



Dust and Air Quality Innovation and Expertise

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**Quarterly non-technical summary: Mountsorrel Quarry particulate matter, dust and weather monitoring**

**Date range:** Quarter 1 2024 (10 November 2023 – 23 February 2024)

**Date Report Issued:** 04 June 2024

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**Introduction**

Every month, the results of dust and particulate matter monitoring at Mountsorrel Quarry are compiled and summarised in ‘compliance’ reports, which are then shared with Charnwood Borough Council (CBC), Leicestershire County Council (LCC) and the Environment Agency. The monitoring results are discussed in more detail during Technical Liaison meetings held with CBC and LCC on a quarterly basis.

Once the quarterly liaison meetings are held, we prepare a cover letter to provide a non-technical overview of the most recent three months of finalised reports. This letter covers the period from 10 November 2023 to 23 February 2024.

An explanation of how and why dust and air quality are measured at Mountsorrel Quarry is available [here](#).

**Changes to reporting**

Following consultation with CBC and LCC, the format and focus of the compliance reports have been revised. In addition to presenting PM<sub>10</sub> and PM<sub>2.5</sub> data from both on-site monitors, an increased emphasis is being placed on the frequency of short-term PM<sub>10</sub> alerts sent to quarry management, the investigations triggered by the alerts and the changes to on-site processes to minimise dust.

The general air quality of the surrounding area is now assessed by comparing the particulate matter concentrations recorded by CBC at the southern end of Hawcliffe Road against the relevant Air Quality Objectives (AQOs). Data from a Defra Automatic Urban and Rural Network (AURN) monitoring station at Leicester University are also presented for reference.

**Weather summary**

Whilst mid-November was relatively mild, by late November and early December temperatures fell to below freezing. During this cold spell there was an extended dry period. From mid-December until early January it was cool and persistently wet. Mid-January saw another sharp drop in temperatures, coupled with a nearly three week long dry period, before temperatures rose again and the rain returned in late January. From February, onwards it remained cool and wet.

During this quarter, winds were predominantly recorded from the south and southwest throughout, with some winds recorded from the northwest and northeast on occasion.

## Deposited dust

During this period, deposited dust levels were below the site-specific threshold level at all locations. This is likely due to the generally wet weather experienced through the winter, as well as improvements to on-site dust management.

The frequency of threshold level exceedances over the previous three months is shown for each monitoring location in Figure 1 using pie charts.



Figure 1: Frequency of high dust levels, Quarter 1 2024



## Particulate Matter

### On-site PM<sub>2.5</sub>

PM<sub>2.5</sub> concentrations were broadly similar at Hawcliffe Road and Quorn House, with the period averages being 4.8 µg/m<sup>3</sup> and 4.2 µg/m<sup>3</sup> respectively (Figure 2).



Figure 2: PM<sub>2.5</sub> monitoring summary, Quarter 1 2024

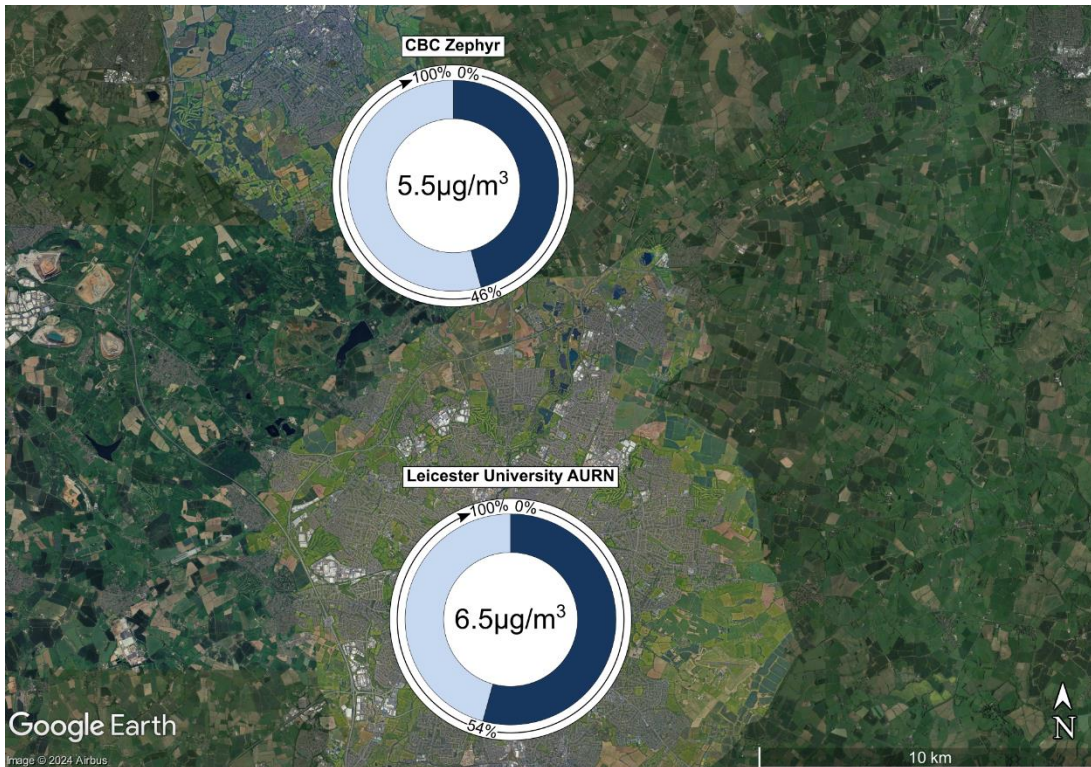
### Off-site PM<sub>2.5</sub>

As shown in Figure 3, the period average PM<sub>2.5</sub> concentrations recorded at the CBC monitoring station at the southern end of Hawcliffe Road was 5.5 µg/m<sup>3</sup> or 46 % of the AQO (12 µg/m<sup>3</sup> as an annual average). The period average concentration at the Leicester University AURN monitoring station was slightly higher, at 6.5 µg/m<sup>3</sup> or 54 % of the AQO.

An elevated concentration at the two monitoring stations at the southern end of Hawcliffe Road might have indicated that the site was a significant source of PM<sub>2.5</sub>.

The overall similarity of period average PM<sub>2.5</sub> concentrations recorded at all four locations show that the site was not a significant source of PM<sub>2.5</sub> during this period.





**Figure 3: PM<sub>2.5</sub> monitoring summary, CBC and AURN monitoring stations, Quarter 1 2024**

**On-site PM<sub>10</sub>**

PM<sub>10</sub> concentrations recorded at both on-site locations were virtually identical for this quarter, with period averages being 5.4 µg/m<sup>3</sup> at Hawcliffe Road and 5.5 µg/m<sup>3</sup> at Quorn House.

The short-term PM<sub>10</sub> trigger level (125 µg/m<sup>3</sup> over a 15-minute period) was not exceeded at either location, therefore no alerts were sent out during this quarter.



**Figure 4: PM<sub>10</sub> monitoring summary, Quarter 1 2024**

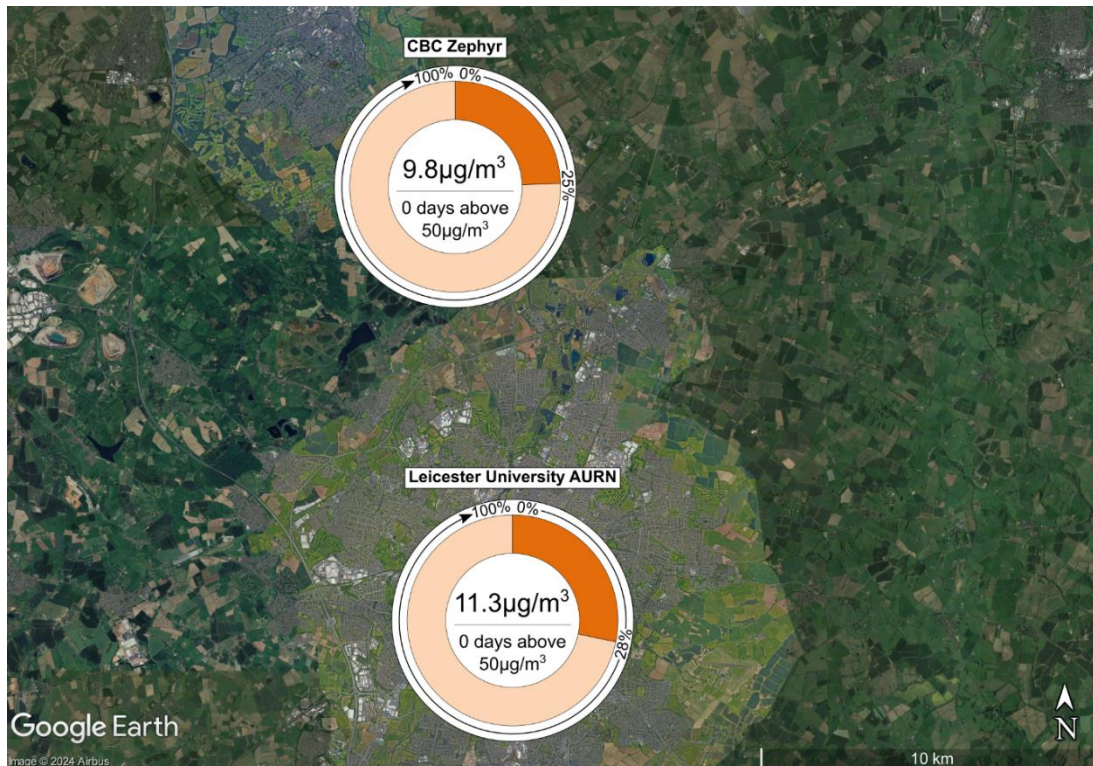


## **Off-site PM<sub>10</sub>**

As shown in Figure 5, PM<sub>10</sub> concentrations recorded at the CBC monitoring station at the southern end of Hawcliffe Road was 9.8 µg/m<sup>3</sup> or 25 % of the AQO (40 µg/m<sup>3</sup>). Concentrations at the Leicester University AURN monitoring station was slightly higher, at 11.3 µg/m<sup>3</sup> or 28 % of the AQO.

No days with an average PM<sub>10</sub> concentration above 50 µg/m<sup>3</sup> were recorded during this quarter.

As with PM<sub>2.5</sub>, the data show that Mountsorrel Quarry was not a significant source of PM<sub>10</sub> during this period.



**Figure 5: PM<sub>10</sub> monitoring summary, CBC and AURN monitoring stations**

## **Complaints**

During the first quarter of 2024 the quarry received no complaints relating to dust or air quality.

**DustScanAQ**  
**June 2024**