

Diffusion Tube Data

Diffusion tubes provide a monthly nitrogen dioxide average, as this is currently a small data set the results should be viewed with caution diffusion tube studies should be as a minimum 6 months long. Data is adjusted annually using national bias adjustment factors, typically we see concentrations reduce once the factor is applied. The adjustment factor for 2016 was 0.77, if the same factor was applied to the data collected so far for 2017 the measured results would reduce by nearly a quarter, most sites would still however exceed the $40 \mu\text{g m}^{-3}$ objective. Data for 2016 is provided in Table 1, data so far for 2017 is provided in Table 2 and 3.

Bias Adjustment Factor

Some local authorities co-locate diffusion tubes with their automatic air quality monitors (AM); tubes are placed in triplicate with the AM in order to find the difference between the more accurate AM readings and diffusion tube measurements. The data from the co-location study is supplied to the National Physical Laboratory (NPL) on a quarterly basis who collate the data from all local authorities and also from the laboratories who supply the diffusion tubes (there are a number of labs who supply diffusion tubes using different preparation methods which is also factored in to the adjustment factor). The NPL then produce a national bias adjustment factor (NBAF) for each laboratory and each of their diffusion tube preparation method. On an annual basis I find the NBAF for the lab and method applicable to our diffusion tubes and all diffusion tube data is multiplied by that factor to give a final result.

Automatic monitors record measurements continuously. Hackney has one such monitor on Old Street the data for which can be found on the London Air website <https://www.londonair.org.uk/london/asp/lahome.asp>

Air Quality Monitoring Results

Air quality monitoring results are reported to the Greater London Authority (GLA) on an annual basis in an Annual Status Report. The 2016 report will be published on the Hackney Council website shortly.

Table 1: Annual nitrogen dioxide diffusion tube data (*within area of interest*)

Site ID	Site Name	Site Description	Easting	Northing	Valid data capture for monitoring period %	Valid data capture 2016 %	Annual Mean Nitrogen Dioxide Concentration ($\mu\text{g m}^{-3}$)			
							2013	2014	2015	2016
20	De Beauvoir Primary School	Tottenham Road	533250	184743	100.0%	100.0%	33	27	32.0	33.2
56	Southgate 1	55 Buckingham Road	533097	184632	75.0%	75.0%	-	-	-	35.8
57	Southgate 2	176 Southgate Road	533002	184656	83.3%	83.3%	-	-	-	39.0
58	Southgate 3	142 Southgate Road	532964	184512	83.3%	83.3%	-	-	-	44.9
59	Southgate 4	52A Englefield Road	533025	184425	83.3%	83.3%	-	-	-	41.5
60	Southgate 5	12 Ardleigh Road	533081	184520	75.0%	75.0%	-	-	-	39.3
61	Southgate 6	99A De Beauvoir Road	533220	184353	83.3%	83.3%	-	-	-	36.9
69	Kingsland Road	Opposite 412 Kingsland Road	533490	184291	91.7%	91.7%	-	-	-	51.8

Notes: Exceedance of the NO₂ annual mean Air Quality Objective of 40 $\mu\text{g m}^{-3}$ are shown in **bold**.

Table 2: Monthly nitrogen dioxide diffusion tube data 2017 (within area of interest)

Site name	Nitrogen dioxide concentration ($\mu\text{g m}^{-3}$)					
	Jan	Feb	Mar	Apr	May	June
Southgate 1	63	Missing	48	36.4	28.2	32.1
Southgate 2	50.8	67.3	46.6	37	35.8	38
Southgate 3	88.3	69.4	Missing	54.6	56.1	45.6
Southgate 4	78.4	50	70	56.6	46.8	50.3
Southgate 5	53.1	57.6	44.3	34.3	31.6	29.6
Southgate 6	56	64.5	54.2	37	40.9	37
De Beauvoir School	62.1	45.9	43.5	39.5	31.3	30.1

Kingsland Road	83.9	78.8	74.7	70.3	54.3	62.9
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Review of monitoring locations

Monitoring locations are reviewed periodically; there are a number of strategic locations that have been in place for a number of years and will remain. Other monitoring locations are in place for a year or so in order to monitor projects such as the Low Emission Network in Shoreditch / schools project. Currently there are no plans to extend the diffusion tube network further from a strategic point of view; however, new tubes are added from time to time in connection to project work.