

April 2023 pollution report.

(HDC most recent data 2021)

After a visual inspection of the four sites where pollution monitors are located in Buckden, at 6 Perry road, 4 High Street (roundabout), 34 High Street (shop), 11 Taylors lane, these are 'diffusion tube' type monitors, they are the most basic form of monitor. It would seem that they are regularly inspected and replaced, on presumably a monthly basis by HDC's contractor.

However we should be aware of the limited ability of diffusion tubes, that can only measure averaged out values of NO₂ over a monthly period. For instance the tube may record a high value at a peak time, such as 5:00pm then 15 hours later record a low or zero night reading at 2am. Then all the data collected over a 30 day period is shown as an average. No peak values can be recorded with this type of equipment.

We should be most concerned about peak levels of pollutants such as NO₂ (nitrogen dioxide) and particulates, both 2.5pm (parts per million) and 10pm (parts per million). These peak levels of pollution occur when residents are most likely to be vulnerable to them, ie travelling to and from work, or collecting children from school. We feel the absence of peak level monitoring in Buckden is a concern for the village.

DEFRA (Department for Environment, Food & Rural Affairs) Air Quality Strategy (2000) requires a yearly maximum objective of 40 µg m³. With an hourly max peak of 200 µg m³ with no more than 18 exceedences per year.

There is no system for monitoring hourly NO₂ maximum peaks of pollution in Buckden.

There is no system for monitoring particulates in Buckden.

In 2019 the Buckden diffusion tubes exceeded the yearly average maximum objective NO₂ levels 6 times.

In 2021 this objective level was not exceeded in any month. This confirms a definite continuing downwards trend in pollution levels in general and in Buckden. Covid lockdowns will have had a part in this, but bigger long term factors are at play. Government tightening of petrol and diesel vehicle emission controls and the fast acceleration and adoption of electric vehicles are the main factors. Therefore we should realise that a trend in decreasing pollution levels is not necessarily an indicator of falling vehicle volumes.

We should be concerned that the wrong type of pollution monitoring is available at the A1 Buckden roundabout, unlike the A1 Sandy roundabout that is part of the AURN (Automatic Urban and Rural Network). We observe many similarities between Buckden and Sandy, those of geography, traffic flows, size and number of roads entering, we therefore seek to draw a close comparison. It would

seem that pollution levels at Sandy roundabout have been on par with some others on the AURN network at locations within the M25 corridor, because peak levels are being monitored.

The locations most at risk of pollution issues in Buckden are;

1. The High Street south end, because of the traffic volumes and the height of the buildings to either side, that slows the emitted pollutants from escaping.
2. The A1 corridor and the Buckden roundabout area, purely because of the volume of vehicles including a big percentage of HGV's, that all emit greater pollution due to the either, being in a stop start queue, or stationary, to then accelerate out of the roundabout to the permitted speed limit.

While it seems better monitoring should be adopted, we can console ourselves with the knowledge that, the rapid transition to electric vehicles will lower pollution from ICE (internal combustion engine), as they replace those vehicles on an rapidly increasing basis.

For instance;

BEV (battery electric vehicles) pure electric vehicles have increased sales

7 fold from 105,000 per year in 2019 to 712,000 per year in 2022.

PHEV (plug in hybrid electric vehicles) have increased sales

4 fold from 146,600 per year in 2019 to 485,900 in the same period, these trends are increasing exponentially.

Imagine a time when the long queues of hundreds of vehicles we now experience in and around Buckden, won't be pumping out any pollution into the air we breathe, also with the added advantage of lower traffic noise.

Be aware that the UK's electric grid generation was powered in 2022 by 49.4% low carbon sources and continues to increase that percentage year on year. Generation from fossil fuels was, coal was 1.5% and gas was 38.5% giving a total of 40%. Combined low carbon generation exceeded that figure with, wind 26.8%, nuclear 15.5%, solar 4.4%, hydro 1.8%, energy storage 0.9%, = 49.4%. The remaining generation was biomass 5.2% and imports 5.5%, biomass could be considered carbon neutral but with particulate concerns and imports can be from mixed sources.

2021 HDC data

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.72)	A
Buckden 1	518981	267370	17.7	23.2	17.6	24.4	10.2	16.9	21.1	17.4	27.3	17.1	18.9	26.6	19.9	14.3	
Buckden 2	519082	267433	25.5	19.3	24.8	21.1	15.6	19.4	15.4	18.7	24.6	23.5	28.6	24	21.7	15.6	
Buckden 3	519161	267624	30.9	24.9	27.8	15.7	21.7	19	18.9	19.1	29.9	28.8	31	29.5	24.8	17.8	
Buckden 4	519197	267955	21.8	20.3	20.4	17	10.7	11.1	8.7	11.8	16.7	19.5	23.2	20.5	16.8	12.1	

2019 HDC data

Appendix B: Full Monthly Diffusion Tube Results for 2019

Table B.1 - NO₂ Monthly Diffusion Tube Results - 2019

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.75) and Annualised (1)
Buckden 1	518981	267370	28.2	33.0	22.5	42.2	24.2	29.9	21.9	20.8	23.4	32.3	40.3	29.4	29.0	21.8
Buckden 2	519082	267433	38.5	33.6	27.0	27.4	25.5	22.9	27.0	32.9	26.5	31.3	31.6	31.0	29.6	22.2
Buckden 3	519161	267624	33.5	48.4	31.8	33.0	27.4	28.1	27.3	30.6	29.2	40.7	41.0	40.1	34.3	25.7
Buckden 4	519197	267955	24.8	31.6	23.3	19.7	14.9	20.7	14.4	19.3	18.4	26.8	30.7	28.9	22.8	17.1

Regards Allan Jones.

Buckden Parish Coucillor - Large Scale Planning Committee - Climate Change Mitigation Advisory Group.

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