitoring Locations

Figure 1: Worksite locations during July 2018 in TRDC

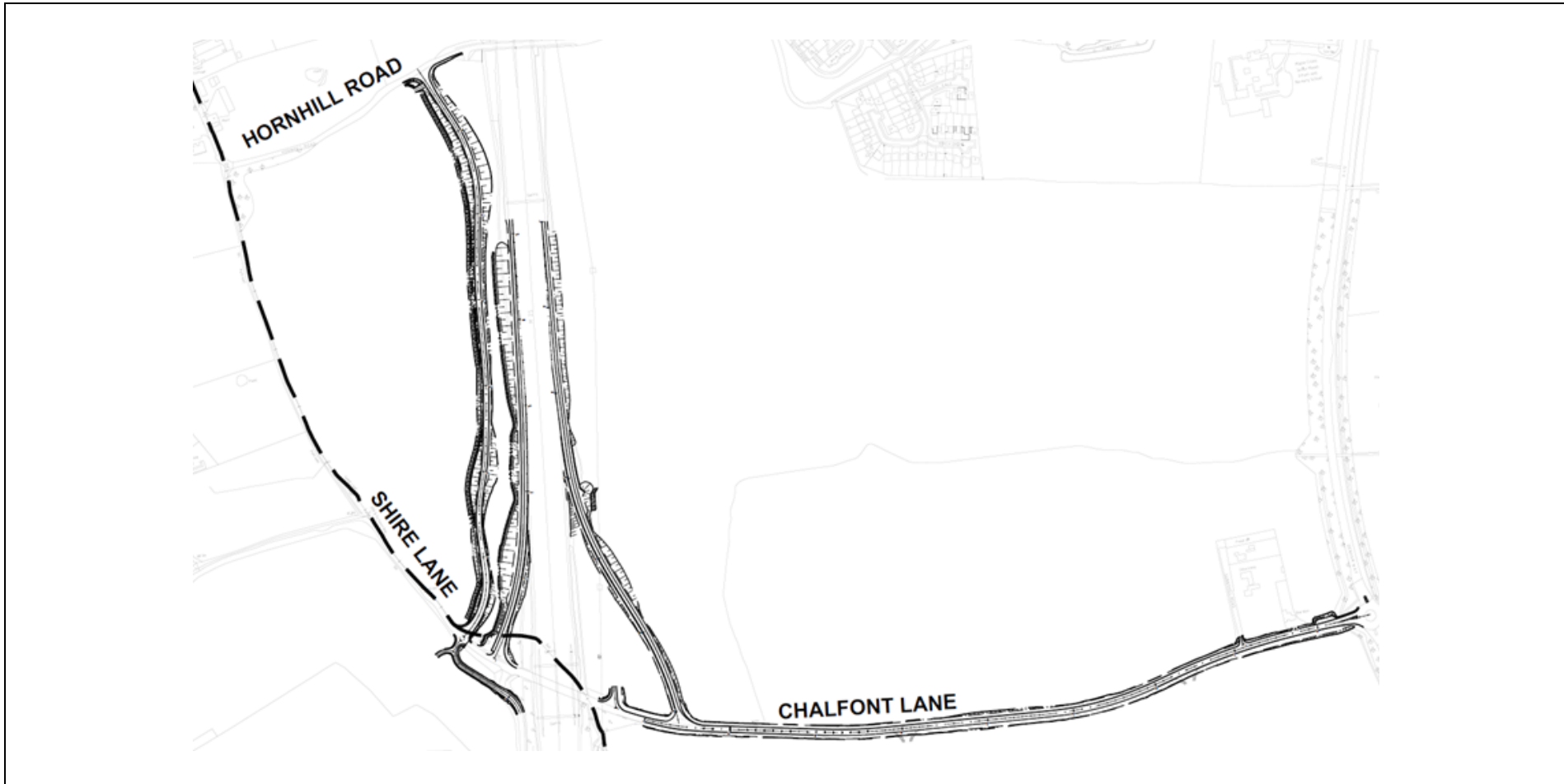


Figure Name

**Worksite locations during July 2018 in TRDC**

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Figure 2: Monitoring locations during July 2018 in TRDC

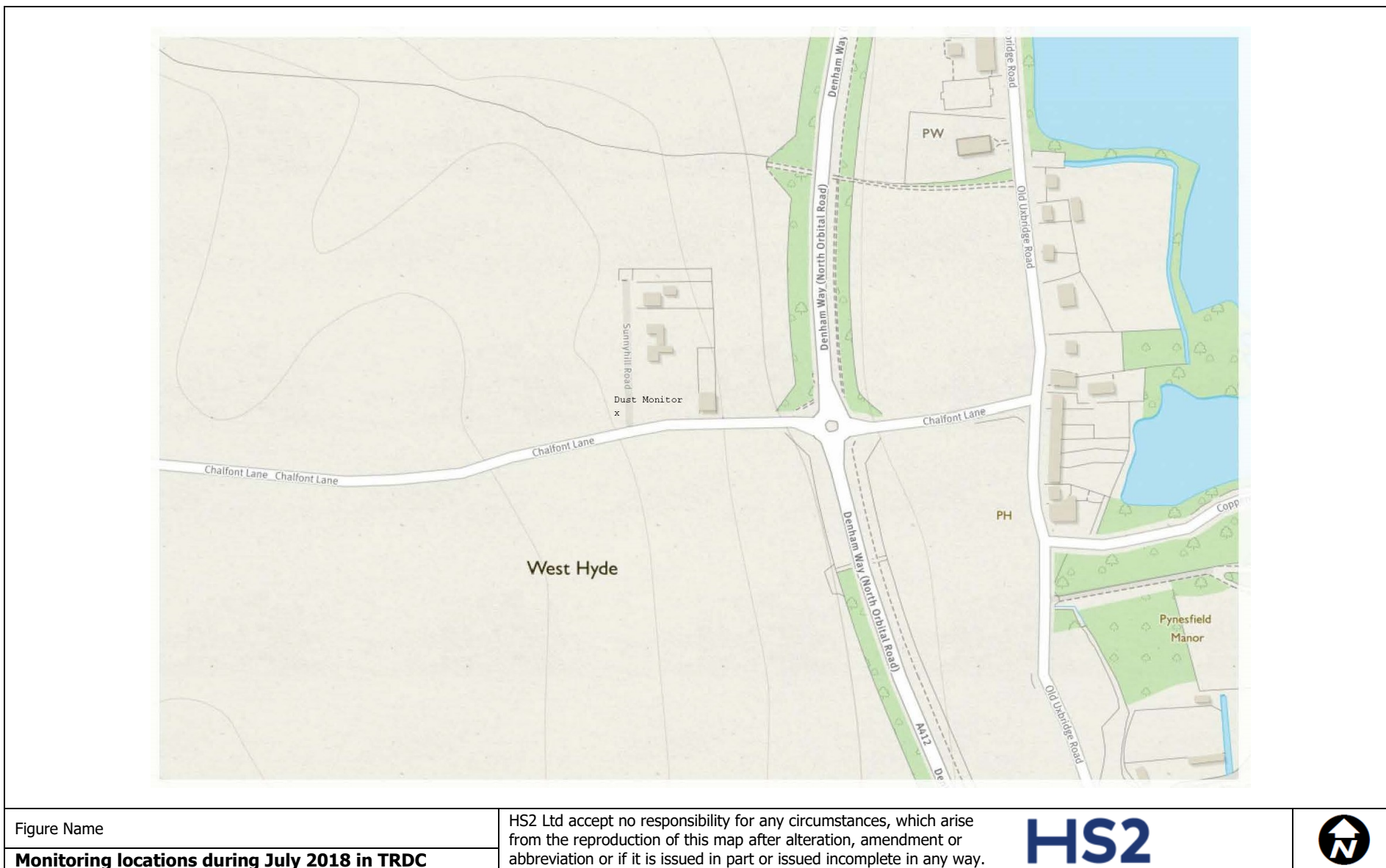


Figure Name

**Monitoring locations during July 2018 in TRDC**

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# Appendix B – Dust Monitoring Results

Table 1: Dust monitoring locations and July 2018 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 15-minute PM10 concentration ( $\mu\text{g}/\text{m}^3$ )	Minimum 15-minute PM10 concentration ( $\mu\text{g}/\text{m}^3$ )	Maximum 15-minute PM10 concentration ( $\mu\text{g}/\text{m}^3$ )	Number of 15-min periods exceeding trigger level of $250 \mu\text{g}/\text{m}^3$	15-min data capture (%)
M25 Slip Roads	51.613059, -0.515667	Chalfont Lane	M	Yes	No	43.6	0.3	1353	127	100.0



Table 2: Summary of exceedances of trigger level in July 2018

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
04/07/2018 19.45	Chalfont Lane	M25 Slip Roads	N/A	Exceedance occurred outside of working hours, it is assumed to have resulted from wind-blown dust within the area during the night hours.	A correspondence of daily trigger summaries as submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
04/07/2018 20.30					
04/07/2018 23.00					
05/07/2018 08.15				Triggers occurred as a result of Kier construction works on site adjacent to Chalfont Lane and wind-generated dust from a neighbouring exposed agricultural field. These triggers took place prior to Osborne's Chalfont Lane works re-commencing.	Kier site team were informed of the exceedances by Osborne project management personnel. Kier were requested to investigate the cause, assess active works and implement dust suppression measures accordingly. A correspondence of daily trigger summaries was reported to the TRDC Local Authority. No actions were implemented for weather caused/external field triggers.
05/07/2018 13.00					
05/07/2018 15.00 – 17.00 (11no)					
06/07/2018 08.30 – 10.00 (6no)					
06/07/2018 11.00 – 12.30 (6no)					
06/07/2018 15.45					
06/07/2018 16.00					
06/07/2018 16.30					
06/07/2018 22.30				Exceedance occurred outside of working hours, it is assumed to have resulted from wind-blown dust within the area during the night hours	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
07/07/2018 08.30 – 10.00 (6no)					
07/07/2018 11.15 – 13.00 (7no)				Triggers as a result of activity on Kier site adjacent to Chalfont Lane and wind generated dust from the field. These triggers were prior to Osborne's Chalfont Lane works re-commencing.	Kier site team were informed of the exceedances by Osborne project management personnel. Kier were requested to investigate the cause, assess active works and implement dust suppression measures accordingly. A correspondence of daily trigger summaries was reported to the TRDC Local Authority. No actions were

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
					implemented for weather caused/external field triggers.
07/07/2018 16.45				Exceedance occurred outside of working hours.	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
09/07/2018 09.30					
09/07/2018 10.00					
09/07/2018 11.00					
09/07/2018 15.15 – 16.15 (4no)					
09/07/2018 16.30					
10/07/2018 08.30					
10/07/2018 09.00 – 10.00 (4no)					
10/07/2018 11.00 – 11.30 (2no)					
10/07/2018 12.00 – 12.30 (2no)					
10/07/2018 14.30 – 16.30 (4no)					
11/07/2018 08.45					
11/07/2018 09.15 – 09.45 (2no)					
11/07/2018 14.45					
11/07/2018 16.45					
12/07/2018 08.30					
12/07/2018 09.45 – 10.15 (2no)					
12/07/2018 10.45					
				Triggers as a result of activity on Kier site adjacent to Chalfont Lane and wind generated dust from the field. These triggers were prior to Osborne's Chalfont Lane works re-commencing.	Kier site team were informed of the exceedances by Osborne project management personnel. Kier were requested to investigate the cause, assess active works and implement dust suppression measures accordingly. A correspondence of daily trigger summaries were reported to the TRDC Local Authority. No actions were implemented for weather caused/external field triggers.

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
12/07/2018 11.30					
12/07/2018 14.45					
13/07/2018 11.15					
13/07/2018 15.15 – 15.45 (2no)					
14/07/2018 09.30					
14/07/2018 21.15				Exceedance occurred outside of working hours, it is assumed to have resulted from wind-blown dust within the area during the night hours	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
14/07/2018 22.00 – 22.30 (2no)					
14/07/2018 22.45					
16/07/2018 10.30 – 11.15 (3no)				Triggers as a result of activity on Kier site adjacent to Chalfont Lane and wind generated dust from the field. These triggers were prior to Osborne's Chalfont Lane works re-commencing.	Kier site team were informed of the exceedances by Osborne project management personnel. Kier were requested to investigate the cause, assess active works and implement dust suppression measures accordingly. A correspondence of daily trigger summaries was reported to the TRDC Local Authority. No actions were implemented for weather caused/external field triggers.
16/07/2018 13.45					
17/07/2018 11.00					
17/07/2018 12.45					
17/07/2018 15.00 – 15.45 (3no)					
17/07/2018 16.45					
18/07/2018 00.30				Exceedance occurred outside of working hours, it is assumed to have resulted from wind-blown dust within the area during the night hours	A correspondence of daily trigger summaries as submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
18/07/2018 04.15					
18/07/2018 08.30 – 09.00 (2no)				Triggers as a result of activity on Kier site adjacent to Chalfont Lane and wind generated dust from the field. These triggers were prior to Osborne's Chalfont Lane works re-commencing.	Kier site team were informed of the exceedances by Osborne project management personnel. Kier were requested to investigate the cause, assess active works and implement
18/07/2018 14.00					
18/07/2018 15.00 – 17.00 (8no)					

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
					dust suppression measures accordingly. A correspondence of daily trigger summaries was reported to the TRDC Local Authority. No actions were implemented for weather caused/external field triggers.
19/07/2018 13.15					
19/07/2018 14.15				Osborne works were taking place in close proximity to the monitor. Works area had dried out, causing dust to be generated.	Tractor and bowser suppressant measures were sent to address the source of dust within work areas A daily summary of trigger exceedance were submitted to the TRDC Local Authority.
23/07/2018 14.00 – 14.30 (2no)				CCTV footage showed dust generated by wind caused the trigger. No dust generating activities, by Osborne or Kier were being undertaken at this time.	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
24/07/2018 11.15					
24/07/2018 12.45				Osborne works were taking place in close proximity to the monitor. Tractor and bowser sent back to the works area to further dampen down the ground, where areas were drying out.	Tractor and bowser suppressant measures were sent to address the source of dust within work areas A daily summary of trigger exceedance were submitted to the TRDC Local Authority.
24/07/2018 14.00				CCTV footage showed dust generated by wind caused the trigger. No dust generating activities, by Osborne or Kier were being undertaken at this time.	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
25/07/2018 16.15				CCTV footage showed dust generated by wind caused the trigger. No dust generating activities, by Osborne or Kier were being undertaken at this time.	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
25/07/2018 20.45				Exceedance occurred outside of working	A correspondence of daily trigger

Period exceeding trigger level	Worksite reference	Monitoring site ID	Complaint reference number (if applicable)	Reason	Resolution
				hours, it is assumed to have resulted from wind-blown dust within the area during the night hours	summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
26/07/2018 14.00 – 14.30 (2no)				Osborne works were taking place in close proximity to the monitor. Tractor and bowser sent back to the works area to further dampen down the ground, where areas were drying out.	Tractor and bowser suppressant measures were sent to address the source of dust within work areas A daily summary of trigger exceedance were submitted to the TRDC Local Authority.
26/07/2018 14.45					
26/07/2018 15.45					
26/07/2018 16.30 – 17.00 (2no)				Osborne works were taking place in close proximity to the monitor. Tractor and bowser sent back to the works area to further dampen down the ground, where areas were drying out.	Tractor and bowser suppressant measures were sent to address the source of dust within work areas A daily summary of trigger exceedance were submitted to the TRDC Local Authority.
26/07/2018 22.30				Exceedance occurred outside of working hours, it is assumed to have resulted from wind-blown dust within the area during the night hours	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.
31/07/2018 15.00 – 15.30 (2no)				CCTV footage showed dust generated by wind caused the trigger. No dust generating activities, by Osborne or Kier were being undertaken at this time.	A correspondence of daily trigger summaries was submitted to the TRDC Local Authority. No further actions were undertaken from contractors for unrelated neighbouring/weather causes.

Figure 3: Construction dust 15-minute mean indicative PM<sub>10</sub> concentration for dust monitors

