

Ambient Air Monitoring Team

Study of Ambient Air Quality at Walsall 12 March 2020 and 11 August 2020

The Environment Agency is responsible for the regulation of the Environmental Permits held by Enovert North Limited for Highfields South Landfill Site and Vigo Utopia Landfill Site in Walsall. The landfill is located in an urban area, with residential properties within 150 metres of the site boundaries.

The requirement to measure emissions from the landfill site are set out in the environmental permit. In addition to operator monitoring on the site, the Environment Agency carried out an ambient air monitoring study between the 12 March 2020 and 11 August 2020. The overall objective of the study was to identify the local sources of air pollution and to quantify the environmental impact of the emissions from these sources on the surrounding area and the local community

What did the study involve?

The Ambient Air Monitoring (AAM) team installed a Mobile Monitoring Facility (MMF) to the north of Highfields South Landfill Site on the 12 March 2020, in the car park of the Horse and Jockey pub in Walsall. Data was collected between 12 March 2020 and 11 August 2020, however the monitoring unit experienced two periods without power due to issues related to Covid-19 between 12 April 2020 - 12 May 2020 and 10 June 2020 - 17 June 2020, which resulted in a break in data collection. We were able to organise the reinstatement of the power supply to the monitor on both occasions and the monitoring equipment was checked by one of our technical specialists to ensure it continued to operate correctly and gather all the data needed.

Five minute average concentrations of hydrogen sulphide and methane were measured over the monitoring period alongside wind direction and wind speed measurements.

One of the possible impacts associated with landfill sites is nuisance odours. Quantifying and

characterising odours is very challenging because each person's sensitivity to odours can vary. Measuring odours can be very difficult because the gases are made up of a mixture of different pollutants. Landfill gas is made up of a large proportion of methane.

By measuring methane we can infer if there is a source of landfill gas being measured at the monitoring location, from the direction of the landfill site. We were also able to measure hydrogen sulphide, which has an associated odour.

Hydrogen sulphide concentrations were compared against the relevant World Health Organisation (WHO) guidelines for human health and odour. There are no objectives or guidelines for methane emissions, its main environmental impact is from its relatively high potential for global warming.

The wind direction and pollutant data was used to assess from which wind directions the highest concentrations were measured.

What did the results show?

An assessment of the meteorological conditions over the monitoring period showed that the wind came from the direction of Highfields South landfill site and Vigo Utopia landfill site towards the monitoring site about 28% and 4% of the time respectively.

Comparison of the hydrogen sulphide data against the relevant WHO guidelines showed that concentrations were below health limits. Levels were found to be above the 30-minute mean odour guide level on 48 occasions, between the 16 March 2020 – 12 April 2020 (1.3% of the monitoring results reported).

Consideration of the directional sources of hydrogen sulphide and methane suggested that

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the highest contributing sources were seen from the direction of Highfields South landfill site.

Further work

No further ambient air monitoring studies are planned to take place at Walsall by the Environment Agency but our regulatory work will continue at Highfields South Landfill Site and Vigo Utopia Landfill Site.

This summary relates to information reported in detail in the following output(s):

Report: AAM/TR/2020/14

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