

Appendix B

Air Quality (PM₁₀) Data monitored at Pen-y-Bryn near Gelligaer

1.11.2018 – January 2023

A continuous air quality monitor has operated at Pen-y-Bryn since November 2018. The results are automatically captured and sent electronically to an independent specialist company for analysis. Monitoring results were periodically reported to the former Bryn Liaison and Discussion groups. For completeness this report includes all previous data, plus more recent data. It should be noted that for the period between the 14th August 2020 and 17th August 2021 the monitor was not operational. During this time, the monitor was returned to America for calibration checks and unfortunately got delayed during both transits due to Covid quarantine restrictions and difficulty reinstalling the equipment when the council was responding to the pandemic.

Therefore, the results have been presented to demonstrate the continuous picture between 1.11.18 to now, with two further sets of results; 1.11.18 to 14.8.20 (pre-removal of monitor for calibration) and 17.8.21 to now (post reinstallation of monitor). These are included as data sets, 1, 2 and 3 respectively.

The reports highlight two significant areas of interest, the first being the annual mean objective that should not exceed 40 µg/m³ and the daily mean that should not exceed 50 µg/m³. Please note the air quality directive allows up to 35 such exceedances of the daily mean per year.

Data set 1 (complete set) reports a period mean of 8 µg/m³, furthermore, data sets 2 and 3 report 8 µg/m³ and 7 µg/m³. These results are considerably lower than the annual mean objective of 40 µg/m³.

Data set 1 (complete set) reports 8 occasions when the daily mean has exceeded 50 µg/m³. These 8 occasions are detailed in data set 2, with no exceedances reported via data set 3. The 8 exceedances were recorded within the first six months of the monitor being installed, i.e. between November 2018 and April 2019. The 8 events were investigated to ascertain if they coincided with the dates of quarry blasts. As can be seen from table 1, the dates did not coincide with blasts however 5 of them coincided with national high pollution episodes e.g. dust front the Sahara as reported by Bureau Veritas UK. Throughout this period, there were 4 blasts in the quarry; none of those dates coincided with the exceedance of the daily mean.

The results to date are reassuring and signify good air quality.

Caerphilly Gelligaer E-Sampler

01/11/2018 to 16/01/2023

E-sampler attached to this lamppost near 28 Brynheulog Street, Gelligaer CF82 7FZ

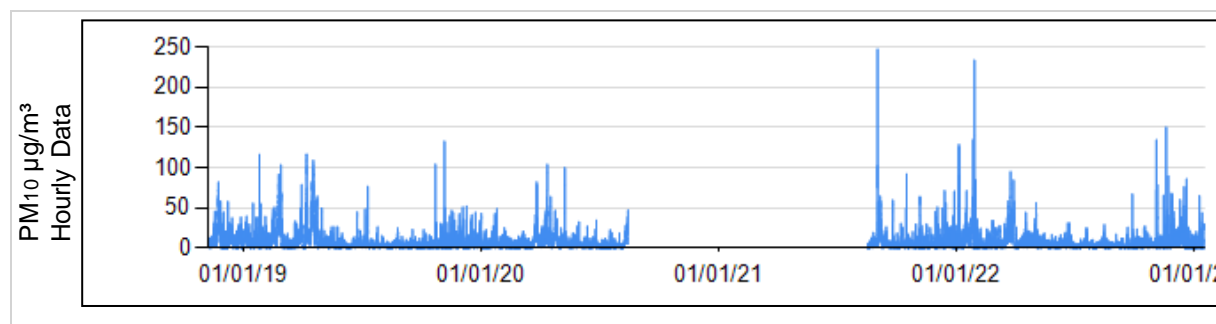
Note: These data are provisional

Correction Factor for Gravimetric Equivalence applied

	V High (No. of Days)	High (No. of Days)	Mod (No. of Days)	Low (No. of Days)	Max. Hourly Conc.	Max. Daily Conc.	Max. Running 8 Hour Mean	Max. Running 24 Hour Mean	Period Mean Conc.	Period Data Capture (%)
PM₁₀ ($\mu\text{g}/\text{m}^3$)	0	1	7	1153	247	76	111	83	8	75.9

	Air Quality Objective	Exceedances	Days
PM₁₀	Daily mean > 50 $\mu\text{g}/\text{m}^3$	8	8
PM₁₀	Period mean > annual mean obj 40 $\mu\text{g}/\text{m}^3$	No	

Note: When comparing site measurements against the air quality objectives data capture should meet or exceed 90% across a calendar year.



Caerphilly Gelligaer E-Sampler

01/11/2018 to 14/08/2020

E-sampler attached to this lamppost near 28 Brynheulog Street, Gelligaer CF82 7FZ

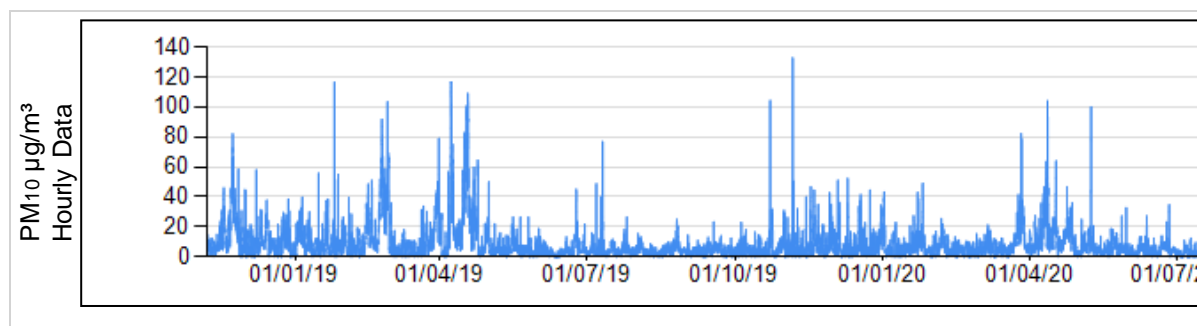
These data have been fully ratified

Correction Factor for Gravimetric Equivalence applied

	V High (No. of Days)	High (No. of Days)	Mod (No. of Days)	Low (No. of Days)	Max. Hourly Conc.	Max. Daily Conc.	Max. Running 8 Hour Mean	Max. Running 24 Hour Mean	Period Mean Conc.	Period Data Capture (%)
PM₁₀ ($\mu\text{g}/\text{m}^3$)	0	1	7	637	133	76	111	83	8	99.9

	Air Quality Objective	Exceedances	Days
PM₁₀	Daily mean > 50 $\mu\text{g}/\text{m}^3$	8	8
PM₁₀	Period mean > annual mean obj 40 $\mu\text{g}/\text{m}^3$	No	

Note: When comparing site measurements against the air quality objectives data capture should meet or exceed 90% across a calendar year.



Caerphilly Gelligaer E-Sampler

17/08/2021 to 16/01/2023

E-sampler attached to this lamppost near 28 Brynheulog Street, Gelligaer CF82 7FZ

Note: These data are provisional

Correction Factor for Gravimetric Equivalence applied

	V High (No. of Days)	High (No. of Days)	Mod (No. of Days)	Low (No. of Days)	Max. Hourly Conc.	Max. Daily Conc.	Max. Running 8 Hour Mean	Max. Running 24 Hour Mean	Period Mean Conc.	Period Data Capture (%)
PM₁₀ ($\mu\text{g}/\text{m}^3$)	0	0	0	516	247	47	76	49	7	99.8

	Air Quality Objective	Exceedances	Days
PM₁₀	Daily mean > 50 $\mu\text{g}/\text{m}^3$	None	0
PM₁₀	Period mean > annual mean obj 40 $\mu\text{g}/\text{m}^3$	No	

Note: When comparing site measurements against the air quality objectives data capture should meet or exceed 90% across a calendar year.

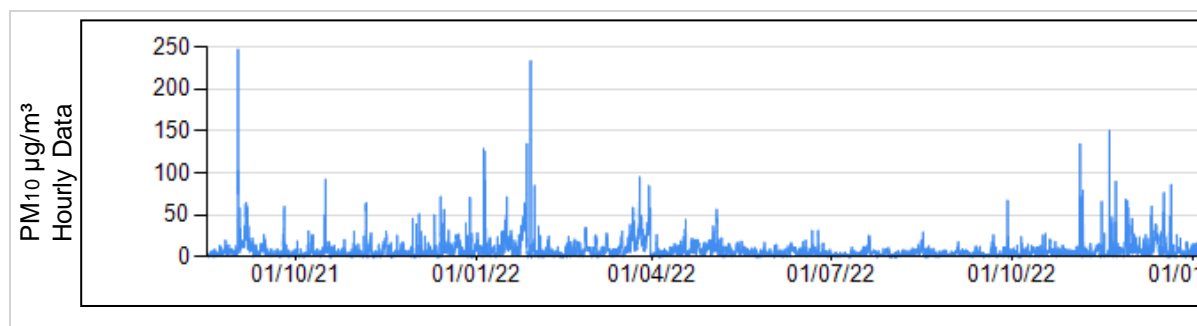


Table 1

**Air Quality (PM₁₀) Data monitored at Penybryn near Gelligaer
November 2018 – April 2019**

Dates	PM ₁₀ Daily mean > 50 µg/m ³	National pollution episode	Blast in quarry
02 Nov 2018	No exceedance		yes
23 Nov 2018	53.12	No	
27 Nov 2018	No exceedance		yes
13 Dec 2018	No exceedance		yes
10 Jan 2019	No exceedance		yes
21 Jan 2019	No exceedance		yes
19 Feb 2019	No exceedance		yes
23 Feb 2019	61.6	Yes	
24 Feb 2019	51.64	Yes	
06 Mar 2019	No exceedance		yes
27 Mar 2019	No exceedance		yes
07 Apr 2019	62.38	No	
08 Apr 2019	62.56	no	
11 Apr 2019	No exceedance		yes
16 Apr 2019	58.81	yes	
17 Apr 2019	75.76	yes	
18 Apr 2019	61.99	yes	

Notes:

During the six months of data capture, there were 8 occasions when the daily mean exceeded 50 µg/m³; the air quality directive allows up to 35 such exceedances per year.

Of these 8 occasions; 5 occasions coincide with high pollution episodes as reported by Bureau Veritas UK.

Throughout this period, there were 4 blasts in the quarry; none of those dates coincided with the exceedance of the daily mean.

The annual mean objective should not exceed 40 µg/m³. The period mean over the six months is 14 µg/m³.

The results to date are reassuring and signify good air quality.