



AIR QUALITY APPRAISAL

on behalf of

JAMIESON CONTRACTING LTD

for

ASHTON OLD ROAD, MANCHESTER, M11 1HL

REPORT DATE: 6TH DECEMBER 2024

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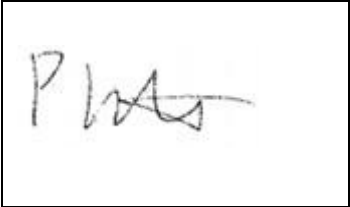
Summary

This air quality report has been prepared to accompany a discharge of planning condition application for residential development at Ashton Old Road, Manchester, M11 1HL. Planning condition 8 of planning permission reference 13788/FO/2023 requires details of a scheme for clean air intake and a mitigation statement prior to any occupation.

A detailed review of local air quality monitoring data and concentration estimates at the building façade concludes future residents will not be exposed to adverse air quality above the long term and short-term NO₂ and PM₁₀ air quality objectives or the PM_{2.5} annual mean target level.

A clean air intake system (i.e. mechanical ventilation) is not required to protect future occupants from poor air quality. No mitigation is required, and openable windows are acceptable for air quality.

This report provides evidence to support the conclusion that no building treatment mitigation is required. The information provided is sufficient to discharge planning condition 8, on the basis that no clean air intake mitigation is required.

Prepared By	Philip Walton	Reviewed By	Unam Ejaz
Signed		Signed	
Date	6th December 2024	Date	6th December 2024

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1 Introduction

- 1.1 Miller Goodall Ltd has been instructed to prepare an air quality appraisal to accompany the discharge of planning condition application for a residential development at Ashton Old Road, Manchester, M11 1HL. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 The development received planning permission (Ref. 137885/FO/2023) on 21st August 2023. During the live planning application stages, there were no assessments completed for air quality. The site resides partially within the Greater Manchester Air Quality Management Area, therefore, MCC placed a planning condition 8 on the approved decision notice to ensure future occupants would be protected from potentially poor air quality.
- 1.3 Planning condition 8 states:

"a) Prior to above ground works commencing, a scheme for a clean air intake shall be submitted to and approved in writing by the City Council as local planning authority.

b) Prior to occupation of the development any agreed mitigation measures shall be implemented and verified as such in writing by the City Council as local planning authority and shall remain in situ whilst the use or development is in operation."
- 1.4 An air quality appraisal of the baseline environment, future sensitive receptor position and an assessment of potential air quality objective exceedances at the development site has been completed and is presented in this report. Data sources used include inspection of the MCC local air quality monitoring network and the Defra Local Air Quality Management Tools (background concentrations, NO₂ Fall off with Distance).
- 1.5 The review indicates future sensitive receptors will not be exposed to concentrations above the air quality objectives. Evidence is provided to conclude that a clean air intake system (i.e. mechanical ventilation and sealed windows) is not required.
- 1.6 The main pollutants of health concern from road traffic exhaust releases are nitrogen dioxide (NO₂) and fine particulates, normally assessed as the fraction of airborne particles of mean aerodynamic diameter less than ten micrometres (PM₁₀) and 2.5 micrometres (PM_{2.5}) since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and congested areas.

2 Site Description

- 2.1 The site is located on a vacant plot of land to the south of Ashton Old Road (A635), located at x: 389785, y: 397339. Burman Street is to the north east, and Cheeryble Street is to the north west.
- 2.2 Ashton Old Road is located to the north of the site, with dwellings located beyond. Dwellings border the site to the east and west. Delamere Park borders the site to the south.
- 2.3 The site lies partially within the Greater Manchester Air Quality Management Area (AQMA), extending approximately 50% into the site footprint. The site location and AQMA are shown in **Appendix A**.

3 Proposed Development

- 3.1 The proposed development comprises a three-storey residential property, providing three flats (ground floor, first floor, second floor).
- 3.2 The building layout is in keeping with the neighbouring properties. The frontage will include a driveway and garden. The building façade is setback 9.6 m from the kerb of Ashton Old Road.

4 Policy Context

4.1 National Planning Policy Framework

- 4.1.1 The National Planning Policy Framework^[1] advises at Paragraph 192 that development should be compliant with relevant objectives and limit values, opportunities to improve air quality should be included particularly at the design stage, and that new development should be consistent with existing air quality areas of concern and the local air quality action plans. The key theme of the policy is that existing areas of poor air quality (for example AQMAs or Clean Air Zones) should be not significantly worsened by a development scheme.

¹ Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities, 2023. National Planning Policy Framework

4.2 Planning Practice Guidance

4.2.1 The Planning Practice Guidance (PPG)², provides guidance on how planning can take account of the impact of new development on air quality. It provides advice on how assessments should be prepared, information sources to use, what impacts and issues should be predicted, and mitigation.

4.3 Air Quality Objectives

- 4.3.1 The standards and objectives relevant to the LAQM framework have been prescribed through the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations 2002; the Air Quality Standards Regulations 2010 set out the combined Daughter Directive limit values and interim targets for Member State compliance. This framework of air quality legislation was converted into domestic law through the European Union (Withdrawal) Act 2018^[3].
- 4.3.2 The relevant air quality standards and objectives⁴ are presented in **Table 1**.

Table 1: Air Quality Strategy Objectives (England) for the Purposes of Local Air Quality Management

Pollutant	Air Quality Objective	
	Concentration	Measured As
Nitrogen dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year
	40 µg/m ³	Annual mean
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 times per year
	40 µg/m ³	Annual mean
Particles (PM _{2.5})	20 µg/m ³	Annual mean (target)
	10 µg/m ³	Annual mean (target) (to be achieved by 2040)

² Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities, *Planning Practice Guidance - Air Quality* 2019 [Air quality - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/air-quality)

³ UK Parliament (2018): [http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted](https://www.legislation.gov.uk/ukpga/2018/16/contents/enacted)

⁴ UK Parliament (2020): <https://www.legislation.gov.uk/uksi/2020/1313/made>

- 4.3.3 Possible exceedances of air quality objectives are generally assessed in relation to those locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.

5 Methodology

5.1 Data Sources

- 5.1.1 The air quality assessment has been undertaken and prepared with reference to information from several sources, as detailed in **Table 2**.

Table 2: Key Information Sources

Data Source	Reference
	MCC / GMCA (2023) <i>2023 Air Quality Annual Status Report for Greater Manchester</i>
Manchester City Council (MCC) / Greater Manchester Combined Authority (GMCA)	MCC / GMCA (2016) <i>Greater Manchester Air Quality Action Plan 2016-2021</i>
	GMCA Greater Manchester Clean Air website Home Clean Air Greater Manchester (cleanairgm.com)
Department for Environment Food and Rural Affairs (Defra)	Defra <i>Local Air Quality Management Technical Guidance TG(22)</i> , updated 2022
Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM)	EPUK and IAQM (January 2017) <i>Land Use Planning and Development Control: Planning for Air Quality (v1.2)</i>
Ministry of Housing, Communities & Local Government	Planning Practice Guidance: Air Quality, November 2019
	National Planning Policy Framework (NPPF), December 2023
Defra's LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps
	NO ₂ Fall Off With Distance Calculator

5.2 Air Quality Appraisal

- 5.2.1 An air quality appraisal to determine whether future receptors may be exposed to adverse air quality has been completed. The appraisal considers the Local Authority's monitoring network and the Defra LAQM support tools.

6 Baseline Air Quality

6.1 Local Air Quality

- 6.1.1 Baseline air quality at the proposed development has been established by examining monitoring data produced by MCC (provided on the Greater Manchester Clean Air website⁵) and background concentration maps provided by Defra for the grid squares covering the proposed development.
- 6.1.2 The Greater Manchester AQMA has been declared based on the outputs of air dispersion modelling conducted in 2016. All locations across Greater Manchester that were predicted to be above an NO₂ annual mean of 35 µg/m³ were declared as part of the AQMA. The annual mean objective is 40 µg/m³, the selection of 35 µg/m³ as the threshold was selected to account for model uncertainty.

6.2 Air Quality Monitoring

Nitrogen Dioxide (NO₂)

- 6.2.1 The MCC monitoring network includes two diffusion tubes located on Ashton Old Road, to the west of the site.
- 6.2.2 Diffusion tube MAN28 is located approximately 1.8 km to the west of the site. This monitor is positioned on the south-side of Ashton Old Road, as is the development site.
- 6.2.3 Diffusion tube MAN95 is located approximately 3.1 km to the west of the site. This monitor is positioned on the north-side of Ashton Old Road, which is downwind of the prevailing southerly wind direction for the Greater Manchester region⁶. The monitor is also within the 'inner' ring road of Manchester (west of the A6010).

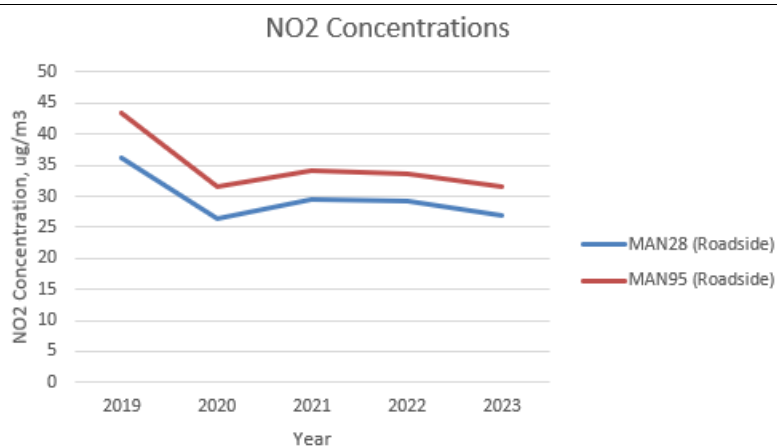
⁵ Greater Manchester Clean Air. Data Hub. Available at: <https://cleanairgm.com/data-hub/>

⁶ Air Pollution Services. Meteorological Wind Rose for Manchester Airport. Available to View at: <https://www.airpollutionservices.co.uk/product/met-data-manchester/>

6.2.4 The results from these diffusion tubes are shown in **Table 3** and the monitor locations are shown in **Appendix A**.

Table 3: Annual Mean NO₂ Concentrations Monitored by MCC within the Study Area

Site ID & Classification	Location	Annual Mean NO ₂ Concentrations (µg/m ³)				
		2019	2020	2021	2022	2023
MAN28 (Roadside)	387951 397430	36.1	26.4	29.4	29.3	26.9
MAN95 (Roadside)	386668 397566	43.4	31.5	34.1	33.7	31.5



Annual Mean NO₂ air quality objective

40 µg/m³

6.2.5 The monitoring results in **Table 3** indicate that annual mean concentrations of NO₂ are below the NO₂ annual mean objective at the identified monitoring sites during the period shown, from post-Covid. A single exceedance was found in the first year of monitoring at MAN95, in 2019. There has been a continued stabilisation of the monitoring results since 2020, below the air quality objective, with the most recent trend showing concentrations reducing between 2022 to 2023.

6.2.6 The results indicate that the short-term objective for NO₂ was unlikely to be exceeded at the identified monitoring sites, as monitored annual mean concentrations were well below the indicative screening concentration of 60 µg/m³ during the period shown.

Particulate Matter (PM₁₀ & PM_{2.5})

6.2.7 MCC does not undertake PM₁₀ or PM_{2.5} monitoring in the vicinity of the proposed development site, neither is there any nearby representative monitoring available. However, the Greater Manchester network does include several automatic monitors positioned throughout the region and city centre. There have been no recorded exceedances of particulate matter in 2023.

6.3 Background Concentrations

- 6.3.1 There are no background monitoring locations in the vicinity of the proposed development site or at any nearby relevant receptor locations.
- 6.3.2 Background concentrations of NO₂, PM₁₀ and PM_{2.5} obtained from the 2021-based background concentration maps provided by Defra for the grid squares covering the proposed development and receptor locations⁷ are shown in **Table 4**.

Table 4: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Local Area

Grid Square	Pollutant	2025
		(µg/m ³)
389500, 397500 (Development Site)	NO ₂	14.14
	PM ₁₀	12.74
	PM _{2.5}	7.76
387500, 397500 (MAN28)	NO ₂	17.11
	PM ₁₀	12.92
	PM _{2.5}	7.67
386500, 397500 (MAN95)	NO ₂	16.38
	PM ₁₀	12.77
	PM _{2.5}	7.62

7 Effect of Air Quality on the Proposed Development

- 7.1 The background concentrations in **Table 4** indicate that background concentrations of NO₂, PM₁₀ and PM_{2.5} around the development are well below health-based air quality objectives of 40 µg/m³ for these pollutants.
- 7.2 The local air quality monitoring data indicates NO₂ concentrations have remained below the annual mean air quality objectives since 2020 (**Table 3**), and longer at the nearest monitor to the site MAN28^[8]. These monitors are located along Ashton Old Road and are, therefore, representative of potential local air quality along this route.

⁷ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>
⁸ <https://cleanairgm.com/data-hub/diffusion-tubes/Manchester%2028>

- 7.3 MAN28 shares several qualities to the development site, which include its positioning on the south-side of the road, along an expected free-flowing section of the road, and positioned at a two-lane section of Ashton Old Road. MAN95 is also located along Ashton Old Road, but is likely to experience slightly worse conditions, as it is placed on the north-side (downwind) and is closer to a traffic light junction that forms into four lanes.
- 7.4 The Defra LAQM tool NO₂ Fall off With Distance⁹ has been used to assess the potential concentrations at the building façade, which is setback 9.6 m from the Ashton Old Road kerb. Pollution reduces with distance from the source, which in this case is vehicle emissions from Ashton Old Road.
- 7.5 The NO₂ Fall off With Distance calculator requires the user to input the monitored concentration, the background concentration and the distances to the kerb for both the monitor and the receptor. **Appendix B** shows the inputs and outputs of the calculator.
- 7.6 The calculator predicts that over the 9.6 m distance from the kerb to the building façade there will be an approximate 4 µg/m³ further reduction in NO₂ concentrations, compared to the monitored results presented in **Table 3**. The predicted NO₂ concentration is between 22.4 µg/m³ to 26.5 µg/m³, depending on which monitor is used as reference; as noted, MAN28 (22.4 µg/m³) is considered to be the most representative.
- 7.7 The annual mean objectives do not apply to the driveway and garden frontage within the 9.6 m distance. LAQM.TG(22) provides a qualitative screening approach to determine whether there is a risk of exceedance of the one-hour NO₂ air quality objective. If the ambient NO₂ annual mean concentration is above 60 µg/m³ there is a risk that the one-hour objective (200 µg/m³) may be exceeded. The monitored NO₂ concentrations, shown in **Table 3**, are all well below 60 µg/m³ and, therefore, when considered in light of guidance in LAQM.TG(22), the 1-hour mean objective is unlikely to be exceeded.
- 7.8 The garden located at the front of the property nearest to Ashton Old Road will not exceed the one-hour mean NO₂ air quality objective.
- 7.9 The studies conducted for this air quality appraisal indicate future receptors are expected to experience levels of NO₂, and PM₁₀ below the annual mean and short-term objectives and PM_{2.5} concentrations below the annual mean target level.

⁹ Department for Food, Rural Affairs and Environment, 2016. NO₂ Fall off With Distance.

8 Mitigation

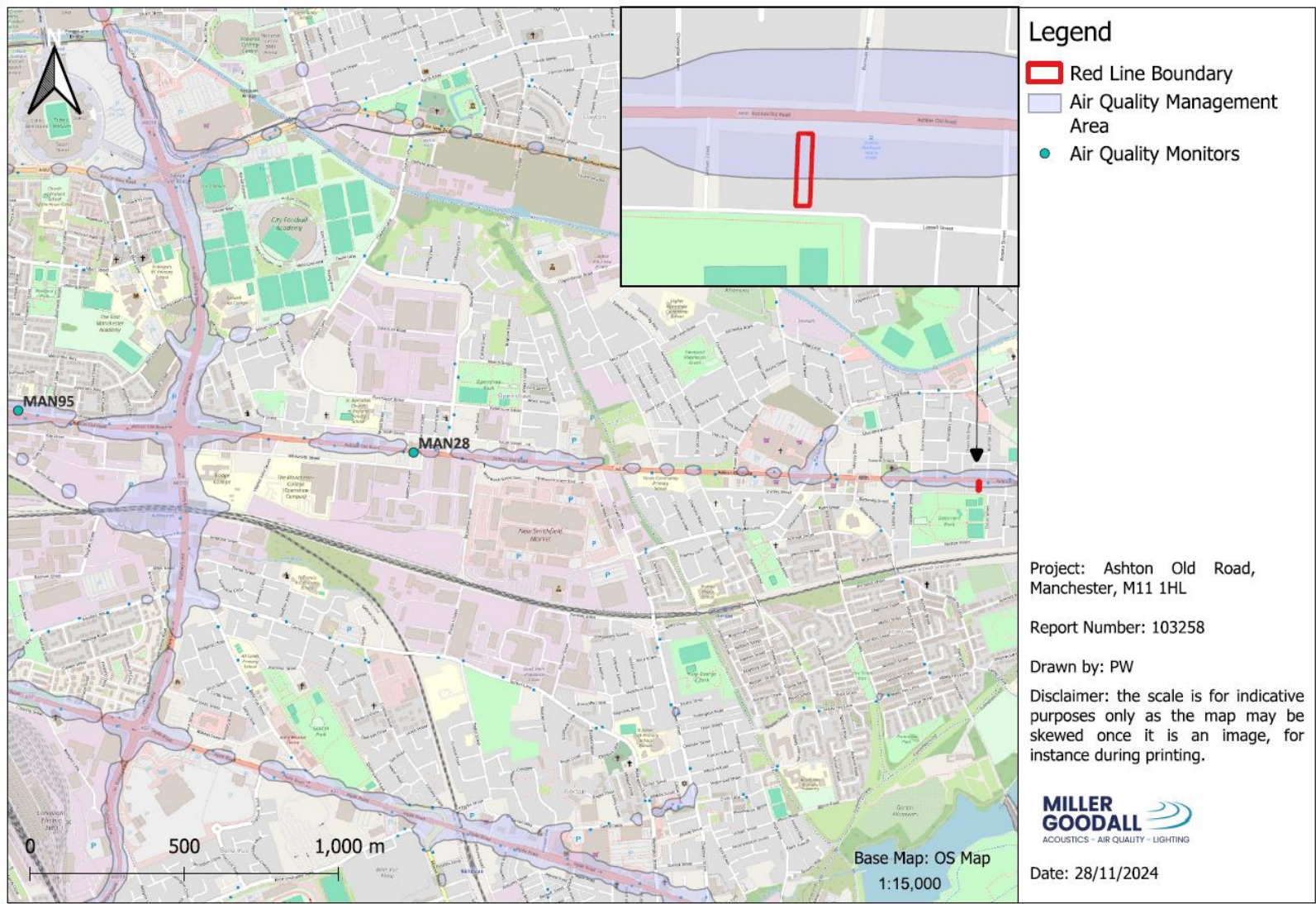
- 8.1 Planning condition 8 requires details of a clean air intake system (i.e. mechanical ventilation). This system would require sealed windows and a ventilation system to treat drawn air arriving into the building.
- 8.2 Based on the conclusions of this air quality appraisal, it is considered that a clean air intake system is **not required**.

9 Summary of Impacts and Conclusion

- 9.1 Concentrations of NO₂ and PM₁₀ are likely to be below their respective long and short-term objectives at the proposed development site, which is therefore considered suitable for residential use with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.
- 9.2 The air quality review, considering local monitoring data, background concentrations, and estimated concentration reductions based on distance from the kerb of Ashton Old Road, concludes that future occupants will not experience air quality concentrations exceeding the air quality objectives.
- 9.3 The assessment concludes NO₂ concentrations at the building will be 22.4 µg/m³, well below the 40 µg/m³ annual mean air quality objective. The air quality appraisal concludes that no further mitigation or building treatment is needed to protect occupants from poor air quality.
- 9.4 The evidence and information provided in this document is sufficient to discharge planning condition 8, concerning air quality mitigation. A clean air intake system is not required.

APPENDICES

Appendix A: Location of site, AQMA, MCC monitoring and receptors



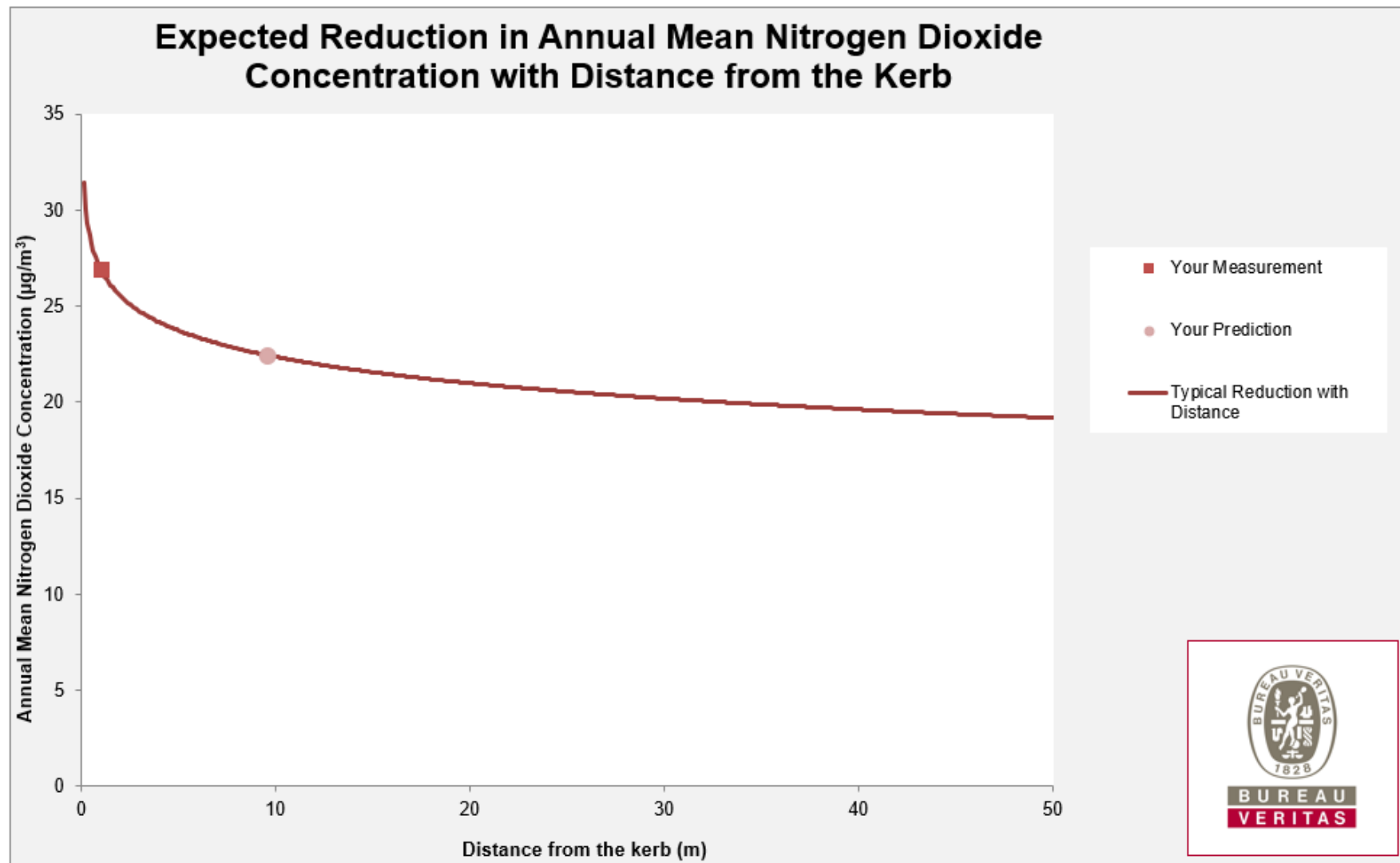
Appendix B: NO₂ Fall off with Distance Calculator Results

Inputs and Outputs (MAN28 & MAN95, 2023 monitoring result). Monitor distance to kerb sourced from the monitor details on GM Clean Air⁵.



Enter data into the pink cells

Site Name/ID	Distance (m)		NO ₂ Annual Mean Concentration (µg/m ³)			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
MAN28 (Roadside)	1.0	9.6	17.1	26.9	22.4	
MAN95 (Roadside)	2.5	9.6	16.4	31.5	26.5	

Graphical Output for MAN28 (using 2023 monitoring result)

Glossary of Terms

Air Quality Standard Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health and the environment

Air Quality Objective (AQO) Pollutant Objectives incorporate future dates by which a standard is to be achieved, taking into account economic considerations, practicability and technical feasibility

Annual Mean A mean pollutant concentration value in air which is calculated on a yearly basis, yielding one annual mean per calendar year. In the UK air quality regulations, the annual mean for a particular substance at a particular location for a particular calendar year is:

- (a) in the case of lead, the mean of the daily levels for that year;
- (b) in the case of nitrogen dioxide, the mean of the hourly means for that year;
- (c) in the case of PM₁₀, the mean of the 24-hour means for that year.

AQAP Air Quality Action Plan

AQMA Air Quality Management Area

AQS Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Background Concentrations The term used to describe pollutant concentrations which exist in the ambient atmosphere, excluding local pollution sources such as roads and stacks

Defra Department for Environment, Food and Rural Affairs

EPUK Environmental Protection UK

IAQM Institute of Air Quality Management

LAQM Local Air Quality Management

µg/m³ Microgrammes (of pollutant) per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m³ means that one cubic metre of air contains one microgramme (millionth of a gramme) of pollutant

NO₂ Nitrogen Dioxide

NO_x A collective term used to represent the mixture of nitrogen oxides in the atmosphere, as nitric oxide (NO) and nitrogen dioxide (NO₂)

NPPF National Planning Policy Framework

PM_{2.5} The fraction of particles with a mean aerodynamic diameter equal to, or less than, 2.5 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM_{2.5}, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter

PM₁₀ The fraction of particles with a mean aerodynamic diameter equal to, or less than, 10 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM₁₀, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter

