Appendix 6: Air emissions risk assessment



Mondelez UK Confectionery Production Ltd

Air Quality Impact Assessment

Sheffield confectionery manufacturing plant

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1 Introduction

1.1 Background

Mondelez UK Confectionery Production Limited (Mondelez) operates a food manufacturing facility at its Sheffield factory site located on Livesey Road, Sheffield, South Yorkshire (the site). The manufacturing operations require permitting as a Part A(1) process by the Environment Agency (EA) under the Environmental Permitting (England and Wales) Regulations 2016 (2016 No. 1154) (Schedule 1, Section 6.8 Part A(1)(d)(iii) (as amended).

> *"animal and vegetable raw materials (other than milk only), both in combined and separate products, with a finished product production capacity in tonnes per day greater than —*
>
> *(aa)75 if A is equal to 10 or more, or*
>
> *(bb)300-(22.5 x A) in any other case,*
>
> *where 'A' is the portion of animal material in percent of weight of the finished product production capacity".*

This change in regulatory status will bring the steam raising boilers operated on site by Mondelez, which are currently permitted (where required) as standalone Medium Combustion Plant (MCP) into the new wider site permit as directly associated activities to the Part A(1) process. To support the permit application, Mondelez commissioned Project Environmental Solutions Ltd (PESL) to undertake an air quality impact assessment (AQIA) of emissions to air from the boiler operations at the Sheffield site, and this is reported here.

1.2 Low emission / high efficiency boiler upgrades

In 2025 Mondelez completed a programme of improvements to the boiler plant on site, which has allowed for the phased decommissioning and removal of four legacy MCP boilers and their replacement with three new MCP boilers as summarised in Table 1 below. This represented a significant investment in emissions reduction and carbon intensity. This programme was fully approved, with orders placed and detailed design complete in 2022-2023, with staged commissioning in 2024-2025 and site works completed in October 2025. The EA has been fully appraised of the scheme and pre-application discussion carried out[1]. As requested by the EA, this AQIA compares these historical operations at the site with current (new) boiler provision, in order to demonstrate the benefits of the boiler upgrade programme in terms of local air quality.

[1] 01/08/2024

Table 1 Boiler replacement programme

Current Programme Date	Historical (pre-2025)		Current operations (2025-)	
MCP Boiler Name **	**Status / maximum thermal input capacity MWth**			
MCP Boiler 1 (existing)	4.97	Not permitted (2029 MCP phase in date)	decommissioned	
MCP Boiler 2 (existing)	4.97		decommissioned	
MCP Boiler 3 (existing)	9.8	Permitted as standalone MCP	decommissioned	
MCP Boiler 4 (existing)	9.8		decommissioned	
MCP Boiler 1 (new)	N/A	Permitted as standalone MCP, but not commissioned at time of original MCP application	5.5 *	Permitted as standalone MCP
MCP Boiler 2 (new)	N/A		5.5 *	
MCP Boiler 3 (new)	N/A		5.5 *	
Total boilers commissioned and permitted	**4**		**3**	
Total commissioned capacity	**29.54**		**16.5**	

* Burner rating; boiler shell 100% rating 4.66 MWth. Units are currently permitted under MCPD as 5.9 MWth each which was based on early design information, as built is as stated in this table

** 'Existing' and 'New' terminology was used in the MCP application to describe the boilers, see information box later in this chapter which outlines the naming convention used in this report

The boiler investment programme has seen the total input thermal capacity of the boilers substantially reduced from 29.54 MWth to 16.5 MWth (a reduction of 13 MWth, or 44%). The three new boilers are of a high efficiency design (with economisers) offering significant gains in efficiency and reductions on carbon dioxide (CO_2) emissions. They are also 'new plant' MCPD emission limit compliant, with 'low NOx burners'. The current (newly installed) Boilers 1, 2 and 3 utilise the chimney stacks used for historical Boilers 1, 2 and 3, so there will be no change in the location of emissions points. Legacy redundant secondary ductwork associated with (failed) economisers installed on the historical boilers has been removed as part of the works to avoid disruption or turbulent airflows occurring in the stacks. All of the boilers will run on natural gas only.

1.3 Study Outline

This report describes the methods used to assess the potential air quality effects from the operation of current boilers (already MCP permitted) in comparison to the historical operations; the baseline conditions currently existing at the Sheffield site and surrounding area; the mitigation measures required to prevent or reduce the potential for significant adverse effects to occur (i.e. through use of appropriate stack heights and low emission combustion controls); and the likely residual effects after these measures have been adopted.

The AQIA has been carried out following the relevant Environment Agency air quality risk assessment guidance (Environment Agency, 2025). The AQIA considers the following aspects in respect of emissions to air from the boilers:

- The potential impact on human health due to emissions to air of oxides of nitrogen (NOx) in the form of nitrogen dioxide (NO_2) and carbon monoxide (CO) and the resulting concentrations of the pollutants at nearby relevant exposure locations; and
- The potential impact on vegetation and ecosystems due to emissions of NOx and the resulting concentrations and deposition of nitrogen and acid at nearby relevant protected conservation areas.

1.4 This Report

Chapter 2 of this report includes details of the emissions parameters for the historical and current boilers. Chapter 3 describes the methodology and relevant input data used in the detailed dispersion modelling assessment. Model uncertainties and potential limitations are also discussed. Chapter 4 sets out the results of the full dispersion modelling assessment and their interpretation, including determination of significance, together with sensitivity analysis of certain results as required. In Chapter 5, the conclusions from the assessment are provided, with references in Chapter 6.

Terminology used in respect of boiler generations

For the avoidance of doubt the following terminology has been used to distinguish between the new boilers on site, for which commissioning was completed in 2025 and the older boilers which operated on site prior to the completion of the upgrade project in 2025:

- 'Current' refers to the three newly installed and recently commissioned high efficiency, low emission boilers.
- 'Historical' refers to the four legacy boilers which operated at the site for over forty years, which have now been decommissioned.

2 Source Emissions Data and Parameters

2.1 Data sources

The emissions parameters for the historical and current boilers have been compiled from the following sources:

- Current boiler design and emissions data provided to Mondelez by suppliers (Mondelez, 2024).
- Historical plant details, including burner specifications from site records (Mondelez, 2024).
- Calculation, where necessary, to supplement available information.
- Existing permitted emission limit values (ELVs) for historical and current boiler plant (permit reference EPR/CP3126SW).
- Layout plans and drawings of the Sheffield site provided by Mondelez (Mondelez, 2024).

2.2 Boiler Operation and Fuel Type

The current boilers are to be operated on natural gas continuously for at least 50 weeks of the year with a planned non-operational period of up to two weeks required for annual maintenance (i.e. similar to current operations). There is no gas oil standby firing as the natural gas supply contract is on an uninterruptible basis; this is the same as for historical boiler operations at the site for a number of years.

The historical and current boiler operations are described below; 'historical operations' represent a worst case, 'current operations' an improvement case:

- Historical operations: Up to four boilers firing, as per historical operations when site steam demand was much higher and reflecting the current MCPD permitted status.
- Current operations: Any two of the three new boiler operating via high efficiency sequencing controllers, reflecting current and future (lower) site steam demand. This also reflects the current permitted status under MCPD.

2.3 Other combustion plant

The main application details other combustion plant located within the proposed Sheffield installation, which will fall within scope of the new environmental permit. These sources were reviewed and determined that they should not fall within scope of this AQIA by virtue of their representing:

- Occasional or emergency use only sources (such as the standby diesel firewater pump).
- Insignificant sources (such as very small gas fired space heaters).

3 Detailed Assessment Methodology and Input Data

This chapter presents a summary of the methodology used for the detailed assessment of the potential effects associated with emissions to air from the boilers using dispersion modelling. A full description of the dispersion modelling study inputs and assumptions are provided in Annex A.

3.1 Overall Approach

The detailed assessment was carried out using an atmospheric dispersion modelling technique. Atmospheric Dispersion Modelling System (ADMS) version 6.0.2 (produced by Cambridge Environmental Research Consultants Ltd.) was used to model releases of the identified substances. The ADMS model predicts the dispersion of operational emissions from specific sources (i.e. in this case, the boiler stacks for the Historical and Current cases), and the subsequent concentrations over an identified area (e.g. at ground level across a grid of receptor points) or at specified points (e.g. a residential property, school or other relevant receptor location). ADMS was selected because this model is fit for the purpose of modelling the emissions from the type of source on-site (i.e. point source emissions from a combustion source) and is accepted as a suitable assessment tool by local authorities and environmental regulators such as the Environment Agency. ADMS is particularly suited for the Sheffield installation, due to its reported better treatment of complex terrain (such as that seen in the vicinity of the Sheffield site) compared to other model options (Carruthers, *et al*, 2011).

The modelling assessment was undertaken with due consideration to the relevant Environment Agency air quality risk assessment guidance (Environment Agency, 2024) and air dispersion modelling reporting guidance (Environment Agency, 2024). Consideration was also given to Environment Agency Medium Combustion Plant guidance (Environment Agency, 2019). A summary of the dispersion modelling procedure is set out below.

- Information on plant location, plant emission characteristics, candidate abatement and control options and operating hours were supplied by Mondelez (Mondelez, 2024).
- Five years of hourly sequential Numerical Weather Prediction (NWP) meteorological data for the site location, formatted for use in ADMS, was used for the assessment (Atmospheric Dispersion Modelling Ltd, 2024).
- Information on the main buildings located on-site, which could influence dispersion of emissions from the boiler stacks, was obtained from Mondelez (Mondelez, 2024).
- A total of 32 human receptor locations (R1 – R12 and R13_1 – R13_20) were identified at which the predicted concentrations of the pollutants for each of the five years of meteorological data would be modelled. The receptor height was set at 1.6 m to represent the ‘breathing zone’. The human receptor locations are set out in detail in Annex A, Table 15. For receptors R13_1 – R13_20 (representing short-term exposure locations along a public footpaths / tracks), only the 1-hour mean pollutant concentrations were considered.
- A total of 166 receptor locations associated with 27 ecologically sensitive sites (H1 – H27) were identified at which the predicted annual mean and 24-hour mean NOx concentrations for each of the five years of meteorological data would be modelled. These were modelled at a height of 0 m to represent the ground level. The ecological receptor locations and descriptions are provided in Annex A, Table 16.
- The above information was entered into the dispersion model for the operational scenarios under consideration.
- The dispersion models were run to provide the Process Contribution (PC) values for operational scenarios under consideration. The PC is the estimated maximum environmental concentration of substances due to releases from the process alone. The results were then combined with background concentrations (see Section 3.4) to provide the Predicted Environmental Concentration (PEC) of the substances of interest.

- The PECs were then assessed against the appropriate Environmental Quality Standards (EQSs) for the pollutants considered as set out in the Environment Agency guidance document (Environment Agency, 2025) to determine the nature and extent of any potential adverse effects (see section 3.6).
- The predicted annual mean NOx concentrations were also used to assess the potential impact from nitrogen and acid deposition at the assessed ecological receptors. Appropriate Critical Load values were identified for this assessment, obtained from the Air Pollution Information System (APIS) website operated by the Centre for Ecology and Hydrology (CEH) (CEH, 2025). See Annex A for further details of the methodology for undertaking the calculation of deposition rates.

3.2 Assessment Scenarios

The high-level modelled scenarios are set out below:

- Historical Scenario – Natural Gas: 4 no. historical boilers operating on natural gas.
- Current Scenario – Natural Gas: 2 no. current boilers (specifically Boiler No.1 and Boiler No.2) operating on natural gas.

The 'Historical Scenario' is still considered relevant for discussion within this AQIA as it reflects how the site operated for over forty years and presents a baseline against which to demonstrate the benefits associated with the very substantial investment which has resulted in the currently installed plant. It was also specifically requested by an Environment Agency AQMAU[2] representative present at the pre-application discussion[3]. The historical boilers were permitted, where required, as MCP and complied with 'existing plant' permit Emission Limit Values (ELVs) in place.

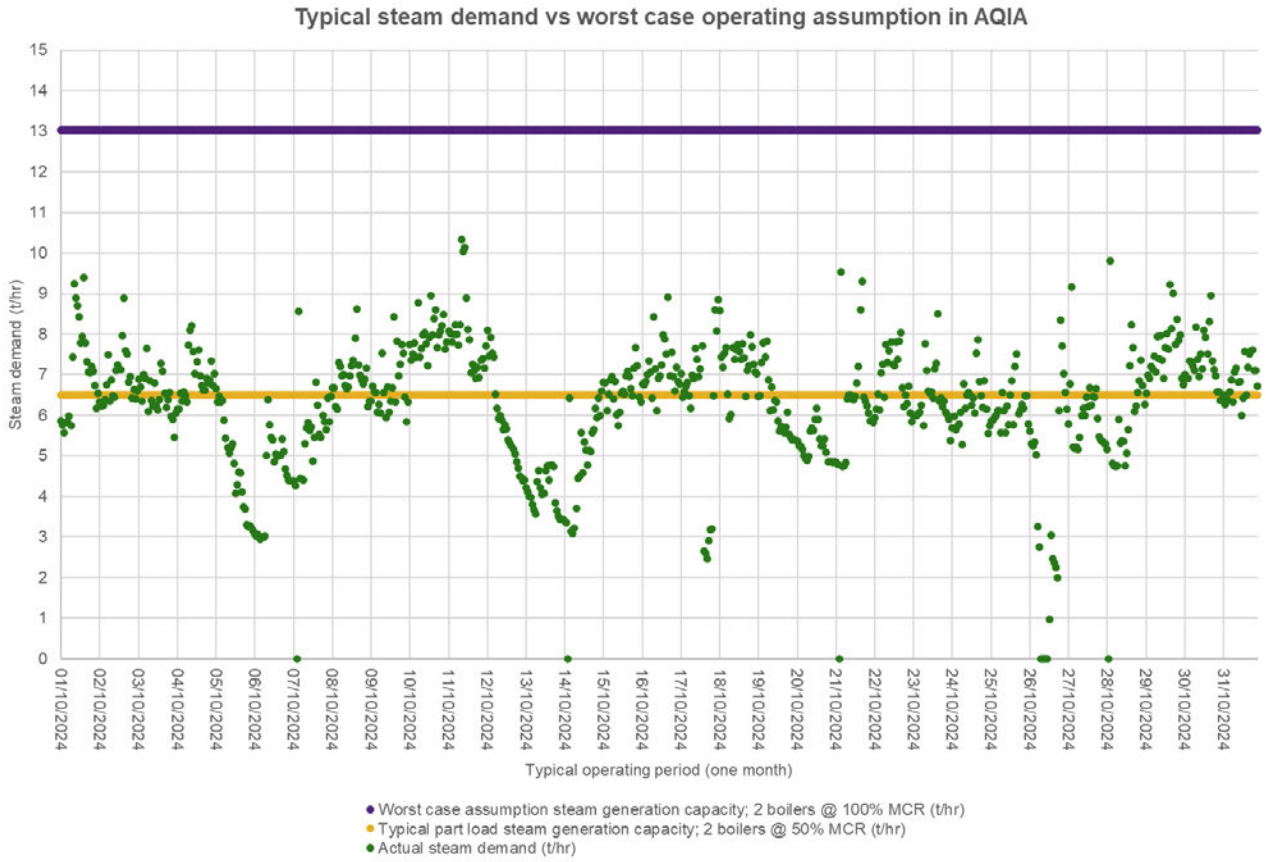
3.3 Operating Load of Current Combustion Plant

As a worst case, the boilers were assumed to operate at 100% load continuously for the full year (equivalent to approximately 13 tonnes/hour (t/hr) of steam production for the new boilers). This is a very substantial overestimate of the actual duty load expected (averaging at c. 6-7 t/hr steam demand). A comparison of steam capacity and typical site steam demand for a typical one-month operating period (from 2024 data) is shown in Figure 1 below. A second running scenario was therefore also assessed which is referred to in this AQIA as 'part load' running. As can be seen from Figure 1, the part load running case is approximately representative of a mean steam demand and is substantially less than the worst-case full load. For the current plant scenarios, each case is described below:

- **Worst case full load**. Two current boilers operating continuously at 100% full load for 8,760 hours per annum, generating some 13 t/hr of high-grade steam in total.
- **Part load**. Two current boilers operating at 50% part load in parallel for 8,424 hours per annum. This equates to 14 days downtime per annum for each plant, for site and unit maintenance. This scenario would generate 6.5 t/hr of high-grade steam in total. The load case of two boilers operating at 50% load is considered analogous of an alternative conservative part load case of one new boiler operating at 100% load.

[2] AQMAU – Air Quality Monitoring and Assessment Unit
[3] Held 01/08/2024

Figure 1 Typical steam demand vs worst case operating assumption in AQIA



3.4 Key Emissions and Input Data

3.4.1 Emissions Data – Current Sources

The NOx and CO emission concentrations for the assessment of the current boilers were provided by the supplier of the equipment. For natural gas firing, the NOx emission concentration of 100mg/Nm^3 was adopted for the new boilers, which is equivalent to the relevant MCPD ELVs. All emission data used were corrected to MCPD reference conditions of 3% oxygen (O_2) for boilers.

The MCPD does not provide ELVs for CO for boilers and the emission concentration of 20mg/Nm^3 was adopted for natural gas firing for the boilers based on the value provided by the equipment supplier.

The temperature of the boiler exhaust gases and exhaust gas flow rates were provided by the equipment supplier; supplemented by stoichiometric and exhaust gas flow calculations where necessary.

The emissions inventory of releases to air from the proposed boilers is provided in Annex A.

3.4.2 Emissions Data – Historical Sources

The NOx emission concentrations for the assessment of the historical boilers were based on the currently permitted emission limit value of 200 mg/Nm^3. Other parameters such as the concentration of oxygen (O_2) and stack gas temperature were obtained from monitoring reports (Mondelez, 2024). Data gaps regarding volumetric flowrate of the stack gases were filled using stoichiometric calculations based on the combustion of natural gas at the maximum thermal input rate of each of the historical boilers. These were cross-checked for consistency against available data from other recent Mondelez AQIAs carried out on other sites with similar boiler equipment.

The emissions inventory of releases to air from the historical boilers is provided in Annex A.

3.4.3 Human Receptors

For this assessment, 32 of the closest sensitive human receptors near the site were identified for modelling purposes. The locations of these receptors are presented in Figure A and details are provided in Annex A.

3.4.4 Ecological Receptors

In line with the Environment Agency risk assessment guidance (Environment Agency, 2025) it is necessary to include protected conservation areas within the assessment if they are within the following distances from the site:

- European sites (i.e. Special Area of Conservations (SACs), Special Protection Areas (SPAs) and Ramsar sites) within 10 km; and
- Sites of Special Scientific Interest (SSSIs) and local nature sites (ancient woods, local wildlife sites and national and local nature reserves) within 2 km.

There was one SAC/SPA within 10km of the stack locations:

- South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA (which share the same boundary at relevant locations within 10km of the stack locations).

There were three SSSIs within 2km (all with a geological rather than ecological designation). These are listed below:

- Neepsend Railway Cutting;
- Neepsend Brickworks; and
- Wadsley Fossil Forest.

There was also several ‘local nature sites’, including ancient woodland sites and locally designated sites (termed Local Wildlife Sites (LWSs)) within 2km of the boiler stack locations. There are also two Local Nature Reserves (LNRs) within 2km.

Further details of the above ecological receptors are provided in Annex A. The assessed European sites are shown in Figure B, local sensitive ecological receptors are shown in Figure C.

3.5 Baseline Conditions

3.5.1 Background concentrations

A review of baseline air quality was carried out prior to undertaking the air quality assessment. This was carried out to determine the availability of baseline air quality data recorded in the vicinity in the site and also if data from other regional or national sources such as the UK Air Information Resource (UK-AIR) (Defra, 2024) website could be used to represent background concentrations of NO_2, NOx, and CO in the vicinity of the site and at the human and ecological receptor locations.

The Mondelez Sheffield site is situated within the administrative area of Sheffield City Council. Sheffield City Council has declared an Air Quality Management Area (AQMA) as part of the Local Air Quality Management (LAQM) process in relation to elevated annual mean and one-hour NO_2 concentrations, plus 24-hour PM_{10} concentrations. The area, designated ‘Sheffield Citywide AQMA’, covers the entire eastern part of the city containing the major built up areas, and was declared due to transport, industrial and domestic sources. The Mondelez Sheffield site is within the AQMA, and therefore will contribute to NO_2 within the AQMA, associated with NOx emissions from the boiler plant. Whilst the AQMA is primarily associated with traffic

emissions, (as described in detail in the Sheffield and Rotherham Clean Air Plan FBC report which also sets out the preferred options for reducing emissions from all types of road vehicles) (Sheffield City Council and Rotherham Metropolitan Borough Council, 2022)); this is still an important consideration discussed in respect of this AQIA.

Sheffield City Council carries out regular assessments and monitoring of air quality within its authority area. The most recent air quality annual status report (Sheffield City Council, 2025) was reviewed to determine whether any of the air quality monitoring would assist with identifying the existing concentrations of NO_2 in the vicinity of the Mondelez site. The closest and relevant monitoring locations for this assessment are provided in Table 2.

Table 2 Sheffield City Council Monitoring

Site	Monitoring type	Location type	X	Y	Distance from stacks (m)	Annual mean NO_2		
						2022	2023	2024
Longley Avenue West	Diffusion tube	Roadside	434720	390560	957	14.2	11.5	11.5
Fielding Road		Roadside	433346	390814	646	32.8	27.4	26.5
Winster Road		Roadside	433455	390473	358	51.0	38.2	35.0
Sheffield Devonshire Green	AURN	Urban Centre	434816	386990	3,506	17.6	16.1	16.0
Sheffield Barnsley Road		Urban traffic	436276	389930	2,522	34.3	33.6	31.0

The Winster Road monitoring location is located close to the site and is adjacent to the A61. This monitoring location is considered to be a representative of background concentrations at assessment locations R6, R7, R9 and R10, which are also adjacent to the A61. Therefore, for the assessment, the 2025 annual mean NO_2 concentration of 35 µg/m^3 from Winster Road was used to represent the background concentration at receptors R6, R7, R9 and R10. The background concentrations at all the other assessment locations were based on the 1km x 1km Defra background map datasets (see below).

Information on background air quality in the vicinity of the site was obtained from Defra background map datasets (Defra, 2024). The 2021-based background maps by Defra are estimates based upon the principal local and regional sources of emissions and ambient monitoring data. These background pollutant concentrations for NO_2, and NOx are presented in Table 3 for the 1km x 1km grid squares which encompass the Sheffield site and surrounding receptors. The projected values for the year 2025 were used for the assessment. For CO, the 2001-based background maps were used. The CO concentration was factored to 2025 using the Defra year adjustment factors.

As it is necessary to assess the potential impact of emissions from the proposed boilers on the assessed protected conservation areas up to 10km from the site, the background concentrations of NOx were identified at each ecological receptor using the Defra background map datasets (Defra, 2024). The specific values applied to each ecological receptor are displayed in the results tables (Annex C). The range of annual mean NOx concentrations is provided in Table 3.

Table 3 Background concentrations from the Defra background maps

Pollutant	Annual mean concentration (µg/m^3)	Description
NO_2	10.6 – 12.1	Defra background map values for the 1 km x 1 km grid squares representing human receptor locations, 2025 map concentrations.
NOx	6.0 – 18.3	Defra 1 km x 1 km background map values for the grid squares corresponding to all ecological receptor locations, 2025 map concentrations.
CO	187.9 – 207.5	Defra background map values for the 1 km x 1 km grid squares representing all human receptor locations, 2001 map concentrations adjusted to 2025 concentration.

3.5.2 Nitrogen and acid deposition rates

Existing nitrogen and acid deposition rates were obtained from the APIS website operated by CEH (CEH, 2025). These were selected for the SPA/SAC and local nature sites based on the highest rates obtained for any of the receptor locations representing each designated site, representing a conservative approach. No information is presented for the identified SSSI sites, as these have a geological designation only. Rates for short or tall vegetation were obtained based on the vegetation types present at each site. The existing deposition rates for the SPA/SAC are set out in Table 4, with the deposition rates for all other sites, including ancient woodlands and local nature sites provided in Table 25, Table 26, Table 27 and Table 28.

Table 4 Existing nitrogen and acid deposition rates at assessed SPA/SAC site

Receptor refs	Protected conservation area	Vegetation type	Existing nitrogen deposition (kgN/ha/year)	Existing acid deposition (keq/ha/year)	
				Nitrogen (N)	Sulphur (S)
H4[1]	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	18.7	1.33	0.27

Note 1: Maximum existing deposition rate for the SPA/SAC presented.

3.5.3 Committed developments

In order to determine whether there were any committed developments in the vicinity of the Mondelez Sheffield site, which would warrant consideration within the AQIA, reviews were undertaken of:

- The Environment Agency's consultation finder[4], no relevant 'forthcoming', 'open' or 'closed' environmental permit, 'installation' or waste consultations in respect of new sites or variations were found.
- Sheffield City Council's online listing of current Part A2 and Part B applications 'under consideration'[5]. None is considered relevant.

[4] https://consult.environment-agency.gov.uk/consultation_finder *(accessed 17/09/2025)*
[5] https://www.sheffield.gov.uk/business/licences-permits-registrations/environmental-permits-public-register *(accessed 17/09/2025)*

- Sheffield City Council's online listing of planning applications[6]. A relevant search area was identified, extending a minimum of 1km in all directions from the site boiler house. Search returns were reviewed to identify those considered relevant, based on combustion, power, biomass and industrial activities going back a period of 12 months years. No proposed, relevant projects were identified.

On this basis the potential for cumulative impacts with the Sheffield site and any committed developments is considered to be negligible.

3.6 Air Quality Standards and Guidelines

The relevant air quality standards and guidelines are those set out in the Environment Agency risk assessment guidance (Environment Agency, 2025). These include Air Quality Objectives (AQOs) for NO_2 and NOx, and CO, the majority of which are also limit values set out in the EU Ambient Air Directive (AAD) (transposed into UK legislation by The Air Quality Standards Regulations 2010). The Environment Agency risk assessment guidance also includes a non-statutory Environmental Assessment Level (EAL) for 24-hour mean NOx concentrations. For the purposes of reporting, the AQOs and EALs have been collectively termed as EQSs. The relevant EQSs are set out in Table 5.

Table 5 Ambient Air Directive Limit Values and Environment Assessment Levels

Pollutant	Standard	EQS ($\mu g/m^3$)	Concentration measured as
Nitrogen dioxide (human receptors)	EU AAD Limit Value and AQO	40	Annual mean
	EU AAD Limit Value and AQO	200	1-hour mean, not to be exceeded more than 18 times a year (99.79th percentile (%ile))
Oxides of nitrogen (ecological receptors)	EU AAD Limit Value and AQO	30	Annual mean
	EAL	75 #	Maximum 24-hour mean
Carbon monoxide (human receptors)	EU AAD Limit Value and AQO	10,000	Maximum 8-hour running mean
	EAL	30,000	Maximum 1-hour mean

Note #. IAQM guidance notes that this value is conservative for a UK context with low ambient SO_2 levels and considers a value of 200 $\mu g/m^3$ as a more appropriate short term critical level for the protection of vegetation (IAQM, 2020, paragraph D4.9). The stated 75 value has been used in the assessment (Environment Agency, 2025) as a worst case.

For the assessment of long-term average concentrations (i.e. the annual mean concentrations) at human receptors, impacts are described using the following criteria.

- If the PC is less than 1% of the long-term EQS the contribution can be considered as 'insignificant'.
- Using professional judgement, it is considered that if the PC is greater than 1% of the EQS but the PEC is less than 70% of the long-term air EQS, this would normally be classed as 'not significant'. This is consistent with Air Emissions Risk Assessment for your Environmental Permit guidance (Environment Agency, 2025) and an approach commonly used by air quality professionals in assessing detailed modelling results.

[6] https://planningapps.sheffield.gov.uk/online-applications/ *(accessed 17/09/2025)*

- Where the PC is greater than 1% of the EQS and the PEC is greater than 70% of the EQS, further judgement is used to determine the overall significance of the effect using site specific circumstances (i.e. whether the effect would be 'not significant' or 'significant'), taking account of the following:
  - the scale of the changes in concentrations;
  - whether or not an exceedance of an EQS is predicted to arise in the study area where none existed before, or an exceedance area is substantially increased as a result of the development; and
  - uncertainty, including the influence and validity of any assumptions adopted in undertaking the assessment.

For the assessment of short-term average concentrations (e.g. the 1-hour mean NO_2 concentrations), impacts are described using the following criteria.

- If the PC is less than 10% of the short-term EQS, this would be classed as insignificant;
- If the PC is greater than 10% of the EQS but less than 20% of the headroom between the short-term background concentration and the EQS, this can also be described as not significant. This is based on professional judgement and adapted from the Environment Agency risk assessment guidance (Environment Agency, 2025) for identifying the need for more detailed modelling of emissions. It is considered that any PC meeting this criterion would clearly not lead to any exceedance of the EQS and thus would not lead to a significant effect;
- Where the PC is greater than 10% of the EQS and 20% of the headroom, professional judgement is used to determine the overall significance of the effect (i.e. whether the effect would be not significant or significant) in line with the approach specified above for long-term average concentrations.

Environment Agency guidance recommends that further action will not be required if proposed emissions comply with BAT Associated Emission Levels (AELs) and resulting PECs do not exceed the relevant EQS (Environment Agency, 2025). There are no relevant AELs for combustion plant in the Food, Drink and Milk Industries BAT conclusions (European Union, 2019); therefore, the MCPD ELVs can be viewed as the metric of compliance.

The significance of the predicted long-term (annual mean) concentrations or deposition at ecological receptors (specifically the SPA/SAC) were determined in line with, or adapted from, the risk assessment guidance (Environment Agency, 2025). This is summarised below.

- Where the PC is less than 1% of the relevant critical level or critical load, the emission is not likely to have a significant effect alone or in combination irrespective of the existing concentrations or deposition rates (Environment Agency, 2025; Environment Agency, 2024; AQTAG, 2015; IAQM, 2020).
- Where the PC is above 1%, further consideration of existing background concentrations or deposition rate is required, and where the total concentration or deposition is less than 70% of the critical level or critical load, calculated in combination with other known committed projects or developments, the emission is considered to be unlikely to have a significant effect (Environment Agency, 2025).
- Where the PC is above 1%, and the total concentration or deposition rate is greater than 70% of the critical level or critical load, either alone or in combination with other committed projects or developments, then this may indicate a significant effect and further consideration is likely to be required by a specialist ecologist.

For the 24-hour mean NOx concentrations at the SAC/SPA, where the PC is less than 10% of the critical level, it would be regarded as insignificant. A potentially significant effect would be identified where the short-term PC from the modelled sources would lead to the total concentration exceeding the critical level. In this case, further consideration would be required, for example, by an ecologist.

For other sites, such as the assessed locally designated nature sites, the Environment Agency risk assessment guidance (Environment Agency, 2025) states that:

"If your emissions meet both of the following criteria they're insignificant – you don't need to assess them any further:

- *the short-term PC is less than 100% of the short-term environmental standard*
- *the long-term PC is less than 100% of the long-term environmental standard".*

This approach was adopted for use in this assessment for the identification of potentially significant effects at locally designated sites and Ancient Woodland sites.

3.7 Modelling Accuracy and Uncertainties

The modelling study, like any comparable exercise, is subject to several inherent limitations, the potential effects of these were minimised by identifying and acknowledging the following considerations:

- The most recent version of the ADMS model (version 6.0.2) was used in this assessment. It is accepted as a suitable assessment tool by local authorities and environmental regulators such as the Environment Agency, and is considered particularly suited for the Sheffield installation, due to its reported better treatment of complex terrain (such as that seen in the vicinity of the Mondelez site) compared to other model options, (Carruthers, *et al*, 2011).
- The assessment is based on a number of assumptions relating to emissions parameters for plant which at the time of undertaking the modelling had not been commissioned. In order that uncertainties in this area were minimised, staged information requests and consultations were made with the suppliers. This data gathering included, where appropriate, use of appropriate legally binding or published ELVs for the plant type in question.
- At the time of carrying out the modelling some aspects of the plant layouts was still subject to detailed engineering design, however, use of the existing boiler house and stacks minimises the likelihood of material inaccuracy.
- The digital terrain data used in the assessment (the OS Landform Panorama dataset) is indicative of the local topography and although is relatively detailed (i.e. it clearly captures the increasing height of land rising to the east of the River Don, which is particularly characteristic of the installation's location) it does not include small-scale features, such as low-lying vegetation or hedgerows.
- The dispersion model uses five years of recent sequential NWP meteorological data for the site locations. Although this is considered to be a robust approach, it cannot account for infrequent abnormal or highly localised conditions. However, the worst case hourly periods in any of the five years modelled were used to inform assessments against short terms EQSs and the worst year of the five years modelled was used to inform assessments against long terms EQSs.
- A number of significant worst case assumptions have been made to take account of likely combustion plant operations, including full load (100% Maximum Continuous Rating (MCR)) running at historical / current plant emission limit values (the latter consistent with MCPD new plant ELVs where applicable) for 8,760 hours per annum. This equates to a steam generating capacity of 13 t/hr, against a site average steam demand of 6-7 t/hr. A part load scenario is also assessed assuming a steam demand equivalent to the site average.
- Published background air quality data (Defra, 2024) and Sheffield City Council monitoring data (Sheffield City Council, 2025) were used to represent background concentrations, which take account of other existing permitted and local emissions sources (e.g. roads) in the vicinity (see Section 3.5). This also takes account of emissions from the historical permitted plant at the Mondelez installation, which has been operating for many years; this in unavoidable.
- Emissions from road traffic in the vicinity of the site have been considered by using Sheffield City Council roadside monitoring locations as representative background concentrations for assessment locations adjacent to the A61 (see Section 3.5).

- There is a footpath which runs along the bank of the River Don through the centre of this site. To avoid misrepresentation of this linear feature (a potential short term human exposure location), multiple (20) assessment locations were defined within the model to represent this receptor.
- The screening of significance, in terms of potential effects, was directed where possible by regulatory guidance (Environment Agency 2025, Environment Agency 2024). Other sources of published guidance were consulted as appropriate and have been referenced through this report. Inevitably, due to the wide band between 'insignificant' and 'unacceptable' impacts when following published screening methods, professional judgement has been applied. An appropriately qualified and experienced air quality professional undertook the assessment.

4 Dispersion Modelling Results

This chapter of the report presents the results of the detailed modelling of emissions to air from the Historical and Current boiler scenarios.

4.1 Operating Load of Combustion Plant and Presentation of Results

As discussed in Section 3.3, two running scenarios were assessed for the current (newly installed) boiler scenario, worst case full load and part load running. The **Current** scenario was modelled at the worst-case full load, but in order to capture a more appropriate, but still conservative assessment of potential effects, the same boiler and stack configurations were modelled applying more typical part load running conditions; this is described as **Current PL** (where 'PL' is 'part load'). The remainder of this chapter presents results for the **Historical** scenario (legacy boilers) (for which table cells are shaded light grey), Current boiler scenario (with unshaded cells) and Current PL scenario (where table cells are shaded light green).

4.2 Human Receptor Results

The results presented below are the maximum modelled concentrations predicted at any of the assessed sensitive human receptor locations for the five years of meteorological data used in the study. The results of the dispersion modelling for the Historical, Current and Current PL are set out in Table 6. The tables below present the following information:

- EQS (i.e. the relevant air quality standard);
- Estimated annual mean background concentration (see Section 3.4);
- PC, the maximum modelled concentrations due to the emissions from the assessed combustion plant;
- PEC, the maximum modelled concentration due to process emissions combined with estimated baseline concentrations; and
- PC and PEC as a percentage of the EQS.

The full results at assessed human receptor locations are presented in Annex C.

The results in Table 6 (overleaf) for indicate that the predicted NO_2 concentrations at sensitive human receptors, do not exceed any relevant long-term or short-term EQSs. The maximum PECs are well within the relevant EQSs. Maximum grid (any modelled location) is also presented for short term averaging periods.

Table 6 Detailed dispersion modelling results – maximum NO_2 and CO concentrations at assessed human receptors and 'maximum grid'

Pollutant	Location	EQS (µg/m³)		Background (µg/m³)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
		Averaging period	EQS					
Historical Scenario								
NO_2	Assessed receptors - max PC (R1)	Annual mean	40	10.6	3.52	8.81%	14.1	35.3%
	Assessed receptors - max PEC (R9)		40	35.0	0.893	2.23%	35.9	89.7%
	Assessed receptors - max PC (R8)	1-hour mean (99.79th %ile)	200	24.2	31.5	15.8%	55.7	27.8%
	Assessed receptors - max PEC (R9)		200	70.0	8.90	4.45%	78.9	39.5%
	Max off-site		200	24.2	44.3	22.1%	68.4	34.2%
CO	Assessed receptors (R8)	Maximum 8-hour running mean (100th %ile)	10,000	376	43.8	0.438%	420	4.20%
	Max off-site		10,000	376	53.1	0.531%	429	4.29%
	Assessed receptors (R13_6)	1-hour mean (100th %ile)	30,000	376	99.4	0.331%	475	1.58%
	Max off-site		30,000	376	100	0.334%	476	1.59%
Current Scenario								
NO_2	Assessed receptors - max PC (R1)	Annual mean	40	10.6	0.830	2.07%	11.4	28.6%
	Assessed receptors - max PEC (R9)		40	35.0	0.194	0.48%	35.2	88.0%
	Assessed receptors - max PC (R13_11)	1-hour mean (99.79th %ile)	200	24.2	7.24	3.62%	31.4	15.7%
	Assessed receptors - max PEC (R9)		200	70.0	2.03	1.01%	72.0	36.0%
	Max off-site		200	24.2	10.8	5.42%	35.0	17.5%
CO	Assessed receptors (R8)	Maximum 8-hour rolling mean	10,000	376	4.01	0.040%	380	3.80%
	Max off-site		10,000	376	5.20	0.052%	381	3.81%
	Assessed receptors (R13_6)	Maximum 1-hour mean	30,000	376	11.8	0.039%	388	1.29%
	Max off-site		30,000	376	11.9	0.040%	388	1.29%
Current PL Scenario								
NO_2	Assessed receptors - max PC (R1)	Annual mean	40	10.6	0.295	0.738%	10.9	27.2%
	Assessed receptors - max PEC (R9)		40	35.0	0.064	0.161%	35.1	87.7%
	Assessed receptors - max PC (R13_6)	1-hour mean (99.79th %ile)	200	24.2	3.40	1.70%	27.6	13.8%
	Assessed receptors - max PEC (R10)		200	70.0	0.702	0.351%	70.7	35.4%
	Max off-site		200	24.2	4.01	2.01%	28.2	14.1%
CO	Assessed receptors (R8)	Maximum 8-hour rolling mean	10,000	376	1.13	0.011%	377	3.77%
	Max off-site		10,000	376	1.58	0.016%	377	3.77%
	Assessed receptors (R13_7)	Maximum 1-hour mean	30,000	376	4.61	0.015%	380	1.27%
	Max off-site		30,000	376	4.16	0.014%	380	1.27%

The maximum PC for annual mean NO_2 for the Current Scenario is 0.83 µg/m^3 at receptor R1, which is equivalent to 2.1% of the relevant EQS. For the Current PL Scenario, this falls to 0.30 µg/m^3, which is equivalent to 0.7% of the EQS. The Current Scenario represents a material improvement over the Historical Scenario (with a PC of 3.52 µg/m^3 and PC / EQS of 8.8%). For the Current Scenario, the PC is slightly over the 1% significance threshold in terms of PC (at 2.1%), however, the PEC at this receptor location is less than 70% of the EQS (at 28.6%) and therefore the result is considered 'not significant'. Although a matter of professional judgement, this approach is in line with Environment Agency guidance. For the Current PL Scenario, the maximum PC for annual mean NO_2 is below the 1% significance threshold; any effects can therefore be described as 'insignificant'.

Given the potential for elevated background pollutant levels in certain areas of the Sheffield Citywide AQMA, further consideration has been given to the modelled results at receptor R9; the location where the highest PEC is predicted. At this receptor, the PC for annual mean NO_2 for the Current Scenario is 0.19 µg/m^3, which is equivalent to 0.48% of the relevant EQS. For the Current PL Scenario, this falls to 0.06 µg/m^3, which is equivalent to 0.16% of the EQS. Whilst the PEC / EQS is elevated in these locations at 88.0% and 87.7% respectively, the PC is below the 1% significance threshold and thus can be considered 'insignificant', the calculated PEC being driven overwhelmingly by the elevated background level. Of note, for the Historical Scenario the PC at receptor R9 is 2.2% of the EQS, and thus, for the Current Scenario falls to a level that can now be considered 'insignificant' following decommissioning of the historical boiler plant and implementation of the replacement boiler plant. It is considered that no further assessment work is required for annual mean NO_2 concentrations.

For the assessment of 1-hour mean (99.79th percentile) NO_2 concentrations at sensitive human receptor locations, the maximum PC for both the Current (7.2 µg/m^3) and the Current PL Scenarios (3.4 µg/m^3) is less than 10% of the short-term EQS and, therefore, an 'insignificant' impact. Again, for the Historical Scenario, the PC at receptor R9 is 15.8% of EQS, and thus it falls to a level that can now be considered 'insignificant' with implementation of the replacement boiler plant.

Although deemed not significant, as these criteria are material considerations and priorities for control for gas fired boiler plant, contour plots have been produced for annual mean NO_2 concentrations for the Historical and Current scenarios as Figure D and Figure E, and for 99.79th percentile NO_2 concentrations for the Historical and Current scenarios as Figure F and Figure G.

For CO, the PC for the Current and Current PL Scenarios is less than 10% of the short-term EQSs and therefore can be deemed as 'insignificant' with no significant effects arising.

Although the Historical Scenario was not predicted to lead to any exceedances of EQSs and would result in effects that could be considered 'insignificant' or 'not significant' for all pollutants assessed and all averaging periods; the Current Scenario clearly show benefits in terms of potential air quality effects due to large reductions in predicted PCs. This is most notable where the new replacement boiler plant is contributing to reducing annual mean NO_2 concentrations at roadside locations within the Sheffield Citywide AQMA which have historically experienced elevated concentrations (e.g. at receptor R9), thus supporting wider efforts to reduce NO_2 concentrations within the AQMA. The reductions in predicted PCs are illustrated in Table 7.

Table 7 Maximum NO_2 and CO concentrations at assessed human receptors illustrating percentage reduction in PC

Pollutant	Location	EQS (µg/m3)		Historical		Current		% reduction in PC
		Averaging period	EQS	PC (µg/m^3)	PC/ EQS (%)	PC (µg/m^3)	PC/ EQS (%)	
Nitrogen Dioxide (NO_2)	Assessed receptors - max PC	Annual mean	40	3.52	8.81%	0.830	2.07%	76.5%
	Assessed receptors - max PEC		40	0.893	2.23%	0.194	0.48%	78.3%
	Assessed receptors - max PC	1-hour mean (99.79th %ile)	200	31.5	15.8%	7.24	3.62%	77.0%
	Assessed receptors - max PEC		200	8.90	4.43%	2.03	1.01%	77.2%
	Max off-site		200	44.3	22.1%	10.8	5.42%	75.5%
Carbon monoxide (CO)	Assessed receptors	Maximum 8-hour rolling mean	10,000	43.8	0.438%	4.01	0.040%	90.8%
	Max off-site		10,000	53.1	0.531%	5.20	0.052%	90.2%
	Assessed receptors	Maximum 1-hour mean	30,000	99.4	0.331%	11.8	0.039%	88.1%
	Max off-site		30,000	100.3	0.334%	11.9	0.040%	88.1%

4.3 Ecological Receptor Results

The results presented in this section are a summary of the predicted concentrations and nitrogen and acid deposition at all of the ecological receptors identified within the study area. The full results at assessed ecological receptor locations are presented in Annex B.

4.3.1 Concentrations of NOx

The results presented below are the maximum modelled NOx concentrations predicted at any of the assessed ecological receptor locations for the five years of meteorological data used in the study. The results of the dispersion modelling for the Historical, Current and Current PL scenarios are set out in Table 8.

The results in Table 8 indicate that the predicted NOx PC concentrations at the SAC/SPA ecological receptors for the Historical, Current and Current PL scenarios are all within the relevant EQSs for short and long term averaging periods. For the Current and Current PL scenarios, the maximum PCs for the SAC/SPA are all below 1% of EQS criteria for long-term and below 10% of EQS criteria for short-term concentrations. The maximum PCs for any local nature sites are less than 100% of the EQSs and are considered 'insignificant' against screening criteria. It should be noted that SSSI sites (H1, H2 and H3) identified all have geological, not ecological designations and have therefore not been considered in this assessment.

Based on the above, the air quality effect at ecological receptors for the Current Scenario is considered to be insignificant; the PCs reduce further when considering the Current PL Scenario. Although the Historical Scenario was not predicted to lead to any exceedances of EQSs, and would result in effects that could be considered 'insignificant' or 'not significant' for all averaging periods; the Current scenario clearly show benefits in terms of potential air quality effects due to large reductions in predicted PCs.

Table 8 Detailed dispersion modelling results – NOx at ecological receptors

Pollutant	Averaging period	EQS (µg/m^3)	Background concentration (µg/m^3)	PC (µg/m^3)	PEC (µg/m^3)	PC / EQS (%)	PEC / EQS (%)	Assessment Location
Historical Scenario								
NOx	Annual mean	30	6.44	0.016	6.46	0.05%	21.5%	Maximum PC at SAC/SPA
			16.08	12.2	28.3	40.72%	94.3%	Maximum PC at any local nature sites (H22_35)
	Maximum 24-hour mean	75	12.88	0.38	13.3	0.51%	17.7%	Maximum PC at any SAC/SPA
			32.17	71.8	103.3	94.9%	137.8%	Maximum PC at any local nature sites (H22_34)
Current Scenario								
NOx	Annual mean	30	6.44	0.003	6.44	0.01%	21.5%	Maximum PC at any SAC/SPA
			16.08	3.09	19.2	10.29%	63.9%	Maximum PC at any local nature sites (H22_34)
	Maximum 24-hour mean	75	12.88	0.08	13.0	0.10%	17.3%	Maximum PC at any SAC/SPA
			32.17	16.73	48.9	22.31%	65.2%	Maximum PC at any local nature sites (H22_34)
Current PL Scenario								
NOx	Annual mean	30	6.44	0.001	6.44	0.003%	21.5%	Maximum PC at any SAC/SPA
			16.08	1.32	17.4	4.39%	58.0%	Maximum PC at any local nature sites (H22_34)
	Maximum 24-hour mean	75	13.63	0.02	13.7	0.03%	18.2%	Maximum PC at any SAC/SPA
			32.17	5.72	37.9	7.63%	50.5%	Maximum PC at any local nature sites (H22_39)

4.3.2 Nitrogen and Acid Deposition

The results presented below are the maximum modelled nitrogen and acid deposition rates (based on annual mean concentrations) predicted at any of the assessed ecological receptor locations for the five years of meteorological data used in the study. The predicted nitrogen deposition is set out in Table 9 and acid deposition rates are set out in Table 10, for the Historical, Current and Current PL scenarios. The predicted deposition rates have been compared to the relevant critical loads for each ecological receptor obtained from the APIS website (CEH, 2025). The three identified SSSI sites have a geological rather than ecological designation, and therefore no critical loads are provided on the APIS website.

A summary is also provided for the maximum deposition at any of the local nature sites based. It was considered appropriate to use the lowest appropriate critical loads for the range of local nature sites and locations to demonstrate that the PCs would be below 100% of the critical load for each local nature site and, therefore, representing an insignificant impact which does not need to be considered in any further detail.

The tables provide greater detail for the SAC/SPA receptor locations given the more stringent assessment criteria for these. When considering the PC, detailed air dispersion modelling guidance (Environment Agency, 2025) directs that where the PC is below 1% of the long-term environmental standard (in this case the CL) it can be considered insignificant. This can be applied for all SAC/SPA receptor locations in respect of both nitrogen and acid deposition where the PCs are all below 1% of CL; as such any effects from either Historical or Current boiler operating scenarios can be considered ‘insignificant’.

A summary of the Current PL scenario has not been presented in detail in this section on the basis that all potential effects can be screened out as insignificant when considering the Current (worst case) scenario, the Current PL case would show further improvement.

It is noted that results for nitrogen and acid deposition shown in the tables below indicate that whilst the PEC exceeds 100% of critical load for the identified SAC/SPA receptor locations, this is wholly baseline driven (i.e. outwith the impact from the Historical or Current Mondelez process operations).

Table 9 Detailed dispersion modelling results – nitrogen deposition at ecological receptors

Receptor		Vegetation type	Nitrogen deposition (kgN/ha/year)				PC as a % of CL	Total deposition rate as a % of CL
			Min. Critical load (CL)	Baseline (Existing deposition)	PC	Total		
Historical Scenario								
South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	H4_1	Short	5	18.7	0.001	18.70	0.02%	374%
	H4_2	Short	5	17.0	0.002	17.00	0.03%	340%
	H4_3	Short	5	17.5	0.002	17.50	0.03%	350%
	H4_4	Short	5	17.0	0.002	17.00	0.03%	340%
Maximum PC at any of the local nature sites (short (H22_35) and tall (H24_3) vegetation) (including Beeley Wood West and Row Wood Ancient Woodland sites)		Short	5	15.3	1.23	16.49	24.6%	330%
		Tall	10 [1]	26.5	0.795	27.25	7.95%	273%
Current Scenario								
South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	H4_1	Short	5	18.7	0.0002	18.70	0.00%	374%
	H4_2	Short	5	17.0	0.0003	17.00	0.01%	340%
	H4_3	Short	5	17.5	0.0003	17.50	0.01%	350%
	H4_4	Short	5	17.0	0.0003	17.00	0.01%	340%
Maximum PC at any of the local nature sites (short (H22_34) and tall (H24_3) vegetation) (including Beeley Wood West and Row Wood Ancient Woodland sites)		Short	5	15.3	0.311	15.57	6.22%	311%
		Tall	10 [1]	26.5	0.178	26.64	1.78%	266%

Note 1. CL has been derived based on nearest designated Ancient Woodland sites

Table 10 Detailed dispersion modelling results – acid deposition at ecological receptors

Receptor		Vegetation type	Critical loads (keq/ha/year)			Acid deposition (keq/ha/year)				
			CLMaxS	CLMinN	CLMaxN	Baseline (N+S) (existing deposition)	PC	Total (PEC)	PC as a % of CL	Total deposition rate (PEC) as a % of CL
Historical Scenario										
South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	H4_1	Short	0.210	0.178	0.428	1.60	0.0001	1.60	0.01%	374%
	H4_2	Short	0.210	0.178	0.428	1.45	0.0001	1.45	0.03%	339%
	H4_3	Short	0.210	0.178	0.428	1.49	0.0001	1.49	0.03%	348%
	H4_4	Short	0.210	0.178	0.428	1.45	0.0001	1.45	0.03%	339%
Maximum PC at any of the local nature sites (short (H22_35) and tall (H24_3) vegetation) (including Beeley Wood West and Row Wood Ancient Woodland sites)		Short	1.780	0.438	2.218	1.12	0.088	1.21	3.96%	54.5%
		Tall	3.244	0.357	3.601	1.97	0.057	2.03	1.57%	56.3%
Current Scenario										
South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	H4_1	Short	0.210	0.178	0.428	1.60	0.00001	1.60	0.003%	374%
	H4_2	Short	0.210	0.178	0.428	1.45	0.00002	1.45	0.005%	339%
	H4_3	Short	0.210	0.178	0.428	1.49	0.00002	1.49	0.005%	348%
	H4_4	Short	0.210	0.178	0.428	1.45	0.00002	1.45	0.005%	339%
Maximum PC at any of the local nature sites (short (H22_34) and tall (H24_3) vegetation) (including Beeley Wood West and Row Wood Ancient Woodland sites)		Short	1.780	0.438	2.218	1.12	0.022	1.14	1.00%	51.5%
		Tall	3.244	0.357	3.601	1.97	0.013	1.98	0.35%	55.1%

5 Discussion and Conclusions

This report has assessed the potential air quality impacts associated with the operation of the combustion plant at the Mondelez Sheffield site, required for the first time due to the site coming under EPR as a Part A(1) food and drink operation. The predicted impacts were assessed against the relevant air quality standards and guidelines for the protection of human health and for the protection of sensitive vegetation and ecosystems (referred to as EQSs).

There has recently been a major programme of investment in replacement boilers at the Mondelez Sheffield site. In order to demonstrate the benefits that the boiler upgrade programme has brought in terms of local air quality, the Environment Agency has requested that this AQIA considers the Historical and Current operating scenario. The Current boiler plant is already permitted as standalone MCP and is specified to meet the permitted ELVs.

Two variants of the Current Scenario have been assessed, a worst-case full load scenario (Current) and a more realistic part load scenario (Current PL). The Current Scenario represents a very considerable overestimate of the likely boiler duty, but as this provides maximum flexibility for operation Mondelez are seeking permitting on this basis. The Current PL Scenario is more representative of typical boiler duty and is included for context in the assessment and to more accurately reflect potential 'real world' effects.

The detailed assessment indicates that, even applying the worst-case full load Current Scenario, the predicted NO_2 and CO concentrations at sensitive human receptors do not exceed any relevant long-term or short-term EQSs. The impact can be described as 'insignificant' for both short-term average NO_2 concentrations and 'not significant' for long-term average NO_2. The impact can be described as 'insignificant' for both 1 hour and 8 hour CO averaging periods. Assessment of the more realistic Current PL Scenario indicates that for all determinands considered over all averaging periods, potential effects can be described as 'insignificant'.

The context of this assessment should be considered when reviewing these findings and predicted effects, i.e. that larger, lower efficiency, higher emission boilers have recently been replaced with smaller, higher efficiency, lower emission units (and that both the Historical and Current cases were/are currently permitted under the EPR as compliant MCP).

The site is within the Sheffield Citywide AQMA; whilst the assessment indicates that the Mondelez operations will not be a significant contributor to background levels of NO_2 (under either Historical or Current cases) nonetheless, the reduction in emissions associated with the boiler plant project supports the objectives of the AQMA in delivering improvements in local air quality.

For ecological receptors, the detailed assessment indicates that the predicted NOx concentrations, and nitrogen and acid deposition, at the South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA and locally designated nature sites and ancient woodland is 'insignificant' for Current operating cases.

Based on the above assessment, it is concluded that the Historical operating case was, and Current operating cases are acceptable from an air quality perspective. Notwithstanding the fact that the Historical scenario was permitted, compliant and considered acceptable from an air quality perspective, the Current and Current PL cases represent a beneficial reduction in predicted ground level concentrations and deposition rates of the assessed pollutants. This finding supports the conclusions made in the main application document that the current boiler plant represents Best Available Techniques (BAT).

6 References

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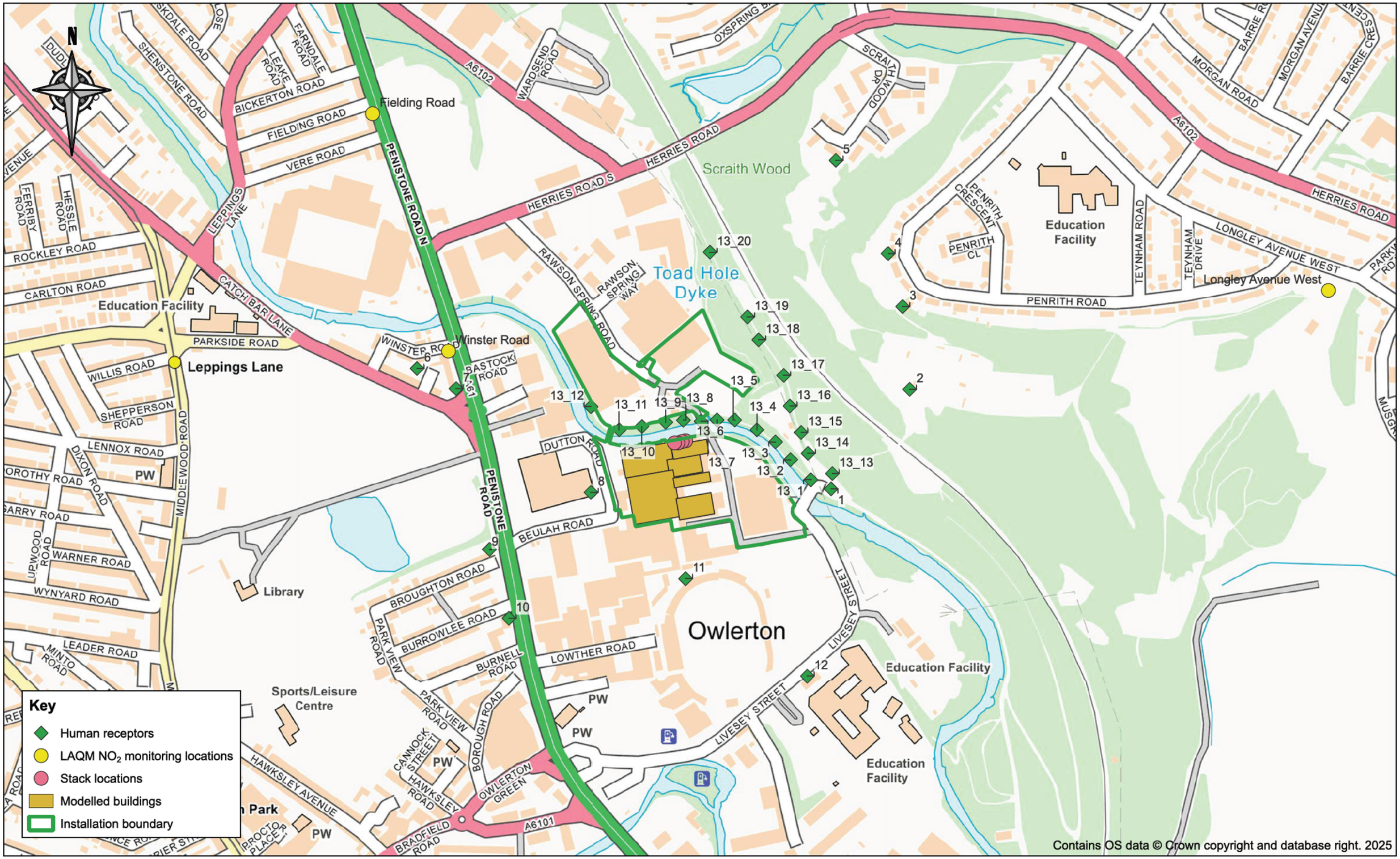
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Figures

Figure A Installation boundary, modelled stack locations, modelled buildings and human receptor locations



Scale

0 100 200 300 400 500 m

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Date	March 2026
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Mondelez UK Confectionery Production Ltd, Sheffield
Application for Environmental Permit EPR/ZP3722SD

Drawing title
Figure A Installation boundary, modelled stack locations, modelled buildings and human receptor locations

Figure B Sensitive ecological receptor locations (European sites)

N

South Pennine Moors

Peak District Moors (South Pennine Moors Phase 1)

H4_1

H3

Peak District Moors (South Pennine Moors Phase 1)

South Pennine Moors

H1

H2

Peak District Moors (South Pennine Moors Phase 1)

Peak District Moors (South Pennine Moors Phase 1)

H4_3

H4_2

South Pennine Moors

Peak District Moors (South Pennine Moors Phase 1)

Peak District Moors (South Pennine Moors Phase 1)

H4_4

South Pennine Moors

Peak District Moors (South Pennine Moors Phase 1)

Key

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPAs)
- Protected Conservation Areas
- Site boundary

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Scale

0 1,000 2,000 3,000 4,000 5,000 m

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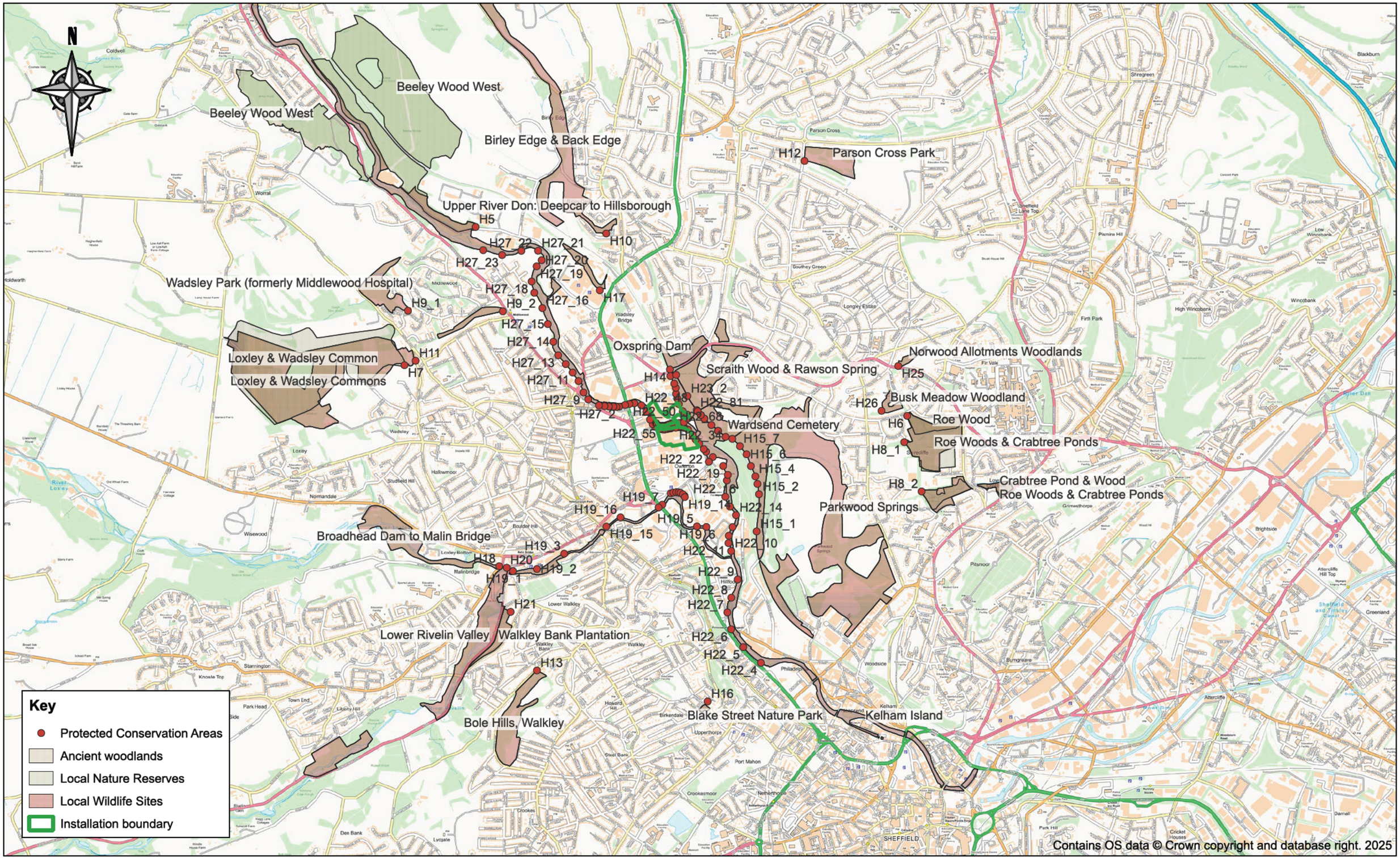
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Figure B: Sensitive ecological receptor locations (European sites)

Figure C Sensitive ecological receptor locations (local sites)



Scale

0 500 1,000 1,500 2,000 2,500 m

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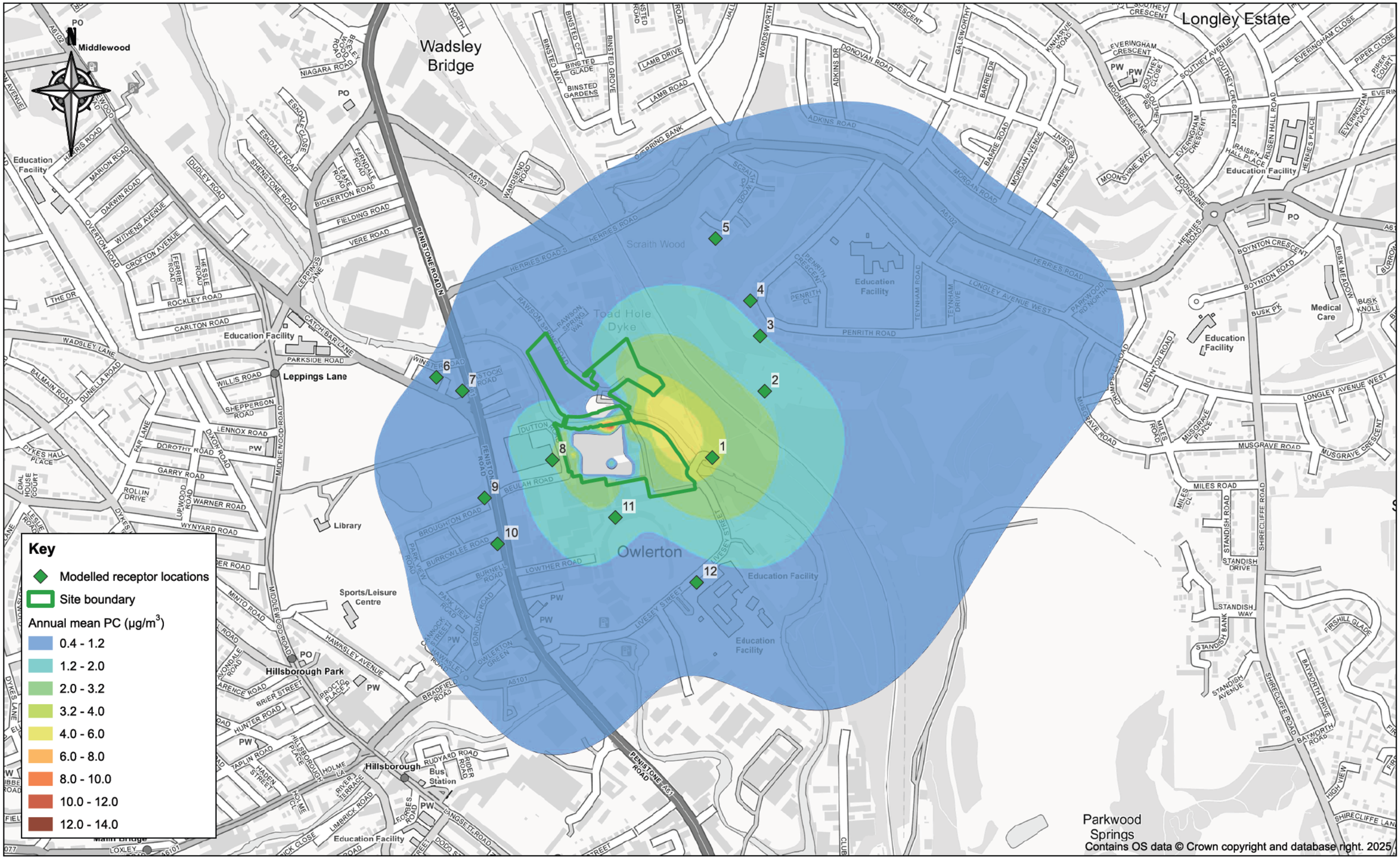
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Drawing title
Figure C: Sensitive ecological receptor locations (local sites)

Figure D Annual mean nitrogen dioxide concentrations - Historical



Scale

0 100 200 300 400 500 600 700 m

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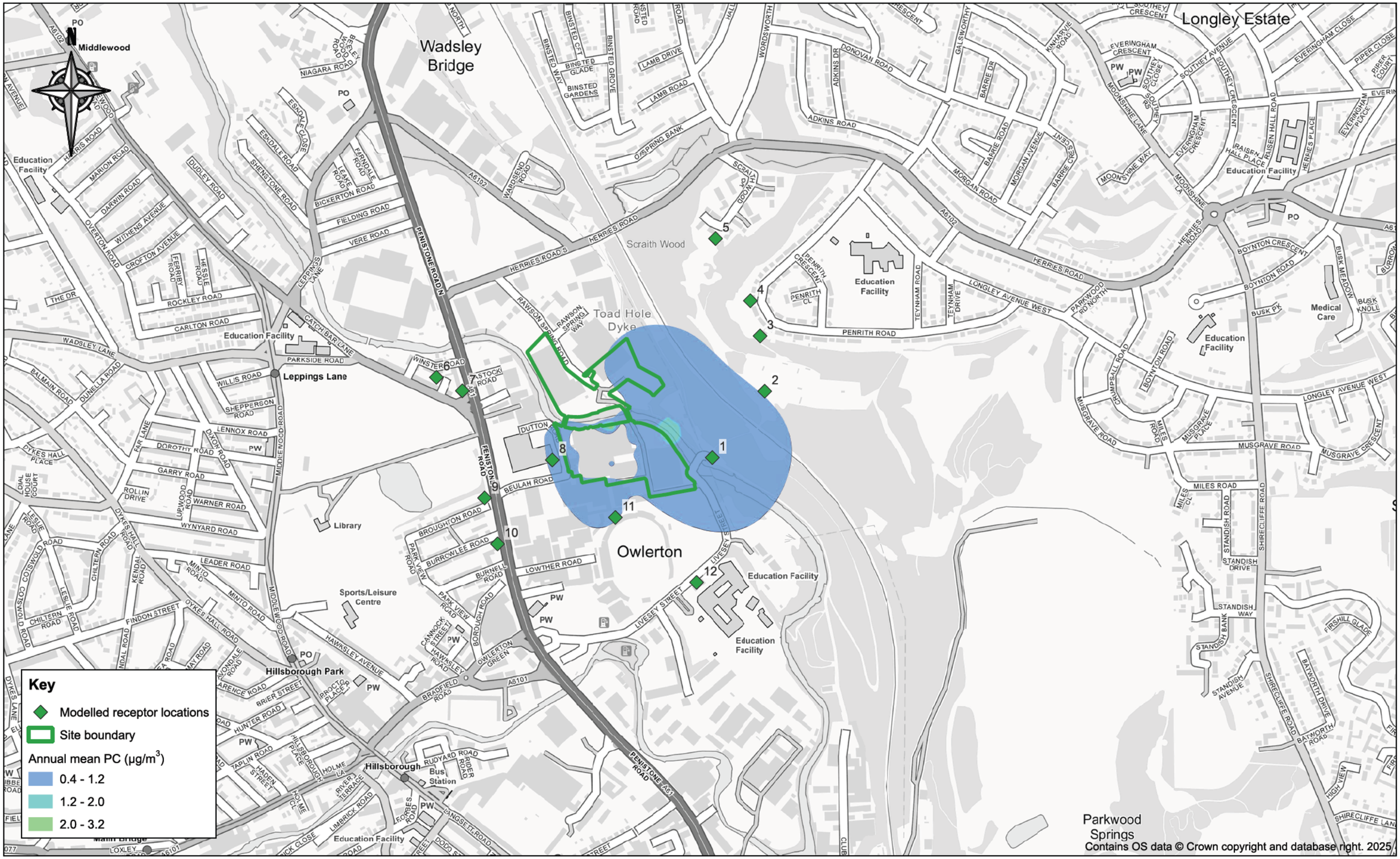
Project Environmental Solutions

Date	March 2026
Revision	FINAL Rev 0
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Drawing title
Figure D: Annual mean nitrogen dioxide concentrations - historical

Figure E Annual mean nitrogen dioxide concentrations - Current



Scale

0 100 200 300 400 500 600 700 m

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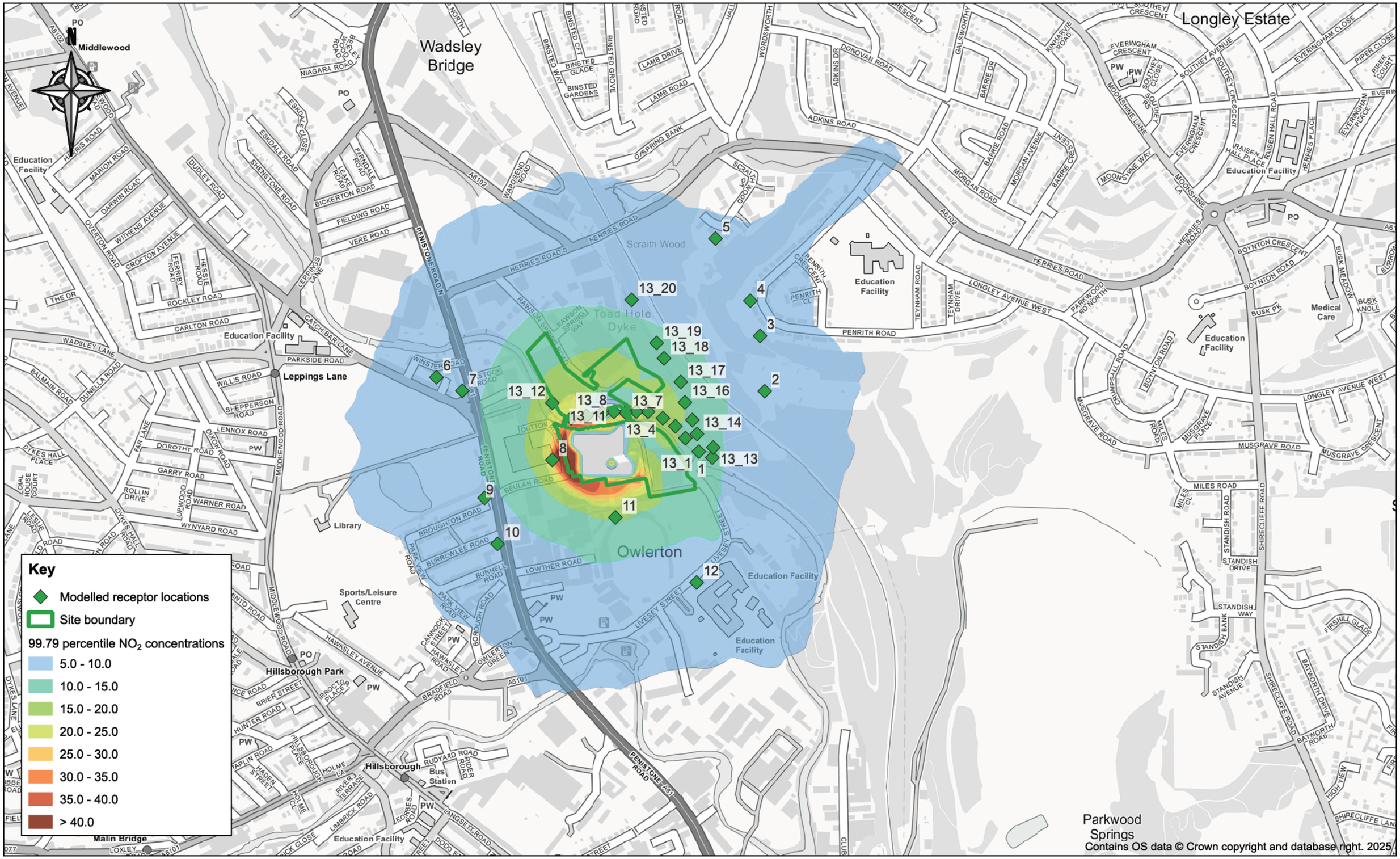
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Drawing title
Figure E: Annual mean nitrogen dioxide concentrations - current

Figure F 99.79 percentile nitrogen dioxide concentrations - Historical



Scale

0 100 200 300 400 500 600 700 m

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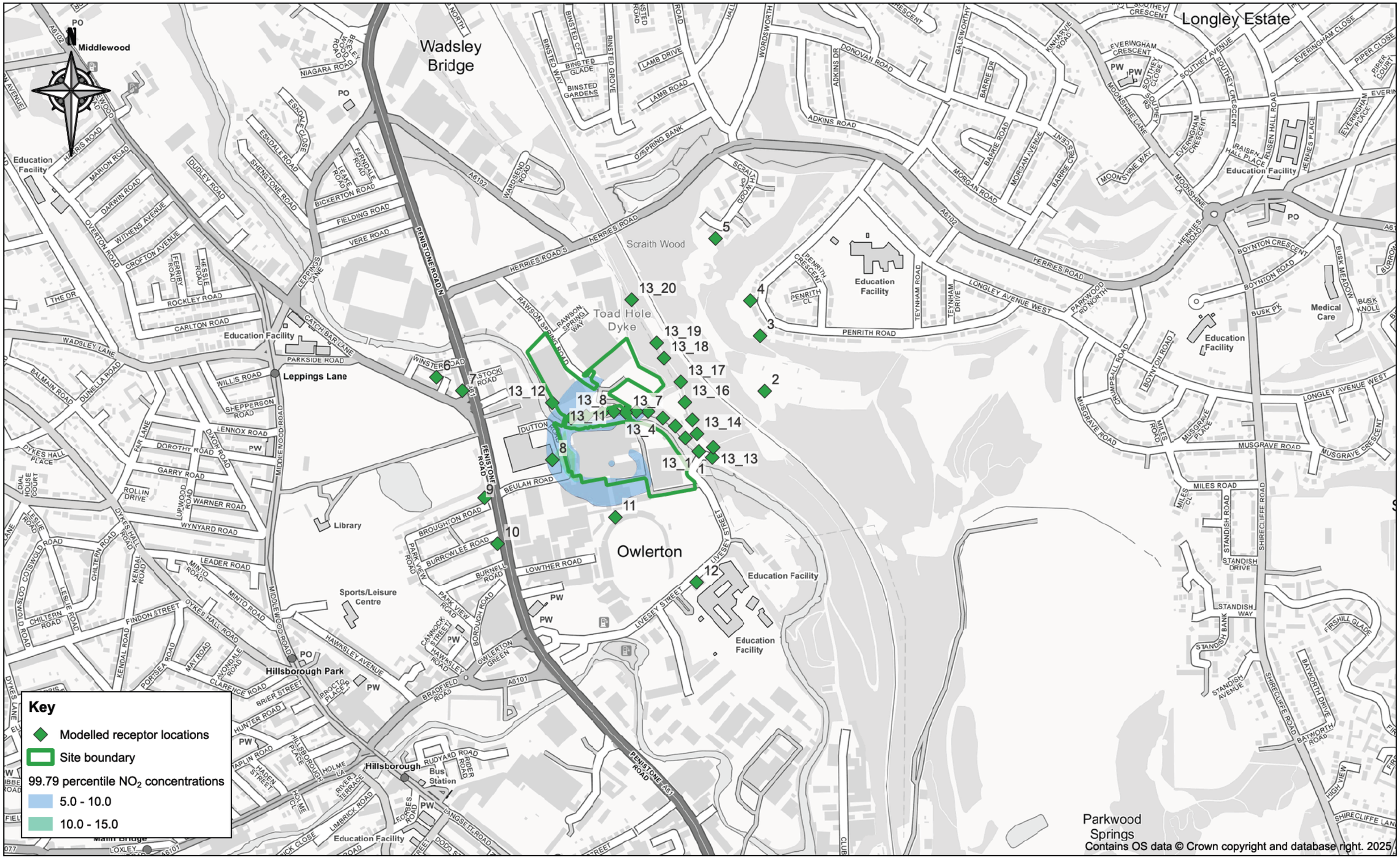
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Drawing title
Figure F: 99.79 percentile nitrogen dioxide concentrations - historical

Figure G 99.79 percentile nitrogen dioxide concentrations - Current



Scale

0 100 200 300 400 500 600 700 m

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Drawing title
Figure G: 99.79 percentile nitrogen dioxide concentrations - current

Annex A – Dispersion Model Inputs

Emission Parameters

The emissions parameters used to represent the Historical and Current boilers for the main assessment as reported in Chapter 4 of this report for boilers operating on natural gas are set out in Table 11, Table 12 and Table 13.

Table 11 Emissions parameters (Historical)

Parameter	Historical Boiler No.1	Historical Boiler No.2	Historical Boiler No.3	Historical Boiler No.4
Stack location	E 433796 N 390344	E 433791 N 390343	E 433785 N 390341	E 433780 N 390341
Stack height (m)	21.7	21.7	21.7	20.5
Stack internal diameter (m)	0.61	0.61	0.655	0.655
Flue gas temperature (°C)	183	193.6	170.9	235
Efflux velocity (m/s)	13.07	12.12	17.23	19.37
Volumetric flow rate (m^3/s) (actual)	3.819	3.541	5.807	6.527
Volumetric flow rate (normal)[1] (Nm^3/s)	1.519	1.519	2.995	2.995
NOx emission concentration (mg/Nm^3)[1]	200	200	200	200
NOx emission rate (g/s)	0.3038	0.3038	0.5990	0.5990
CO emission concentration (mg/Nm^3)[1]	100	100	100	100
CO emission rate (g/s)	0.1519	0.1519	0.2995	0.2995

Note 1: Normalised flows and concentrations presented at 273 K, 101.3 kPa, dry gas and oxygen content of 3 %.

Table 12 Emissions parameters (Current)

Parameter	Current Boiler No.1	Current Boiler No.2	Current Boiler No.3
Stack location	E 433796 N 390344	E 433791 N 390343	E 433785 N 390341
Stack height (m)	21.7	21.7	21.7
Stack internal diameter (m)	0.61	0.61	0.655
Flue gas temperature (°C)	130	130	130
Efflux velocity (m/s)	10.01	10.01	8.68
Volumetric flow rate (m^3/s) (actual)	2.926	2.926	2.926
Volumetric flow rate (normal)[1] (Nm^3/s)	1.685	1.685	1.685
NOx emission concentration (mg/Nm^3)[1]	100	100	100
NOx emission rate (g/s)	0.1685	0.1685	0.1685
CO emission concentration (mg/Nm^3)[1]	20	20	20
CO emission rate (g/s)	0.0337	0.0337	0.0337

Note 1: Normalised flows and concentrations presented at 273 K, 101.3 kPa, dry gas and oxygen content of 3% for boilers
Note 2: Flue gas temperature assume that the economiser is in operation

Table 13 Emissions parameters (Current PL)

Parameter	Current Boiler No.1	Current Boiler No.2	Current Boiler No.3
Stack location	E 433796 N 390344	E 433791 N 390343	E 433785 N 390341
Stack height (m)	21.7	21.7	21.7
Stack internal diameter (m)	0.61	0.61	0.655
Flue gas temperature (°C)	122	122	122
Efflux velocity (m/s)	4.83	4.83	4.19
Volumetric flow rate (m^3/s) (actual)	1.412	1.412	1.412
Volumetric flow rate (normal)[1] (Nm^3/s)	0.820	0.820	0.820
NOx emission concentration (mg/Nm^3)[1]	60	60	60
NOx emission rate (g/s)	0.0492	0.0492	0.0492
CO emission concentration (mg/Nm^3)[1]	10	10	10
CO emission rate (g/s)	0.0082	0.0082	0.0082

Note 1: Normalised flows and concentrations presented at 273 K, 101.3 kPa, dry gas and oxygen content of 3% for boilers
Note 2: Flue gas temperature assume that the economiser is in operation

Operational hours

Historical Scenario and Current Scenario. The historical and current combustion plant were assumed to operate at 100% load on a continuous basis throughout the year (8,760 hours) to capture the worst possible meteorological conditions. This represents an extremely conservative assumption.

Current PL Scenario. The current combustion plant was assumed to operate at 50% load (boilers) on a continuous basis throughout the year (8,760 hours) to capture the worst possible meteorological conditions for the purpose of short-term assessments. The process contributions for long term human and ecological receptors were factored down to an equivalent of 8,424 hours per unit, to reflect 14 days of downtime per annum.

Building and structural influences on dispersion

The main structures within the site which have been included in the model to reflect the site layout, are identified within Table 14.

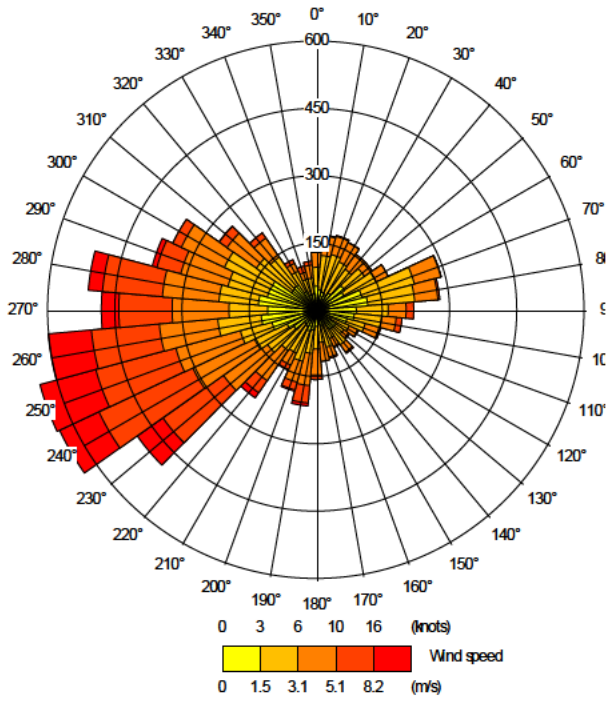
Table 14 Building parameters

Building	Modelled building shape	Length (m)	Width / diameter (m)	Height (m)	Angle of length to north °	Centre point co-ordinate	
						Easting	Northing
Building 1	Rectangle	72	40	12.2	80	433742	390316
Building 2	Rectangle	48	26	12.00	80	433795	390308
Boiler house	Rectangle	52	20	8.50	80	433802	390332
Building 3	Rectangle	68	68	8	80	433750	390263
Building 4	Rectangle	53	14	7.4	80	433805	390288
Building 5	Rectangle	51	31	16	80	433810	390250

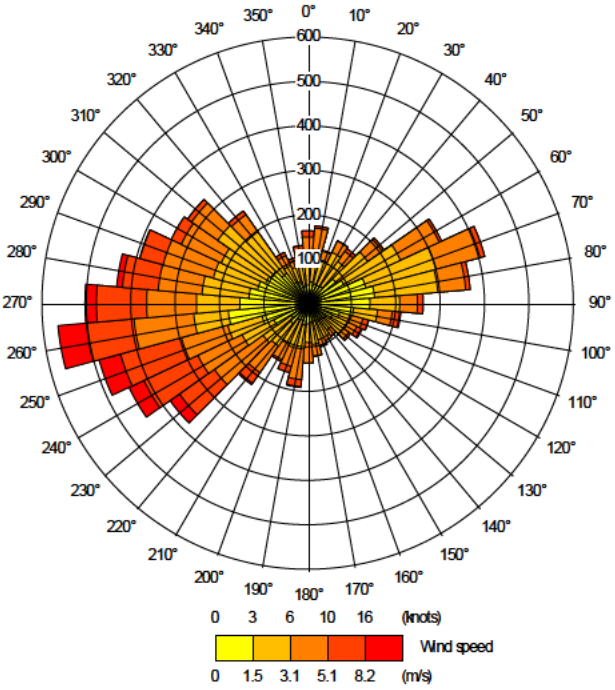
Meteorological Data

Five years of localised hourly sequential Numerical Weather Prediction (NWP) meteorological data, formatted for use in ADMS, was used for the assessment. The wind roses for each year of meteorological data utilised in the assessment are shown below.

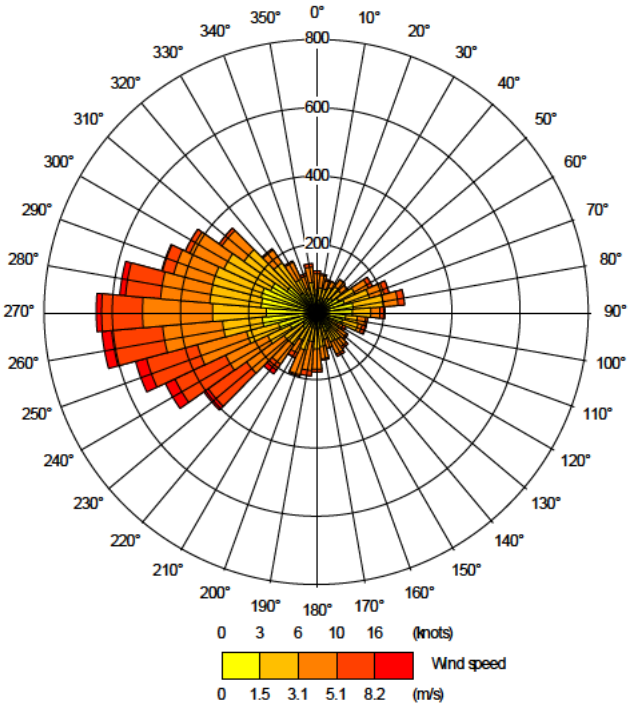
2019



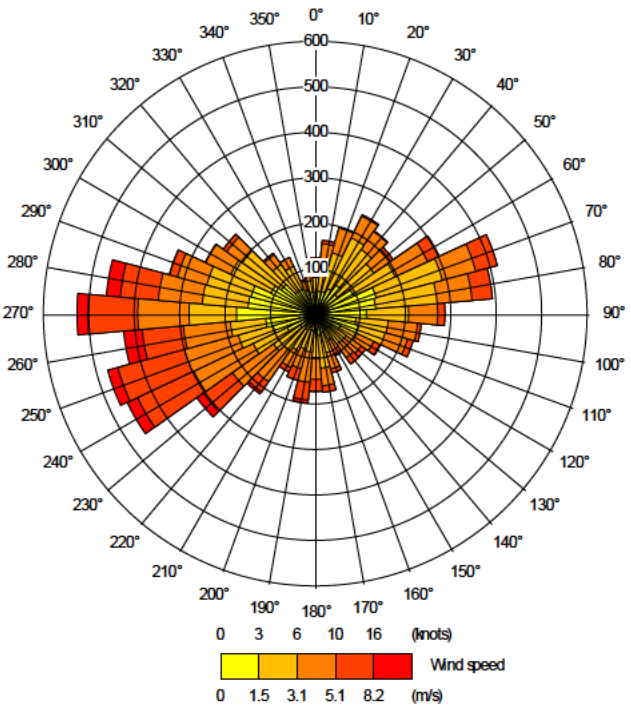
2020



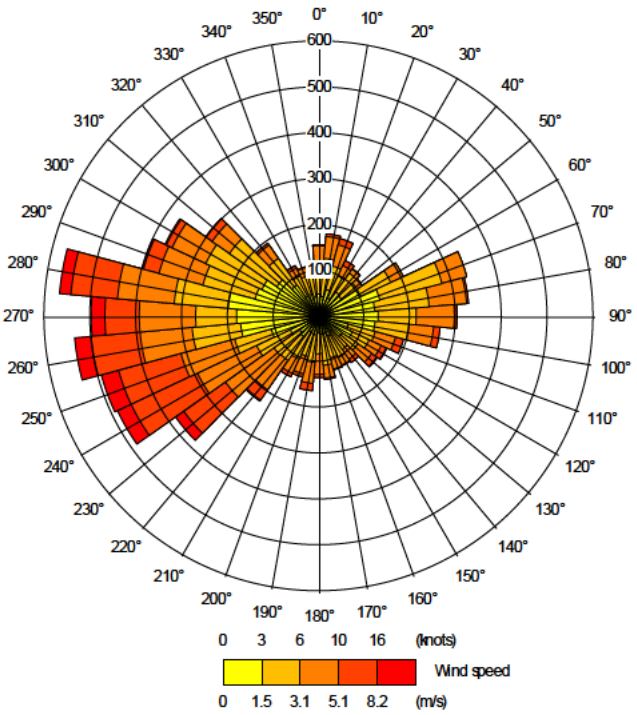
2021



2022



2023



Surface Roughness

The surface roughness is a length scale used to represent the turbulent effect of obstructions in the surrounding area. The surface roughness used in this study (and for the basis of the NWP data) was 0.8 m, which is appropriate for urban areas and 'cities' like Sheffield.

Minimum Monin-Obukhov Length, Surface Albedo and Priestley-Taylor Parameter

The following values were used for the Monin-Obukhov Length (30 m), Surface Albedo (0.23) and Priestley-Taylor Parameter (1).

Terrain

Guidance for the use of the ADMS model suggests that terrain is normally incorporated within a modelling study when the gradient exceeds 1:10. The gradients experienced in the vicinity of the Sheffield site exceeds the 1:10 threshold and terrain influences have therefore been included within the dispersion model. The terrain file was generated using the ADMS terrain converter and was based on the OS Landform Panorama dataset. The terrain file extended approximately 3 km in each cardinal direction from the stack location in order to encompass all modelled human and ecological receptors within 2km. A resolution of 64 x 64 was specified in the ADMS terrain converter when generating the terrain file.

Model Domain/Study Area

The modelled grid was specified as a 3.0 km x 3.0 km grid with calculation points every 20 m (i.e. 151 points along each grid axis) with a grid height of 1.5 m. This size of grid was selected to provide a good grid resolution and also encompass a sufficient area should dispersion contour plots be required.

As well as the modelled grid, the potential impact at 32 sensitive human receptors (e.g. exposure locations such as residential properties and public footpaths) within close proximity to the site were assessed. For those receptors representing relevant long-term exposure such as residential properties, both the long-term and short-term concentrations were assessed. The human receptor locations are shown in Figure A and

further details of the receptor locations are provided in Table 15. The ecological receptor locations are provided in Table 16 and shown on Figure B and Figure C. Note the ecological receptors H1, H2 and H3 have been designated for geological importance and the results for these have not been used within the assessment.

Table 15 Human receptor locations

Receptor	OS grid reference		Distance from boiler stack (km)	Direction from boiler stack	Description	Short Term Only?
	E	N				
1	434005	390275	0.23	ESE	Travellers site on Club Mill Road	No
2	434118	390418	0.34	ENE	Shirecliffe Allotments	No
3	434108	390537	0.38	ENE	Residential properties off Penrith Road	No
4	434087	390613	0.41	NE	Residential properties on Penrith Road	No
5	434012	390747	0.47	NNE	Residential properties on Scraith Wood Drive	No
6	433410	390448	0.40	WNW	Residential properties on Barker's Place	No
7	433466	390419	0.33	WNW	Residential properties on Parkside Road	No
8	433660	390270	0.15	WSW	Hillsborough Leisure Centre	No
9	433514	390188	0.32	WSW	Residential properties on Broughton Road	No
10	433542	390089	0.36	SW	Residential properties on Burrowlee Road	No
11	433796	390146	0.20	S	Owlerton Stadium	No
12	433971	390006	0.39	SSE	Hillsborough College and Nursery	No
13_1	433976	390288	0.20	ESE	Footpath	Yes
13_2	433947	390317	0.16	E	Footpath	Yes
13_3	433925	390342	0.14	E	Footpath	Yes
13_4	433898	390360	0.11	E	Footpath	Yes
13_5	433867	390374	0.09	ENE	Footpath	Yes
13_6	433841	390374	0.06	ENE	Footpath	Yes
13_7	433818	390372	0.04	NE	Footpath	Yes
13_8	433793	390374	0.03	N	Footpath	Yes
13_9	433767	390371	0.04	NW	Footpath	Yes
13_10	433733	390365	0.06	WNW	Footpath	Yes
13_11	433701	390360	0.09	WNW	Footpath	Yes
13_12	433660	390393	0.14	WNW	Footpath	Yes
13_13	434007	390297	0.23	ESE	Footpath	Yes
13_14	433972	390326	0.19	E	Footpath	Yes
13_15	433962	390356	0.18	E	Footpath	Yes
13_16	433946	390394	0.17	ENE	Footpath	Yes
13_17	433937	390438	0.18	ENE	Footpath	Yes
13_18	433901	390489	0.19	NE	Footpath	Yes
13_19	433885	390522	0.21	NNE	Footpath	Yes
13_20	433831	390615	0.28	N	Footpath	Yes

Table 16 Ecological receptor locations

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H1[1]	*434405*	*389863*	*0.78*	*SE*	*Neepsend Railway Cutting*	*SSSI (geological)*
H2[1]	*434906*	*389178*	*1.62*	*SE*	*Neepsend Brickworks*	*SSSI (geological)*
H3[1]	*431849*	*391236*	*2.14*	*WNW*	*Wadsley Fossil Forest*	*SSSI (geological)*
H4_1	424574	393401	9.71	*WNW*	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	SAC/SPA
H4_2	427175	386622	7.59	*WSW*		SAC/SPA
H4_3	426919	388325	7.16	*WSW*		SAC/SPA
H4_4	428744	383649	8.38	*SW*		SAC/SPA
H5	432366	391790	2.0	*NW*	Beeley Wood West	Ancient Woodland
H6	435468	390433	1.7	*E*	Roe Wood	Ancient Woodland
H7	431855	390797	2.0	*WNW*	Loxley & Wadsley Common	LNR
H8_1	435447	390244	1.7	*E*	Roe Woods & Crabtree Ponds	LNR/LWS
H8_2	435572	389890	1.8	*ESE*		LNR/LWS
H9_1	431880	391188	2.1	*WNW*	Wadsley Park (formerly Middlewood Hospital)	LWS
H9_2	432562	391184	1.5	*NW*		LWS
H10	433305	391743	1.48	*NNW*	Birley Edge & Back Edge	LWS
H11	431935	390829	1.92	*WNW*	Loxley & Wadsley Commons	LWS
H12	434730	392264	2.14	*NNE*	Parson Cross Park	LWS
H13	432807	388604	2.00	*SSW*	Bole Hills, Walkley	LWS
H14	433763	390766	0.43	*N*	Oxspring Dam	LWS
H15_1	434386	389603	0.95	*SE*	Parkwood Springs	LWS
H15_2	434403	389870	0.78	*SE*		LWS
H15_3	434392	389944	0.73	*ESE*		LWS
H15_4	434377	389998	0.68	*ESE*		LWS
H15_5	434345	390072	0.62	*ESE*		LWS
H15_6	434314	390157	0.56	*ESE*		LWS
H15_7	434266	390215	0.50	*ESE*		LWS
H15_8	434211	390268	0.43	*E*		LWS
H16	434034	388382	1.98	*S*	Blake Street Nature Park	LWS
H17	433259	391335	1.13	*NNW*	Bagshaw Wood, Wadsley Bridge	LWS
H18	432536	389353	1.60	*SW*	Broadhead Dam to Malin Bridge	LWS
H19_1	432635	389318	1.54	*SW*	Malin Bridge to River Don	LWS
H19_2	432807	389333	1.41	*SW*	Malin Bridge to River Don	LWS
H19_3	433003	389443	1.20	*SW*	Malin Bridge to River Don	LWS
H19_4	433868	389858	0.49	*S*	Malin Bridge to River Don	LWS

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H19_5	433957	389639	0.73	*SSE*	Malin Bridge to River Don	LWS
H19_6	434025	389635	0.75	*SSE*	Malin Bridge to River Don	LWS
H19_7	433708	389795	0.56	*S*	Malin Bridge to River Don	LWS
H19_8	433769	389877	0.47	*S*	Malin Bridge to River Don	LWS
H19_9	433787	389882	0.46	*S*	Malin Bridge to River Don	LWS
H19_10	433808	389885	0.46	*S*	Malin Bridge to River Don	LWS
H19_11	433825	389884	0.46	*S*	Malin Bridge to River Don	LWS
H19_12	433839	389880	0.47	*S*	Malin Bridge to River Don	LWS
H19_13	433856	389869	0.48	*S*	Malin Bridge to River Don	LWS
H19_14	433870	389850	0.50	*S*	Malin Bridge to River Don	LWS
H19_15	433306	389638	0.86	*SW*	Malin Bridge to River Don	LWS
H19_16	433408	389704	0.75	*SSW*	Malin Bridge to River Don	LWS
H19_17	433682	389775	0.58	*S*	Malin Bridge to River Don	LWS
H20	432590	389342	1.56	*SW*	Lower Rivelin Valley	LWS
H21	432618	389025	1.76	*SW*	Walkley Bank Plantation	LWS
H22_1	434010	390413	0.24	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_2	434061	390367	0.28	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_3	434109	390325	0.32	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_4	434417	388659	1.80	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_5	434290	388772	1.65	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_6	434203	388900	1.50	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_7	434176	389021	1.38	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_8	434204	389127	1.29	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_9	434250	389258	1.18	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_10	434203	389462	0.98	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_11	434184	389519	0.92	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_12	434186	389572	0.87	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_13	434213	389634	0.83	*SSE*	Middle River Don: Hillsborough to City Centre	LWS
H22_14	434238	389720	0.77	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_15	434195	389781	0.70	*SE*	Middle River Don: Hillsborough to City Centre	LWS

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H22_16	434161	389852	0.62	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_17	434172	389969	0.54	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_18	434179	390009	0.52	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_19	434146	390073	0.45	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_20	434071	390137	0.35	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_21	434043	390103	0.35	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_22	434023	390175	0.29	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_23	434006	390194	0.27	*SE*	Middle River Don: Hillsborough to City Centre	LWS
H22_24	433973	390233	0.22	*ESE*	Middle River Don: Hillsborough to City Centre	LWS
H22_25	433948	390263	0.18	*ESE*	Middle River Don: Hillsborough to City Centre	LWS
H22_26	433926	390295	0.15	*ESE*	Middle River Don: Hillsborough to City Centre	LWS
H22_27	433893	390334	0.11	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_28	433867	390347	0.08	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_29	433859	390349	0.07	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_30	433849	390351	0.06	*E*	Middle River Don: Hillsborough to City Centre	LWS
H22_31	433836	390352	0.05	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_32	433826	390352	0.04	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_33	433819	390351	0.03	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_34	433804	390348	0.02	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_35	433772	390344	0.02	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_36	433762	390342	0.03	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_37	433754	390341	0.04	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_38	433744	390339	0.05	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_39	433734	390337	0.06	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_40	433725	390335	0.07	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_41	433713	390335	0.08	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_42	433699	390337	0.09	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_43	433688	390339	0.10	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_44	433658	390354	0.13	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_45	433639	390373	0.15	*WNW*	Middle River Don: Hillsborough to City Centre	LWS

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H22_46	433620	390406	0.18	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_47	433594	390463	0.23	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_48	433558	390508	0.29	*NW*	Middle River Don: Hillsborough to City Centre	LWS
H22_49	433507	390523	0.34	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_50	433471	390518	0.36	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_51	433663	390381	0.13	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_52	433666	390375	0.13	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_53	433670	390370	0.12	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_54	433680	390361	0.11	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_55	433687	390359	0.10	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_56	433695	390360	0.10	*W*	Middle River Don: Hillsborough to City Centre	LWS
H22_57	433703	390362	0.09	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_58	433712	390361	0.08	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_59	433719	390361	0.07	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_60	433725	390362	0.07	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_61	433738	390365	0.06	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_62	433746	390368	0.05	*WNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_63	433752	390370	0.05	*NW*	Middle River Don: Hillsborough to City Centre	LWS
H22_64	433759	390372	0.04	*NW*	Middle River Don: Hillsborough to City Centre	LWS
H22_65	433776	390379	0.04	*NNW*	Middle River Don: Hillsborough to City Centre	LWS
H22_66	433787	390381	0.04	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_67	433801	390385	0.05	*NNE*	Middle River Don: Hillsborough to City Centre	LWS
H22_68	433807	390373	0.04	*NNE*	Middle River Don: Hillsborough to City Centre	LWS
H22_69	433819	390375	0.05	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_70	433829	390382	0.06	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_71	433863	390387	0.09	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H22_72	433893	390415	0.13	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_73	433886	390442	0.14	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_74	433855	390466	0.14	*NNE*	Middle River Don: Hillsborough to City Centre	LWS

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H22_75	433827	390517	0.18	*NNE*	Middle River Don: Hillsborough to City Centre	LWS
H22_76	433816	390557	0.22	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_77	433807	390591	0.25	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_78	433805	390634	0.29	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_79	433794	390665	0.33	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_80	433766	390719	0.38	*N*	Middle River Don: Hillsborough to City Centre	LWS
H22_81	433956	390474	0.22	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_82	433962	390466	0.22	*NE*	Middle River Don: Hillsborough to City Centre	LWS
H22_83	433985	390439	0.22	*ENE*	Middle River Don: Hillsborough to City Centre	LWS
H23_1	433962	390466	0.22	*NE*	Scraith Wood & Rawson Spring	LWS
H23_2	433888	390575	0.26	*NNE*		LWS
H23_3	433808	390727	0.39	*N*		LWS
H24_1	434163	390282	0.38	*E*	Wardsend Cemetery	LWS
H24_2	434109	390325	0.32	*E*		LWS
H24_3	434010	390413	0.24	*ENE*		LWS
H24_4	433985	390439	0.22	*ENE*		LWS
H24_5	433962	390466	0.22	*NE*		LWS
H27_1	433441	390511	0.39	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_2	433397	390499	0.42	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_3	433378	390497	0.44	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_4	433357	390499	0.46	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_5	433324	390500	0.49	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_6	433293	390503	0.52	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_7	433253	390508	0.56	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_8	433176	390551	0.65	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_9	433142	390601	0.70	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_10	433106	390683	0.76	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_11	433064	390744	0.83	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_12	433014	390805	0.90	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_13	432960	390868	0.98	*WNW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_14	432925	390965	1.07	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_15	432885	391092	1.18	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_16	432846	391207	1.28	*NW*	Upper River Don: Deepcar to Hillsborough	LWS

Receptor	OS grid reference		Distance from boiler stack (km)	Direction	Description	Designation
	E	N				
H27_17	432788	391317	1.40	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_18	432769	391398	1.47	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_19	432805	391507	1.53	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_20	432841	391551	1.54	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_21	432815	391619	1.61	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_22	432695	391618	1.68	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_23	432557	391588	1.75	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H27_24	432421	391623	1.88	*NW*	Upper River Don: Deepcar to Hillsborough	LWS
H25	435404	390791	1.68	*ENE*	Norwood Allotments Woodlands	LWS
H26	435284	390469	1.50	*E*	Busk Meadow Woodland	LWS

Note 1: designated for geological importance and not included in the assessment as not sensitive to air pollution.

Calculation of PECs

In the case of long-term mean concentration calculations, the long-term mean concentrations due to the boiler emissions are added directly to the long-term mean background concentrations.

It is not possible to add short-period peak background and process concentrations directly. As described in the Environment Agency guidance (Environment Agency, 2025), the short-term peak PC values (i.e. for the 1-hour mean NO_2 and 24-hour mean NOx concentrations) are added to twice the long-term mean background concentration to provide a reasonable estimate of peak concentrations due to emissions from all sources.

Treatment of oxides of nitrogen

It was assumed that 70% of NOx emitted from the proposed boiler will be converted to NO_2 at ground level in the vicinity of the site, for determination of the annual mean NO_2 concentrations, and 35% of emitted NOx will be converted to NO_2 for determination of the hourly mean NO_2 concentrations. This is in line with Environment Agency air dispersion modelling reports guidance Environment Agency (2024). This approach is likely to overestimate the annual mean NO_2 concentrations considerably at the most relevant assessment locations close to the exhaust stacks location where the maximum concentrations are anticipated. AQMAU has undertaken modelling sensitivity on diesel generator sets, indicating lower NOx:NO_2 conversion ratios over shorter distances, although it is noted that this research is not directly analogous to this study (AQMAU, 2016).

Calculating Acid and Nitrogen Deposition

Nitrogen and acid deposition have been predicted using the methodologies presented in the Air Quality Technical Advisory Group (AQTAG) technical guidance note AQTAG 06 (AQTAQ, 2014).

It is normally necessary to distinguish between nitric oxide (NO) and nitrogen dioxide (NO_2) in a deposition assessment as there is no impact from NO. In this case, the conservative assumption that 70% of the NOx are in the form of NO_2 was adopted, in line with the assessment at human receptors described above. This approach is likely to overestimate the nutrient nitrogen deposition rates considerably at the most relevant

assessment locations close to the boiler stack locations where the maximum deposition rates are anticipated.

Information on the existing nitrogen and acid deposition was obtained from the APIS website (CEH, 2025). Information on the critical loads for each ecological receptor was also obtained from the APIS website using the Site Relevant Critical Load function.

The annual dry deposition flux can be obtained from the modelled annual average ground level concentration via use of the formula:

Dry deposition flux ($\mu g/m^2/s$) = ground level concentration ($\mu g/m^3$) x deposition velocity (m/s)

(where µg refers to µg of the chemical species under consideration).

Dry deposition velocities vary depending on the type of land mass and weather conditions such as humidity. The following values have been used as presented within the technical guidance note (AQTAG, 2014) depending on whether the ecological receptor feature consisted of short or tall vegetation.

- NO_2 – 0.0015 m/s for short vegetation (e.g. grassland or plants)
- NO_2 – 0.0030 m/s for tall vegetation (e.g. trees)

To convert the dry deposition flux from units of $\mu g/m^2/s$ (where µg refers to µg of the chemical species) to units of kg N/ha/yr (where kg refers to kg of nitrogen) the dry deposition flux was multiplied by the conversion factors shown in Table 23 from the technical guidance note (AQTAG, 2014). To convert dry deposition flux to acid deposition, the dry deposition flux was multiplied by the factors shown in Table 24 from the technical guidance note (AQTAG, 2014).

Table 17 Dry deposition flux conversion factors for nutrient nitrogen deposition

$\mu g/m^2/s$ of species	Conversion factor to kg N/ha/yr
NO_2	95.9

Table 18 Dry deposition flux conversion factors for acid deposition

$\mu g/m^2/s$ of species	Conversion factor to keq/ha/yr
NO_2	6.84

Annex B – Detailed Model Results

Table 19 Dispersion modelling results – Historical, Current and Current PL scenarios – annual mean NO_2 at human receptors

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
1	10.59	3.5	8.81%	14.1	35.3%	0.8	2.07%	11.4	28.6%	0.30	0.74%	10.9	27.2%
2	10.59	1.8	4.60%	12.4	31.1%	0.4	0.99%	11.0	27.5%	0.13	0.32%	10.7	26.8%
3	10.59	1.3	3.27%	11.9	29.7%	0.3	0.69%	10.9	27.2%	0.09	0.21%	10.7	26.7%
4	10.59	1.1	2.80%	11.7	29.3%	0.2	0.61%	10.8	27.1%	0.08	0.19%	10.7	26.7%
5	10.59	0.9	2.29%	11.5	28.8%	0.2	0.49%	10.8	27.0%	0.06	0.15%	10.7	26.6%
6	35.00	0.6	1.38%	35.6	88.9%	0.1	0.31%	35.1	87.8%	0.04	0.10%	35.0	87.6%
7	35.00	0.7	1.80%	35.7	89.3%	0.2	0.41%	35.2	87.9%	0.06	0.14%	35.1	87.6%
8	12.08	2.2	5.40%	14.2	35.6%	0.5	1.27%	12.6	31.5%	0.18	0.45%	12.3	30.7%
9	35.00	0.9	2.23%	35.9	89.7%	0.2	0.48%	35.2	88.0%	0.06	0.16%	35.1	87.7%
10	35.00	0.8	2.10%	35.8	89.6%	0.2	0.46%	35.2	88.0%	0.06	0.15%	35.1	87.7%
11	12.08	2.0	4.94%	14.1	35.1%	0.5	1.21%	12.6	31.4%	0.18	0.44%	12.3	30.6%
12	12.08	1.2	2.92%	13.2	33.1%	0.3	0.66%	12.3	30.9%	0.09	0.23%	12.2	30.4%

Note: Short term receptors not included in this table, only those where the annual mean averaging period is applicable are shown.

Table 20 Dispersion modelling results – Historical, Current and Current PL scenarios – 1-hour mean NO_2 at human receptors

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
1	21.18	11.1	5.54%	32.3	16.13%	2.7	1.34%	23.9	11.93%	1.1	0.53%	22.2	11.12%
2	21.18	7.6	3.82%	28.8	14.41%	1.8	0.88%	22.9	11.47%	0.6	0.30%	21.8	10.89%
3	21.18	7.1	3.53%	28.2	14.12%	1.7	0.85%	22.9	11.44%	0.8	0.38%	21.9	10.97%
4	21.18	6.9	3.43%	28.0	14.02%	2.3	1.13%	23.5	11.73%	1.0	0.50%	22.2	11.09%
5	21.18	5.8	2.88%	26.9	13.47%	1.4	0.70%	22.6	11.29%	0.5	0.26%	21.7	10.85%
6	70.00	7.2	3.62%	77.2	38.62%	1.6	0.82%	71.6	35.82%	0.6	0.28%	70.6	35.28%
7	70.00	8.7	4.35%	78.7	39.35%	2.0	1.01%	72.0	36.01%	0.7	0.35%	70.7	35.35%
8	24.17	31.5	15.76%	55.7	27.84%	7.1	3.54%	31.2	15.62%	2.5	1.23%	26.6	13.31%
9	70.00	8.9	4.45%	78.9	39.45%	2.0	1.01%	72.0	36.01%	0.7	0.36%	70.7	35.36%
10	70.00	8.1	4.05%	78.1	39.05%	1.9	0.96%	71.9	35.96%	0.7	0.35%	70.7	35.35%
11	24.17	15.8	7.91%	40.0	19.99%	3.8	1.88%	27.9	13.97%	1.4	0.68%	25.5	12.76%
12	24.17	8.1	4.04%	32.2	16.12%	1.9	0.95%	26.1	13.03%	0.7	0.35%	24.9	12.43%
13_1	24.17	12.7	6.33%	36.8	18.41%	3.1	1.55%	27.3	13.63%	1.2	0.61%	25.4	12.69%
13_2	24.17	14.4	7.20%	38.6	19.29%	3.7	1.85%	27.9	13.93%	1.4	0.68%	25.5	12.76%
13_3	24.17	15.8	7.89%	39.9	19.97%	4.1	2.05%	28.3	14.13%	1.8	0.89%	25.9	12.97%
13_4	24.17	18.0	8.98%	42.1	21.07%	4.6	2.31%	28.8	14.39%	1.9	0.97%	26.1	13.05%
13_5	24.17	19.1	9.56%	43.3	21.64%	5.3	2.67%	29.5	14.76%	2.3	1.16%	26.5	13.25%
13_6	24.17	22.6	11.31%	46.8	23.40%	6.4	3.21%	30.6	15.30%	3.4	1.70%	27.6	13.78%
13_7	24.17	15.2	7.59%	39.3	19.67%	3.5	1.74%	27.7	13.83%	2.2	1.10%	26.4	13.18%
13_8	24.17	3.1	1.57%	27.3	13.65%	0.6	0.32%	24.8	12.40%	0.5	0.25%	24.7	12.34%
13_9	24.17	1.3	0.65%	25.5	12.73%	1.0	0.48%	25.1	12.57%	0.6	0.32%	24.8	12.41%
13_10	24.17	16.8	8.42%	41.0	20.51%	5.9	2.93%	30.0	15.01%	2.7	1.36%	26.9	13.44%
13_11	24.17	27.5	13.76%	51.7	25.84%	7.2	3.62%	31.4	15.71%	2.8	1.41%	27.0	13.49%
13_12	24.17	19.3	9.67%	43.5	21.76%	4.6	2.31%	28.8	14.40%	1.7	0.84%	25.8	12.92%
13_13	21.18	11.1	5.57%	32.3	16.16%	2.7	1.34%	23.9	11.93%	1.0	0.51%	22.2	11.10%
13_14	24.17	12.8	6.40%	37.0	18.49%	3.1	1.55%	27.3	13.63%	1.3	0.64%	25.4	12.72%
13_15	24.17	14.3	7.15%	38.5	19.23%	3.5	1.75%	27.7	13.84%	1.3	0.67%	25.5	12.76%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
13_16	24.17	14.8	7.38%	38.9	19.46%	3.4	1.71%	27.6	13.80%	1.3	0.63%	25.4	12.71%
13_17	24.17	13.5	6.74%	37.6	18.82%	3.3	1.65%	27.5	13.73%	1.2	0.60%	25.4	12.68%
13_18	24.17	12.5	6.27%	36.7	18.35%	3.1	1.54%	27.2	13.62%	1.2	0.58%	25.3	12.66%
13_19	24.17	11.7	5.84%	35.8	17.92%	2.8	1.41%	27.0	13.49%	1.0	0.50%	25.2	12.59%
13_20	24.17	8.9	4.44%	33.1	16.53%	2.2	1.08%	26.3	13.16%	0.8	0.40%	25.0	12.49%

Table 21 Dispersion modelling results – Historical, Current and Current PL scenarios – Maximum running 8-hour mean CO at human receptors

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
1	415.0	15.8	0.16%	430.7	4.31%	1.5	0.01%	416.4	4.16%	0.49	0.005%	415.5	4.15%
2	415.0	10.8	0.11%	425.7	4.26%	0.9	0.01%	415.9	4.16%	0.25	0.003%	415.2	4.15%
3	415.0	9.3	0.09%	424.3	4.24%	0.8	0.01%	415.7	4.16%	0.33	0.003%	415.3	4.15%
4	415.0	9.6	0.10%	424.5	4.25%	0.9	0.01%	415.9	4.16%	0.30	0.003%	415.3	4.15%
5	415.0	7.7	0.08%	422.7	4.23%	0.7	0.01%	415.6	4.16%	0.19	0.002%	415.2	4.15%
6	375.7	11.2	0.11%	386.9	3.87%	0.9	0.01%	376.7	3.77%	0.27	0.003%	376.0	3.76%
7	375.7	13.0	0.13%	388.7	3.89%	1.1	0.01%	376.8	3.77%	0.33	0.003%	376.1	3.76%
8	375.7	43.8	0.44%	419.6	4.20%	4.0	0.04%	379.8	3.80%	1.13	0.011%	376.9	3.77%
9	375.7	11.5	0.11%	387.2	3.87%	1.0	0.01%	376.8	3.77%	0.28	0.003%	376.0	3.76%
10	375.7	10.8	0.11%	386.6	3.87%	1.1	0.01%	376.8	3.77%	0.30	0.003%	376.0	3.76%
11	375.7	21.5	0.21%	397.2	3.97%	1.9	0.02%	377.7	3.78%	0.57	0.006%	376.3	3.76%
12	375.7	10.3	0.10%	386.0	3.86%	1.0	0.01%	376.7	3.77%	0.33	0.003%	376.1	3.76%

Table 22 Dispersion modelling results – Historical, Current and Current PL scenarios – Maximum 1-hour mean CO at human receptors

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
1	414.96	18.2	0.06%	433.1	1.44%	2.6	0.01%	417.51	1.39%	0.60	0.00%	415.56	1.39%
2	414.96	18.5	0.06%	433.4	1.44%	1.9	0.01%	416.81	1.39%	0.48	0.00%	415.44	1.38%
3	414.96	15.8	0.05%	430.8	1.44%	1.5	0.00%	416.43	1.39%	0.57	0.00%	415.53	1.39%
4	414.96	14.2	0.05%	429.2	1.43%	1.8	0.01%	416.80	1.39%	0.71	0.00%	415.67	1.39%
5	414.96	14.3	0.05%	429.2	1.43%	1.1	0.00%	416.08	1.39%	0.42	0.00%	415.38	1.38%
6	375.74	46.9	0.16%	422.7	1.41%	4.4	0.01%	380.14	1.27%	1.15	0.00%	376.89	1.26%
7	375.74	48.6	0.16%	424.4	1.41%	4.5	0.02%	380.28	1.27%	1.17	0.00%	376.92	1.26%
8	375.74	63.6	0.21%	439.3	1.46%	7.3	0.02%	383.01	1.28%	2.26	0.01%	378.01	1.26%
9	375.74	24.8	0.08%	400.5	1.34%	2.0	0.01%	377.75	1.26%	0.64	0.00%	376.38	1.25%
10	375.74	18.8	0.06%	394.6	1.32%	1.8	0.01%	377.51	1.26%	0.48	0.00%	376.23	1.25%
11	375.74	27.3	0.09%	403.1	1.34%	2.7	0.01%	378.48	1.26%	0.87	0.00%	376.61	1.26%
12	375.74	18.1	0.06%	393.8	1.31%	1.5	0.01%	377.26	1.26%	0.47	0.00%	376.21	1.25%
13_1	375.74	20.7	0.07%	396.47	1.32%	3.0	0.01%	378.78	1.26%	0.69	0.00%	376.43	1.25%
13_2	375.74	25.1	0.08%	400.81	1.34%	2.9	0.01%	378.62	1.26%	0.91	0.00%	376.65	1.26%
13_3	375.74	29.1	0.10%	404.84	1.35%	3.1	0.01%	378.83	1.26%	1.03	0.00%	376.77	1.26%
13_4	375.74	38.5	0.13%	414.28	1.38%	4.0	0.01%	379.74	1.27%	1.34	0.00%	377.09	1.26%
13_5	375.74	61.4	0.20%	437.17	1.46%	6.9	0.02%	382.63	1.28%	2.46	0.01%	378.20	1.26%
13_6	375.74	99.4	0.33%	475.13	1.58%	11.8	0.04%	387.58	1.29%	4.19	0.01%	379.93	1.27%
13_7	375.74	67.2	0.22%	442.92	1.48%	8.9	0.03%	384.61	1.28%	4.61	0.02%	380.35	1.27%
13_8	375.74	35.8	0.12%	411.54	1.37%	6.8	0.02%	382.59	1.28%	3.56	0.01%	379.30	1.26%
13_9	375.74	24.3	0.08%	400.07	1.33%	3.8	0.01%	379.50	1.26%	1.76	0.01%	377.50	1.26%
13_10	375.74	82.8	0.28%	458.55	1.53%	9.4	0.03%	385.12	1.28%	3.39	0.01%	379.13	1.26%
13_11	375.74	93.7	0.31%	469.49	1.56%	11.2	0.04%	386.99	1.29%	3.44	0.01%	379.18	1.26%
13_12	375.74	36.2	0.12%	411.99	1.37%	4.1	0.01%	379.82	1.27%	1.36	0.00%	377.11	1.26%
13_13	414.96	18.2	0.06%	433.15	1.44%	2.4	0.01%	417.40	1.39%	0.55	0.00%	415.51	1.39%
13_14	375.74	21.3	0.07%	397.08	1.32%	2.2	0.01%	377.92	1.26%	0.77	0.00%	376.51	1.26%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
13_15	375.74	22.4	0.07%	398.12	1.33%	2.3	0.01%	378.00	1.26%	0.79	0.00%	376.54	1.26%
13_16	375.74	25.3	0.08%	401.05	1.34%	2.5	0.01%	378.21	1.26%	0.79	0.00%	376.53	1.26%
13_17	375.74	23.5	0.08%	399.28	1.33%	2.3	0.01%	378.03	1.26%	0.89	0.00%	376.63	1.26%
13_18	375.74	30.0	0.10%	405.78	1.35%	2.7	0.01%	378.40	1.26%	0.93	0.00%	376.67	1.26%
13_19	375.74	32.2	0.11%	407.98	1.36%	2.6	0.01%	378.33	1.26%	0.91	0.00%	376.65	1.26%
13_20	375.74	28.7	0.10%	404.42	1.35%	2.4	0.01%	378.11	1.26%	0.67	0.00%	376.42	1.25%

Table 23 Dispersion modelling results – Historical, Current and Current PL scenarios – annual mean NOx at each ecological receptor

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H1	17.69	0.73	2.43%	18.42	61.39%	0.16	0.52%	17.85	59.48%	0.05	0.17%	17.74	59.13%
H2	17.69	0.22	0.73%	17.91	59.69%	0.05	0.15%	17.73	59.11%	0.01	0.05%	17.70	59.01%
H3	9.05	0.05	0.17%	9.11	30.36%	0.01	0.04%	9.07	30.22%	0.00	0.01%	9.06	30.19%
H4_1	6.04	0.008	0.03%	6.05	20.16%	0.00	0.01%	6.04	20.14%	0.00	0.002%	6.04	20.13%
H4_2	6.82	0.015	0.05%	6.83	22.77%	0.00	0.01%	6.82	22.73%	0.00	0.003%	6.82	22.72%
H4_3	6.44	0.016	0.05%	6.46	21.52%	0.00	0.011%	6.44	21.48%	0.00	0.003%	6.44	21.47%
H4_4	6.95	0.015	0.05%	6.96	23.21%	0.00	0.01%	6.95	23.17%	0.00	0.003%	6.95	23.16%
H5	10.62	0.08	0.28%	10.70	35.68%	0.02	0.06%	10.64	35.47%	0.01	0.02%	10.63	35.42%
H6	15.14	0.31	1.04%	15.45	51.52%	0.06	0.21%	15.21	50.69%	0.02	0.06%	15.16	50.54%
H7	9.31	0.06	0.20%	9.37	31.23%	0.01	0.04%	9.32	31.07%	0.00	0.01%	9.31	31.05%
H8_1	15.14	0.28	0.94%	15.43	51.42%	0.06	0.19%	15.20	50.67%	0.02	0.06%	15.16	50.54%
H8_2	15.35	0.20	0.65%	15.54	51.81%	0.04	0.13%	15.39	51.29%	0.01	0.04%	15.36	51.20%
H9_1	9.05	0.05	0.18%	9.11	30.36%	0.01	0.04%	9.07	30.22%	0.00	0.01%	9.06	30.19%
H9_2	10.62	0.10	0.34%	10.72	35.75%	0.02	0.08%	10.64	35.48%	0.01	0.03%	10.63	35.43%
H10	13.03	0.14	0.46%	13.16	43.87%	0.03	0.10%	13.06	43.52%	0.01	0.03%	13.03	43.45%
H11	9.31	0.06	0.21%	9.37	31.24%	0.01	0.04%	9.32	31.08%	0.00	0.01%	9.31	31.05%
H12	12.09	0.13	0.42%	12.22	40.72%	0.03	0.09%	12.12	40.38%	0.01	0.03%	12.10	40.32%
H13	11.69	0.10	0.32%	11.79	39.29%	0.02	0.06%	11.71	39.03%	0.01	0.02%	11.70	38.99%
H14	16.08	1.19	3.98%	17.28	57.59%	0.26	0.88%	16.35	54.49%	0.09	0.30%	16.17	53.92%
H15_1	17.69	0.52	1.73%	18.21	60.69%	0.11	0.38%	17.80	59.34%	0.04	0.12%	17.73	59.09%
H15_2	17.69	0.74	2.47%	18.43	61.43%	0.16	0.53%	17.85	59.49%	0.05	0.17%	17.74	59.13%
H15_3	17.69	0.83	2.78%	18.52	61.74%	0.18	0.60%	17.87	59.56%	0.06	0.19%	17.75	59.16%
H15_4	17.69	0.92	3.07%	18.61	62.03%	0.20	0.66%	17.89	59.62%	0.06	0.22%	17.75	59.18%
H15_5	13.91	1.11	3.69%	15.02	50.06%	0.24	0.80%	14.15	47.16%	0.08	0.26%	13.99	46.63%
H15_6	13.91	1.37	4.57%	15.28	50.93%	0.30	0.98%	14.21	47.35%	0.10	0.33%	14.01	46.69%
H15_7	13.91	1.75	5.85%	15.66	52.21%	0.38	1.28%	14.29	47.64%	0.13	0.42%	14.04	46.79%
H15_8	13.91	2.24	7.48%	16.15	53.85%	0.50	1.65%	14.40	48.02%	0.17	0.55%	14.08	46.92%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H16	16.91	0.10	0.35%	17.02	56.73%	0.02	0.07%	16.94	56.45%	0.01	0.02%	16.92	56.40%
H17	13.03	0.24	0.79%	13.26	44.21%	0.06	0.19%	13.08	43.60%	0.02	0.07%	13.04	43.48%
H18	12.22	0.14	0.47%	12.36	41.21%	0.03	0.10%	12.25	40.84%	0.01	0.03%	12.23	40.78%
H19_1	12.22	0.15	0.50%	12.37	41.24%	0.03	0.11%	12.26	40.85%	0.01	0.04%	12.23	40.78%
H19_2	12.22	0.17	0.58%	12.40	41.32%	0.04	0.13%	12.26	40.87%	0.01	0.04%	12.24	40.78%
H19_3	18.31	0.23	0.76%	18.54	61.79%	0.05	0.17%	18.36	61.20%	0.02	0.06%	18.33	61.09%
H19_4	18.31	0.90	3.00%	19.21	64.03%	0.20	0.66%	18.51	61.69%	0.07	0.22%	18.37	61.25%
H19_5	18.31	0.52	1.75%	18.83	62.78%	0.11	0.38%	18.42	61.41%	0.04	0.13%	18.35	61.16%
H19_6	17.69	0.53	1.76%	18.22	60.72%	0.12	0.39%	17.80	59.35%	0.04	0.13%	17.73	59.09%
H19_7	18.31	0.84	2.80%	19.15	63.83%	0.19	0.63%	18.50	61.66%	0.07	0.22%	18.37	61.25%
H19_8	18.31	1.03	3.43%	19.34	64.46%	0.23	0.77%	18.54	61.80%	0.08	0.26%	18.39	61.29%
H19_9	18.31	1.03	3.43%	19.34	64.46%	0.23	0.76%	18.54	61.80%	0.08	0.26%	18.39	61.29%
H19_10	18.31	1.02	3.40%	19.33	64.43%	0.23	0.75%	18.54	61.78%	0.08	0.26%	18.39	61.29%
H19_11	18.31	1.00	3.34%	19.31	64.37%	0.22	0.74%	18.53	61.77%	0.07	0.25%	18.38	61.28%
H19_12	18.31	0.98	3.26%	19.29	64.29%	0.22	0.72%	18.52	61.75%	0.07	0.24%	18.38	61.27%
H19_13	18.31	0.94	3.12%	19.24	64.15%	0.21	0.68%	18.51	61.71%	0.07	0.23%	18.38	61.26%
H19_14	18.31	0.88	2.93%	19.19	63.96%	0.19	0.64%	18.50	61.67%	0.06	0.21%	18.37	61.24%
H19_15	18.31	0.40	1.34%	18.71	62.37%	0.09	0.30%	18.40	61.34%	0.03	0.10%	18.34	61.13%
H19_16	18.31	0.51	1.71%	18.82	62.74%	0.12	0.39%	18.43	61.42%	0.04	0.13%	18.35	61.16%
H19_17	18.31	0.80	2.67%	19.11	63.70%	0.18	0.61%	18.49	61.64%	0.06	0.21%	18.37	61.24%
H20	12.22	0.15	0.49%	12.37	41.23%	0.03	0.11%	12.25	40.85%	0.01	0.04%	12.23	40.78%
H21	12.22	0.12	0.40%	12.34	41.14%	0.03	0.09%	12.25	40.83%	0.01	0.03%	12.23	40.77%
H22_1	13.91	3.95	13.16%	17.86	59.52%	0.88	2.94%	14.79	49.31%	0.30	1.00%	14.21	47.36%
H22_2	13.91	3.70	12.35%	17.61	58.71%	0.84	2.79%	14.75	49.16%	0.29	0.95%	14.19	47.32%
H22_3	13.91	3.30	11.00%	17.21	57.36%	0.74	2.47%	14.65	48.84%	0.25	0.84%	14.16	47.21%
H22_4	16.91	0.13	0.44%	17.05	56.83%	0.03	0.10%	16.94	56.48%	0.01	0.03%	16.92	56.41%
H22_5	16.91	0.15	0.49%	17.06	56.87%	0.03	0.10%	16.95	56.49%	0.01	0.03%	16.92	56.41%
H22_6	16.91	0.17	0.56%	17.08	56.94%	0.04	0.12%	16.95	56.50%	0.01	0.04%	16.93	56.42%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_7	17.69	0.19	0.65%	17.88	59.61%	0.04	0.14%	17.73	59.10%	0.01	0.05%	17.70	59.01%
H22_8	17.69	0.23	0.75%	17.91	59.71%	0.05	0.16%	17.74	59.13%	0.02	0.06%	17.71	59.02%
H22_9	17.69	0.29	0.96%	17.98	59.92%	0.07	0.22%	17.75	59.18%	0.02	0.08%	17.71	59.04%
H22_10	17.69	0.41	1.37%	18.10	60.33%	0.09	0.31%	17.78	59.28%	0.03	0.11%	17.72	59.07%
H22_11	17.69	0.46	1.52%	18.14	60.48%	0.10	0.35%	17.79	59.31%	0.04	0.12%	17.73	59.09%
H22_12	17.69	0.51	1.72%	18.20	60.68%	0.12	0.39%	17.81	59.36%	0.04	0.14%	17.73	59.10%
H22_13	17.69	0.60	2.01%	18.29	60.97%	0.14	0.46%	17.83	59.42%	0.05	0.16%	17.74	59.12%
H22_14	17.69	0.73	2.45%	18.42	61.41%	0.17	0.55%	17.85	59.51%	0.06	0.19%	17.75	59.15%
H22_15	17.69	0.87	2.89%	18.55	61.85%	0.20	0.65%	17.88	59.62%	0.07	0.23%	17.76	59.19%
H22_16	17.69	1.07	3.55%	18.76	62.52%	0.24	0.81%	17.93	59.77%	0.08	0.28%	17.77	59.24%
H22_17	17.69	1.45	4.83%	19.14	63.79%	0.33	1.10%	18.02	60.06%	0.12	0.38%	17.80	59.35%
H22_18	13.91	1.60	5.33%	15.51	51.70%	0.36	1.21%	14.27	47.57%	0.13	0.42%	14.04	46.79%
H22_19	13.91	2.04	6.79%	15.95	53.16%	0.46	1.54%	14.37	47.90%	0.16	0.54%	14.07	46.91%
H22_20	13.91	2.87	9.58%	16.78	55.95%	0.66	2.20%	14.57	48.57%	0.24	0.79%	14.15	47.15%
H22_21	13.91	2.71	9.05%	16.62	55.42%	0.62	2.08%	14.53	48.45%	0.22	0.75%	14.13	47.11%
H22_22	13.91	3.57	11.91%	17.48	58.28%	0.83	2.78%	14.74	49.15%	0.30	1.01%	14.21	47.38%
H22_23	13.91	3.95	13.16%	17.86	59.52%	0.93	3.09%	14.84	49.45%	0.34	1.14%	14.25	47.50%
H22_24	16.08	4.82	16.06%	20.90	69.67%	1.16	3.87%	17.25	57.49%	0.44	1.48%	16.53	55.09%
H22_25	16.08	5.72	19.05%	21.80	72.67%	1.40	4.66%	17.48	58.28%	0.54	1.81%	16.63	55.43%
H22_26	16.08	6.64	22.12%	22.72	75.74%	1.66	5.55%	17.75	59.17%	0.67	2.23%	16.75	55.85%
H22_27	16.08	7.02	23.39%	23.10	77.00%	1.75	5.83%	17.83	59.45%	0.76	2.54%	16.85	56.16%
H22_28	16.08	5.31	17.70%	21.39	71.31%	1.19	3.95%	17.27	57.57%	0.58	1.92%	16.66	55.54%
H22_29	16.08	4.65	15.50%	20.74	69.12%	0.96	3.20%	17.05	56.82%	0.48	1.59%	16.56	55.21%
H22_30	16.08	4.50	15.01%	20.59	68.63%	0.89	2.95%	16.97	56.57%	0.46	1.52%	16.54	55.13%
H22_31	16.08	3.53	11.76%	19.61	65.37%	0.76	2.52%	16.84	56.13%	0.40	1.34%	16.49	54.96%
H22_32	16.08	3.50	11.66%	19.58	65.28%	0.87	2.92%	16.96	56.53%	0.43	1.44%	16.52	55.05%
H22_33	16.08	5.48	18.28%	21.57	71.90%	1.49	4.97%	17.58	58.59%	0.66	2.22%	16.75	55.83%
H22_34	16.08	11.57	38.57%	27.66	92.18%	3.09	10.29%	19.17	63.90%	1.32	4.39%	17.40	58.01%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_35	16.08	12.22	40.72%	28.30	94.33%	2.51	8.36%	18.59	61.98%	1.06	3.55%	17.15	57.16%
H22_36	16.08	7.89	26.30%	23.98	79.92%	1.54	5.12%	17.62	58.74%	0.66	2.21%	16.75	55.82%
H22_37	16.08	5.40	18.01%	21.49	71.62%	1.16	3.86%	17.24	57.47%	0.51	1.71%	16.60	55.32%
H22_38	16.08	4.86	16.21%	20.95	69.82%	1.10	3.66%	17.18	57.28%	0.49	1.64%	16.58	55.26%
H22_39	16.08	4.61	15.35%	20.69	68.97%	1.09	3.64%	17.18	57.26%	0.49	1.65%	16.58	55.27%
H22_40	16.08	4.72	15.74%	20.81	69.36%	1.15	3.83%	17.23	57.44%	0.52	1.72%	16.60	55.33%
H22_41	16.08	3.73	12.43%	19.81	66.04%	0.99	3.31%	17.08	56.93%	0.44	1.47%	16.53	55.08%
H22_42	16.08	2.88	9.62%	18.97	63.23%	0.82	2.72%	16.90	56.34%	0.34	1.13%	16.42	54.75%
H22_43	16.08	2.97	9.91%	19.06	63.52%	0.81	2.71%	16.90	56.33%	0.33	1.11%	16.42	54.72%
H22_44	16.08	2.46	8.20%	18.54	61.82%	0.64	2.14%	16.73	55.76%	0.25	0.83%	16.34	54.45%
H22_45	16.08	2.20	7.33%	18.28	60.95%	0.56	1.87%	16.64	55.48%	0.21	0.71%	16.30	54.33%
H22_46	16.08	1.85	6.17%	17.93	59.78%	0.46	1.54%	16.55	55.15%	0.17	0.58%	16.26	54.19%
H22_47	16.08	1.53	5.10%	17.61	58.71%	0.36	1.20%	16.44	54.82%	0.13	0.44%	16.22	54.05%
H22_48	16.08	1.25	4.18%	17.34	57.79%	0.29	0.96%	16.37	54.58%	0.10	0.34%	16.19	53.96%
H22_49	16.08	0.98	3.27%	17.07	56.89%	0.22	0.73%	16.30	54.35%	0.08	0.25%	16.16	53.87%
H22_50	16.08	0.84	2.81%	16.93	56.42%	0.19	0.62%	16.27	54.24%	0.06	0.22%	16.15	53.83%
H22_51	16.08	2.12	7.05%	18.20	60.67%	0.57	1.90%	16.65	55.52%	0.23	0.77%	16.31	54.38%
H22_52	16.08	2.17	7.23%	18.25	60.84%	0.59	1.96%	16.67	55.58%	0.24	0.79%	16.32	54.41%
H22_53	16.08	2.21	7.37%	18.30	60.99%	0.60	2.01%	16.69	55.63%	0.25	0.82%	16.33	54.44%
H22_54	16.08	2.34	7.81%	18.43	61.42%	0.65	2.17%	16.74	55.79%	0.27	0.90%	16.36	54.52%
H22_55	16.08	2.37	7.91%	18.46	61.52%	0.67	2.23%	16.75	55.84%	0.28	0.94%	16.37	54.56%
H22_56	16.08	2.18	7.28%	18.27	60.89%	0.64	2.12%	16.72	55.74%	0.28	0.92%	16.36	54.53%
H22_57	16.08	1.84	6.13%	17.92	59.75%	0.56	1.87%	16.64	55.48%	0.25	0.84%	16.34	54.46%
H22_58	16.08	1.54	5.14%	17.63	58.76%	0.49	1.64%	16.58	55.26%	0.23	0.78%	16.32	54.39%
H22_59	16.08	1.54	5.12%	17.62	58.74%	0.48	1.59%	16.56	55.20%	0.23	0.78%	16.32	54.39%
H22_60	16.08	1.30	4.34%	17.39	57.96%	0.39	1.31%	16.48	54.92%	0.20	0.66%	16.28	54.28%
H22_61	16.08	0.53	1.76%	16.61	55.38%	0.19	0.63%	16.28	54.25%	0.11	0.36%	16.19	53.98%
H22_62	16.08	0.22	0.74%	16.31	54.36%	0.11	0.37%	16.20	53.99%	0.07	0.23%	16.15	53.85%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_63	16.08	0.13	0.45%	16.22	54.06%	0.07	0.25%	16.16	53.87%	0.05	0.16%	16.13	53.78%
H22_64	16.08	0.08	0.26%	16.16	53.87%	0.05	0.15%	16.13	53.77%	0.03	0.10%	16.12	53.72%
H22_65	16.08	0.04	0.12%	16.12	53.74%	0.02	0.07%	16.10	53.68%	0.01	0.05%	16.10	53.66%
H22_66	16.08	0.10	0.34%	16.19	53.95%	0.03	0.08%	16.11	53.70%	0.02	0.06%	16.10	53.68%
H22_67	16.08	0.66	2.21%	16.75	55.82%	0.12	0.41%	16.21	54.03%	0.08	0.28%	16.17	53.90%
H22_68	16.08	2.18	7.27%	18.27	60.89%	0.37	1.24%	16.46	54.85%	0.20	0.67%	16.29	54.29%
H22_69	16.08	4.07	13.57%	20.16	67.19%	0.74	2.47%	16.83	56.09%	0.39	1.31%	16.48	54.92%
H22_70	16.08	5.04	16.80%	21.12	70.41%	0.99	3.30%	17.07	56.91%	0.51	1.70%	16.59	55.32%
H22_71	16.08	6.32	21.08%	22.41	74.69%	1.49	4.96%	17.57	58.58%	0.63	2.09%	16.71	55.70%
H22_72	16.08	6.07	20.24%	22.16	73.85%	1.42	4.74%	17.51	58.36%	0.53	1.76%	16.61	55.37%
H22_73	16.08	5.48	18.25%	21.56	71.87%	1.28	4.27%	17.37	57.89%	0.46	1.54%	16.55	55.16%
H22_74	16.08	4.90	16.34%	20.99	69.96%	1.19	3.96%	17.27	57.58%	0.45	1.49%	16.53	55.10%
H22_75	16.08	3.83	12.75%	19.91	66.37%	0.90	3.01%	16.99	56.63%	0.33	1.09%	16.41	54.71%
H22_76	16.08	3.10	10.34%	19.19	63.95%	0.72	2.39%	16.80	56.00%	0.25	0.84%	16.34	54.46%
H22_77	16.08	2.60	8.68%	18.69	62.30%	0.59	1.98%	16.68	55.59%	0.21	0.69%	16.29	54.31%
H22_78	16.08	2.15	7.17%	18.23	60.78%	0.48	1.60%	16.57	55.22%	0.17	0.55%	16.25	54.17%
H22_79	16.08	1.85	6.17%	17.94	59.78%	0.41	1.37%	16.50	54.99%	0.14	0.47%	16.23	54.09%
H22_80	16.08	1.41	4.71%	17.50	58.32%	0.31	1.05%	16.40	54.66%	0.11	0.36%	16.19	53.98%
H22_81	16.08	3.70	12.33%	19.78	65.94%	0.82	2.72%	16.90	56.34%	0.28	0.92%	16.36	54.54%
H22_82	16.08	3.72	12.41%	19.81	66.03%	0.83	2.76%	16.91	56.38%	0.28	0.94%	16.37	54.55%
H22_83	16.08	3.89	12.96%	19.97	66.57%	0.86	2.88%	16.95	56.50%	0.29	0.98%	16.38	54.59%
H23_1	16.08	3.72	12.41%	19.81	66.03%	0.83	2.76%	16.91	56.38%	0.28	0.94%	16.37	54.55%
H23_2	16.08	2.82	9.40%	18.91	63.02%	0.63	2.10%	16.71	55.71%	0.21	0.71%	16.30	54.33%
H23_3	16.08	1.49	4.97%	17.58	58.59%	0.33	1.08%	16.41	54.70%	0.11	0.36%	16.19	53.98%
H24_1	13.91	2.71	9.02%	16.62	55.38%	0.60	2.01%	14.51	48.38%	0.20	0.68%	14.11	47.05%
H24_2	13.91	3.30	11.00%	17.21	57.36%	0.74	2.47%	14.65	48.84%	0.25	0.84%	14.16	47.21%
H24_3	13.91	3.95	13.16%	17.86	59.52%	0.88	2.94%	14.79	49.31%	0.30	1.00%	14.21	47.36%
H24_4	16.08	3.89	12.96%	19.97	66.57%	0.86	2.88%	16.95	56.50%	0.29	0.98%	16.38	54.59%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H24_5	16.08	3.72	12.41%	19.81	66.03%	0.83	2.76%	16.91	56.38%	0.28	0.94%	16.37	54.55%
H25	15.14	0.32	1.06%	15.46	51.54%	0.06	0.22%	15.21	50.69%	0.02	0.07%	15.16	50.54%
H26	15.14	0.36	1.22%	15.51	51.69%	0.07	0.25%	15.22	50.72%	0.02	0.08%	15.17	50.55%
H27_1	16.08	0.75	2.51%	16.84	56.13%	0.17	0.57%	16.25	54.18%	0.06	0.20%	16.14	53.81%
H27_2	16.08	0.67	2.24%	16.76	55.86%	0.15	0.50%	16.24	54.12%	0.05	0.17%	16.14	53.79%
H27_3	16.08	0.64	2.13%	16.72	55.75%	0.14	0.48%	16.23	54.09%	0.05	0.16%	16.13	53.78%
H27_4	16.08	0.60	2.00%	16.69	55.62%	0.13	0.45%	16.22	54.06%	0.05	0.15%	16.13	53.77%
H27_5	16.08	0.55	1.84%	16.64	55.45%	0.12	0.41%	16.21	54.03%	0.04	0.14%	16.13	53.76%
H27_6	16.08	0.51	1.69%	16.59	55.31%	0.11	0.38%	16.20	54.00%	0.04	0.13%	16.12	53.75%
H27_7	16.08	0.46	1.53%	16.54	55.14%	0.10	0.34%	16.19	53.96%	0.04	0.12%	16.12	53.73%
H27_8	16.08	0.36	1.21%	16.45	54.82%	0.08	0.27%	16.17	53.89%	0.03	0.09%	16.11	53.71%
H27_9	16.08	0.32	1.06%	16.40	54.68%	0.07	0.24%	16.16	53.86%	0.02	0.08%	16.11	53.70%
H27_10	16.08	0.28	0.93%	16.36	54.54%	0.06	0.21%	16.15	53.83%	0.02	0.07%	16.11	53.69%
H27_11	16.08	0.25	0.83%	16.33	54.45%	0.06	0.19%	16.14	53.81%	0.02	0.06%	16.10	53.68%
H27_12	16.08	0.22	0.74%	16.31	54.35%	0.05	0.17%	16.14	53.78%	0.02	0.06%	16.10	53.67%
H27_13	11.49	0.20	0.66%	11.69	38.95%	0.05	0.15%	11.53	38.45%	0.02	0.05%	11.50	38.35%
H27_14	11.49	0.18	0.61%	11.67	38.90%	0.04	0.14%	11.53	38.43%	0.01	0.05%	11.50	38.34%
H27_15	10.62	0.17	0.56%	10.79	35.96%	0.04	0.12%	10.66	35.53%	0.01	0.04%	10.63	35.44%
H27_16	10.62	0.15	0.52%	10.78	35.92%	0.04	0.12%	10.66	35.52%	0.01	0.04%	10.63	35.44%
H27_17	10.62	0.14	0.47%	10.76	35.87%	0.03	0.11%	10.65	35.51%	0.01	0.04%	10.63	35.44%
H27_18	10.62	0.14	0.46%	10.76	35.86%	0.03	0.11%	10.65	35.51%	0.01	0.04%	10.63	35.44%
H27_19	10.62	0.14	0.48%	10.76	35.88%	0.03	0.11%	10.65	35.51%	0.01	0.04%	10.63	35.44%
H27_20	10.62	0.15	0.49%	10.77	35.89%	0.03	0.11%	10.65	35.52%	0.01	0.04%	10.63	35.44%
H27_21	10.62	0.14	0.46%	10.76	35.86%	0.03	0.11%	10.65	35.51%	0.01	0.04%	10.63	35.44%
H27_22	10.62	0.12	0.41%	10.74	35.81%	0.03	0.09%	10.65	35.50%	0.01	0.03%	10.63	35.44%
H27_23	10.62	0.11	0.35%	10.73	35.75%	0.02	0.08%	10.64	35.48%	0.01	0.03%	10.63	35.43%
H27_24	10.62	0.09	0.30%	10.71	35.70%	0.02	0.07%	10.64	35.47%	0.01	0.02%	10.63	35.43%

Table 24 Dispersion modelling results – Historical, Current and Current PL scenarios – maximum 24-hour mean NOx at each ecological receptor

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H1	35.38	6.43	8.57%	41.81	55.74%	1.30	1.73%	36.68	48.90%	0.39	0.52%	35.77	47.69%
H2	35.38	1.90	2.53%	37.28	49.70%	0.38	0.51%	35.76	47.68%	0.12	0.16%	35.50	47.33%
H3	18.11	1.21	1.62%	19.32	25.76%	0.28	0.37%	18.38	24.51%	0.10	0.13%	18.21	24.27%
H4_1	12.08	0.25	0.33%	12.33	16.44%	0.05	0.06%	12.13	16.17%	0.01	0.02%	12.09	16.12%
H4_2	13.63	0.37	0.50%	14.01	18.67%	0.08	0.11%	13.71	18.28%	0.02	0.03%	13.66	18.21%
H4_3	12.88	0.38	0.51%	13.26	17.68%	0.08	0.102%	12.96	17.28%	0.02	0.03%	12.90	17.21%
H4_4	13.89	0.26	0.34%	14.15	18.87%	0.05	0.07%	13.95	18.60%	0.02	0.02%	13.91	18.55%
H5	21.24	1.62	2.15%	22.86	30.48%	0.38	0.50%	21.62	28.82%	0.13	0.18%	21.37	28.50%
H6	30.29	3.53	4.71%	33.82	45.09%	0.74	0.98%	31.02	41.37%	0.23	0.31%	30.52	40.69%
H7	18.62	1.18	1.58%	19.80	26.41%	0.27	0.36%	18.89	25.19%	0.09	0.13%	18.71	24.95%
H8_1	30.29	2.60	3.47%	32.89	43.85%	0.52	0.69%	30.80	41.07%	0.16	0.21%	30.45	40.60%
H8_2	30.70	1.63	2.17%	32.32	43.10%	0.33	0.43%	31.02	41.37%	0.10	0.14%	30.80	41.07%
H9_1	18.11	1.27	1.70%	19.38	25.84%	0.29	0.39%	18.40	24.53%	0.10	0.14%	18.21	24.28%
H9_2	21.24	1.97	2.62%	23.21	30.95%	0.44	0.59%	21.68	28.91%	0.14	0.18%	21.38	28.51%
H10	26.05	1.90	2.54%	27.95	37.27%	0.41	0.54%	26.46	35.28%	0.17	0.23%	26.22	34.96%
H11	18.62	1.28	1.71%	19.90	26.54%	0.30	0.40%	18.92	25.23%	0.11	0.14%	18.73	24.97%
H12	24.18	1.01	1.35%	25.19	33.59%	0.21	0.28%	24.39	32.52%	0.07	0.09%	24.25	32.33%
H13	23.38	1.14	1.52%	24.52	32.70%	0.23	0.31%	23.61	31.48%	0.08	0.10%	23.46	31.28%
H14	32.17	12.26	16.35%	44.43	59.24%	2.64	3.52%	34.81	46.42%	0.90	1.20%	33.07	44.09%
H15_1	35.38	4.84	6.46%	40.22	53.63%	1.10	1.47%	36.48	48.64%	0.35	0.46%	35.72	47.63%
H15_2	35.38	6.46	8.61%	41.83	55.78%	1.31	1.74%	36.68	48.91%	0.39	0.53%	35.77	47.70%
H15_3	35.38	6.64	8.86%	42.02	56.03%	1.38	1.84%	36.75	49.00%	0.44	0.59%	35.82	47.75%
H15_4	35.38	7.08	9.44%	42.46	56.61%	1.50	2.01%	36.88	49.18%	0.49	0.66%	35.87	47.83%
H15_5	27.82	8.03	10.71%	35.85	47.80%	1.71	2.28%	29.53	39.38%	0.56	0.75%	28.38	37.84%
H15_6	27.82	9.16	12.22%	36.98	49.31%	1.98	2.65%	29.80	39.74%	0.69	0.92%	28.51	38.01%
H15_7	27.82	11.93	15.90%	39.75	52.99%	2.63	3.51%	30.45	40.60%	0.90	1.21%	28.72	38.30%
H15_8	27.82	14.18	18.91%	42.00	56.00%	3.36	4.48%	31.18	41.57%	1.16	1.54%	28.98	38.64%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H16	33.83	1.52	2.02%	35.35	47.13%	0.33	0.45%	34.16	45.55%	0.10	0.14%	33.93	45.24%
H17	26.05	4.04	5.38%	30.09	40.11%	1.06	1.41%	27.11	36.15%	0.39	0.51%	26.44	35.25%
H18	24.44	1.70	2.27%	26.15	34.86%	0.36	0.48%	24.81	33.08%	0.15	0.21%	24.60	32.80%
H19_1	24.44	1.86	2.47%	26.30	35.07%	0.39	0.52%	24.83	33.11%	0.15	0.20%	24.59	32.79%
H19_2	24.44	2.17	2.89%	26.61	35.48%	0.47	0.63%	24.92	33.22%	0.16	0.21%	24.60	32.81%
H19_3	36.62	2.70	3.60%	39.32	52.43%	0.62	0.83%	37.24	49.65%	0.21	0.28%	36.83	49.11%
H19_4	36.62	9.70	12.94%	46.32	61.76%	1.98	2.65%	38.60	51.47%	0.61	0.82%	37.23	49.64%
H19_5	36.62	5.74	7.66%	42.36	56.48%	1.24	1.66%	37.86	50.48%	0.47	0.63%	37.09	49.46%
H19_6	35.38	5.26	7.02%	40.64	54.19%	1.18	1.58%	36.56	48.75%	0.45	0.61%	35.83	47.78%
H19_7	36.62	7.84	10.46%	44.46	59.28%	1.83	2.45%	38.45	51.27%	0.70	0.94%	37.32	49.76%
H19_8	36.62	10.63	14.17%	47.25	62.99%	2.13	2.84%	38.75	51.67%	0.68	0.90%	37.30	49.73%
H19_9	36.62	11.32	15.09%	47.94	63.92%	2.23	2.98%	38.85	51.80%	0.69	0.92%	37.31	49.74%
H19_10	36.62	11.74	15.65%	48.36	64.48%	2.33	3.11%	38.95	51.94%	0.72	0.96%	37.34	49.78%
H19_11	36.62	11.66	15.54%	48.27	64.36%	2.34	3.11%	38.95	51.94%	0.72	0.96%	37.34	49.78%
H19_12	36.62	11.27	15.03%	47.89	63.86%	2.28	3.03%	38.89	51.86%	0.70	0.94%	37.32	49.76%
H19_13	36.62	10.44	13.92%	47.06	62.74%	2.12	2.83%	38.74	51.66%	0.66	0.88%	37.27	49.70%
H19_14	36.62	9.45	12.60%	46.07	61.42%	1.93	2.58%	38.55	51.40%	0.61	0.81%	37.22	49.63%
H19_15	36.62	4.65	6.20%	41.27	55.03%	0.98	1.30%	37.59	50.13%	0.33	0.44%	36.95	49.26%
H19_16	36.62	5.76	7.67%	42.37	56.50%	1.20	1.60%	37.82	50.42%	0.38	0.51%	37.00	49.34%
H19_17	36.62	7.63	10.17%	44.24	58.99%	2.01	2.68%	38.63	51.51%	0.77	1.02%	37.39	49.85%
H20	24.44	1.78	2.38%	26.23	34.97%	0.38	0.50%	24.82	33.09%	0.15	0.21%	24.60	32.80%
H21	24.44	1.42	1.89%	25.86	34.49%	0.32	0.43%	24.77	33.02%	0.11	0.14%	24.55	32.73%
H22_1	27.82	22.45	29.93%	50.27	67.03%	4.93	6.57%	32.74	43.66%	1.64	2.18%	29.46	39.28%
H22_2	27.82	18.58	24.77%	46.40	61.86%	4.07	5.42%	31.89	42.51%	1.37	1.83%	29.19	38.92%
H22_3	27.82	17.23	22.98%	45.05	60.07%	4.10	5.47%	31.92	42.56%	1.42	1.89%	29.24	38.98%
H22_4	33.83	1.66	2.22%	35.49	47.32%	0.40	0.54%	34.23	45.64%	0.14	0.19%	33.97	45.29%
H22_5	33.83	1.92	2.56%	35.75	47.66%	0.46	0.62%	34.29	45.72%	0.16	0.21%	33.99	45.32%
H22_6	33.83	2.19	2.92%	36.02	48.03%	0.53	0.71%	34.36	45.81%	0.18	0.25%	34.01	45.35%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_7	35.38	2.41	3.21%	37.79	50.38%	0.59	0.79%	35.97	47.96%	0.21	0.28%	35.59	47.45%
H22_8	35.38	2.60	3.46%	37.97	50.63%	0.65	0.87%	36.03	48.04%	0.23	0.31%	35.61	47.48%
H22_9	35.38	3.18	4.24%	38.56	51.41%	0.71	0.95%	36.09	48.12%	0.25	0.33%	35.63	47.50%
H22_10	35.38	4.40	5.87%	39.78	53.04%	1.06	1.41%	36.44	48.58%	0.40	0.53%	35.77	47.70%
H22_11	35.38	4.81	6.42%	40.19	53.59%	1.19	1.59%	36.57	48.76%	0.45	0.60%	35.82	47.76%
H22_12	35.38	5.40	7.19%	40.77	54.36%	1.40	1.87%	36.78	49.04%	0.52	0.70%	35.90	47.87%
H22_13	35.38	6.61	8.82%	41.99	55.99%	1.70	2.27%	37.08	49.44%	0.61	0.81%	35.99	47.98%
H22_14	35.38	7.54	10.05%	42.92	57.22%	1.87	2.49%	37.25	49.66%	0.63	0.84%	36.01	48.01%
H22_15	35.38	8.69	11.59%	44.07	58.76%	2.20	2.93%	37.58	50.10%	0.75	1.01%	36.13	48.18%
H22_16	35.38	9.92	13.23%	45.30	60.39%	2.55	3.41%	37.93	50.58%	0.89	1.19%	36.27	48.36%
H22_17	35.38	11.93	15.91%	47.31	63.08%	2.66	3.54%	38.03	50.71%	0.92	1.23%	36.30	48.40%
H22_18	27.82	13.33	17.78%	41.15	54.87%	2.95	3.93%	30.77	41.03%	1.00	1.34%	28.82	38.43%
H22_19	27.82	15.76	21.01%	43.58	58.10%	3.55	4.73%	31.37	41.83%	1.22	1.63%	29.04	38.72%
H22_20	27.82	20.31	27.08%	48.13	64.18%	4.75	6.33%	32.57	43.43%	1.73	2.31%	29.55	39.40%
H22_21	27.82	20.42	27.23%	48.24	64.32%	4.74	6.32%	32.56	43.41%	1.77	2.36%	29.59	39.45%
H22_22	27.82	23.12	30.82%	50.93	67.91%	5.60	7.46%	33.42	44.55%	2.15	2.87%	29.97	39.96%
H22_23	27.82	24.69	32.91%	52.51	70.01%	5.82	7.76%	33.64	44.86%	2.30	3.06%	30.12	40.15%
H22_24	32.17	29.92	39.90%	62.09	82.79%	7.02	9.35%	39.19	52.25%	2.72	3.63%	34.89	46.52%
H22_25	32.17	31.44	41.92%	63.61	84.81%	7.88	10.50%	40.05	53.40%	3.10	4.13%	35.27	47.02%
H22_26	32.17	35.00	46.67%	67.17	89.57%	8.62	11.50%	40.79	54.39%	3.36	4.48%	35.53	47.37%
H22_27	32.17	37.03	49.37%	69.20	92.26%	8.87	11.83%	41.04	54.72%	3.82	5.10%	35.99	47.99%
H22_28	32.17	33.69	44.92%	65.86	87.81%	6.85	9.13%	39.02	52.02%	3.22	4.30%	35.39	47.19%
H22_29	32.17	33.59	44.79%	65.76	87.68%	6.04	8.05%	38.21	50.94%	2.91	3.89%	35.08	46.78%
H22_30	32.17	37.37	49.83%	69.54	92.72%	7.67	10.23%	39.84	53.13%	3.43	4.57%	35.60	47.46%
H22_31	32.17	35.57	47.43%	67.74	90.32%	6.94	9.25%	39.11	52.15%	3.37	4.49%	35.54	47.38%
H22_32	32.17	31.74	42.32%	63.91	85.22%	6.69	8.92%	38.86	51.82%	3.30	4.39%	35.46	47.29%
H22_33	32.17	38.34	51.12%	70.51	94.02%	12.01	16.01%	44.18	58.91%	4.74	6.32%	36.91	49.22%
H22_34	32.17	71.18	94.90%	103.35	137.79%	16.73	22.31%	48.90	65.20%	5.62	7.49%	37.79	50.38%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_35	32.17	64.76	86.34%	96.93	129.24%	13.56	18.08%	45.73	60.98%	4.70	6.26%	36.87	49.16%
H22_36	32.17	46.76	62.35%	78.93	105.24%	11.20	14.94%	43.37	57.83%	4.41	5.88%	36.58	48.77%
H22_37	32.17	42.20	56.27%	74.37	99.16%	11.83	15.78%	44.00	58.67%	4.66	6.21%	36.83	49.10%
H22_38	32.17	42.83	57.10%	75.00	99.99%	12.80	17.06%	44.97	59.95%	5.16	6.88%	37.33	49.77%
H22_39	32.17	48.19	64.25%	80.36	107.14%	14.38	19.17%	46.55	62.07%	5.72	7.63%	37.89	50.52%
H22_40	32.17	50.55	67.40%	82.72	110.29%	13.81	18.41%	45.98	61.31%	5.44	7.25%	37.61	50.15%
H22_41	32.17	50.00	66.67%	82.17	109.56%	13.04	17.39%	45.21	60.28%	5.06	6.74%	37.23	49.64%
H22_42	32.17	51.05	68.07%	83.22	110.96%	13.23	17.64%	45.40	60.53%	4.99	6.65%	37.16	49.55%
H22_43	32.17	50.25	67.00%	82.42	109.89%	12.10	16.13%	44.27	59.03%	4.52	6.03%	36.69	48.93%
H22_44	32.17	37.55	50.06%	69.71	92.95%	8.55	11.40%	40.72	54.29%	3.25	4.33%	35.42	47.23%
H22_45	32.17	31.77	42.36%	63.94	85.26%	7.25	9.67%	39.42	52.56%	2.72	3.63%	34.89	46.52%
H22_46	32.17	31.00	41.34%	63.17	84.23%	7.02	9.35%	39.18	52.25%	2.36	3.15%	34.53	46.04%
H22_47	32.17	26.49	35.32%	58.66	78.22%	6.00	8.00%	38.17	50.89%	2.18	2.91%	34.35	45.80%
H22_48	32.17	19.98	26.64%	52.15	69.53%	4.74	6.32%	36.91	49.22%	1.74	2.31%	33.91	45.21%
H22_49	32.17	17.36	23.15%	49.53	66.04%	3.82	5.09%	35.99	47.98%	1.35	1.79%	33.51	44.69%
H22_50	32.17	16.02	21.36%	48.19	64.26%	3.42	4.57%	35.59	47.46%	1.12	1.49%	33.29	44.39%
H22_51	32.17	36.22	48.30%	68.39	91.19%	8.70	11.60%	40.87	54.49%	3.17	4.23%	35.34	47.12%
H22_52	32.17	35.80	47.74%	67.97	90.63%	8.58	11.44%	40.75	54.33%	3.17	4.23%	35.34	47.12%
H22_53	32.17	35.08	46.78%	67.25	89.67%	8.56	11.41%	40.73	54.31%	3.22	4.29%	35.39	47.18%
H22_54	32.17	42.95	57.26%	75.12	100.16%	11.71	15.62%	43.88	58.51%	4.40	5.87%	36.57	48.76%
H22_55	32.17	48.29	64.38%	80.45	107.27%	13.23	17.65%	45.40	60.54%	5.00	6.66%	37.17	49.56%
H22_56	32.17	48.29	64.38%	80.45	107.27%	13.51	18.01%	45.68	60.90%	5.17	6.89%	37.34	49.79%
H22_57	32.17	42.34	56.45%	74.51	99.34%	11.42	15.23%	43.59	58.12%	4.30	5.73%	36.47	48.63%
H22_58	32.17	41.01	54.68%	73.18	97.57%	11.50	15.33%	43.67	58.22%	4.42	5.89%	36.59	48.78%
H22_59	32.17	38.99	51.99%	71.16	94.88%	11.32	15.09%	43.49	57.99%	4.43	5.91%	36.60	48.81%
H22_60	32.17	30.42	40.56%	62.59	83.45%	9.49	12.65%	41.66	55.54%	3.87	5.16%	36.04	48.05%
H22_61	32.17	17.01	22.67%	49.18	65.57%	6.35	8.46%	38.52	51.36%	2.86	3.81%	35.03	46.70%
H22_62	32.17	9.35	12.47%	41.52	55.36%	3.95	5.27%	36.12	48.16%	1.93	2.58%	34.10	45.47%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H22_63	32.17	7.97	10.62%	40.14	53.52%	3.68	4.91%	35.85	47.80%	1.88	2.51%	34.05	45.40%
H22_64	32.17	6.01	8.01%	38.18	50.91%	3.09	4.13%	35.26	47.02%	1.68	2.25%	33.85	45.14%
H22_65	32.17	6.53	8.71%	38.70	51.60%	2.99	3.99%	35.16	46.88%	1.77	2.36%	33.94	45.25%
H22_66	32.17	6.07	8.09%	38.24	50.99%	3.38	4.51%	35.55	47.40%	2.11	2.82%	34.28	45.71%
H22_67	32.17	9.34	12.45%	41.51	55.35%	3.11	4.15%	35.28	47.04%	1.93	2.58%	34.10	45.47%
H22_68	32.17	21.19	28.25%	53.36	71.14%	3.63	4.84%	35.80	47.73%	2.21	2.94%	34.38	45.84%
H22_69	32.17	31.78	42.37%	63.95	85.26%	6.17	8.23%	38.34	51.12%	3.33	4.44%	35.50	47.33%
H22_70	32.17	40.16	53.54%	72.33	96.44%	8.03	10.71%	40.20	53.60%	3.99	5.32%	36.16	48.21%
H22_71	32.17	41.27	55.03%	73.44	97.92%	8.92	11.90%	41.09	54.79%	3.82	5.09%	35.99	47.98%
H22_72	32.17	35.15	46.87%	67.32	89.76%	8.25	10.99%	40.42	53.89%	3.13	4.18%	35.30	47.07%
H22_73	32.17	31.92	42.56%	64.09	85.45%	7.48	9.97%	39.65	52.86%	2.80	3.73%	34.97	46.62%
H22_74	32.17	31.26	41.68%	63.43	84.57%	7.40	9.86%	39.57	52.76%	2.74	3.65%	34.91	46.55%
H22_75	32.17	29.07	38.76%	61.24	81.65%	7.05	9.40%	39.22	52.30%	2.44	3.25%	34.61	46.14%
H22_76	32.17	25.08	33.44%	57.25	76.34%	5.78	7.71%	37.95	50.61%	2.04	2.72%	34.21	45.61%
H22_77	32.17	21.86	29.15%	54.03	72.04%	5.11	6.82%	37.28	49.71%	1.77	2.36%	33.94	45.25%
H22_78	32.17	18.87	25.16%	51.04	68.06%	4.29	5.72%	36.46	48.62%	1.46	1.94%	33.63	44.83%
H22_79	32.17	16.41	21.87%	48.58	64.77%	3.68	4.91%	35.85	47.80%	1.30	1.74%	33.47	44.63%
H22_80	32.17	14.25	19.00%	46.42	61.89%	3.05	4.06%	35.22	46.96%	1.06	1.42%	33.23	44.31%
H22_81	32.17	23.27	31.03%	55.44	73.92%	4.99	6.66%	37.16	49.55%	1.66	2.21%	33.82	45.10%
H22_82	32.17	23.67	31.56%	55.84	74.45%	5.09	6.79%	37.26	49.68%	1.69	2.25%	33.86	45.15%
H22_83	32.17	22.49	29.98%	54.66	72.88%	4.84	6.45%	37.01	49.34%	1.58	2.11%	33.75	45.00%
H23_1	32.17	23.67	31.56%	55.84	74.45%	5.09	6.79%	37.26	49.68%	1.69	2.25%	33.86	45.15%
H23_2	32.17	19.64	26.18%	51.81	69.08%	4.29	5.72%	36.46	48.62%	1.39	1.85%	33.56	44.74%
H23_3	32.17	13.85	18.47%	46.02	61.36%	3.03	4.04%	35.20	46.93%	1.02	1.36%	33.19	44.25%
H24_1	27.82	16.37	21.82%	44.19	58.92%	3.93	5.24%	31.75	42.33%	1.37	1.82%	29.19	38.91%
H24_2	27.82	17.23	22.98%	45.05	60.07%	4.10	5.47%	31.92	42.56%	1.42	1.89%	29.24	38.98%
H24_3	27.82	22.45	29.93%	50.27	67.03%	4.93	6.57%	32.74	43.66%	1.64	2.18%	29.46	39.28%
H24_4	32.17	22.49	29.98%	54.66	72.88%	4.84	6.45%	37.01	49.34%	1.58	2.11%	33.75	45.00%

Receptor	Background (µg/m³)	Historical				Current				Current PL			
		PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)	PC (µg/m³)	PC/ EQS (%)	PEC (µg/m³)	PEC/ EQS (%)
H24_5	32.17	23.67	31.56%	55.84	74.45%	5.09	6.79%	37.26	49.68%	1.69	2.25%	33.86	45.15%
H25	30.29	3.01	4.01%	33.29	44.39%	0.71	0.95%	31.00	41.33%	0.23	0.31%	30.52	40.69%
H26	30.29	4.07	5.42%	34.35	45.80%	0.87	1.16%	31.15	41.54%	0.28	0.37%	30.57	40.75%
H27_1	32.17	14.57	19.42%	46.74	62.31%	3.06	4.08%	35.23	46.97%	0.94	1.25%	33.11	44.15%
H27_2	32.17	12.29	16.39%	44.46	59.28%	2.53	3.38%	34.70	46.27%	0.75	1.00%	32.92	43.90%
H27_3	32.17	11.41	15.21%	43.58	58.10%	2.35	3.13%	34.52	46.02%	0.69	0.92%	32.86	43.82%
H27_4	32.17	10.61	14.15%	42.78	57.04%	2.18	2.91%	34.35	45.80%	0.64	0.86%	32.81	43.75%
H27_5	32.17	9.53	12.70%	41.70	55.60%	1.95	2.60%	34.12	45.50%	0.59	0.79%	32.76	43.68%
H27_6	32.17	8.69	11.59%	40.86	54.48%	1.78	2.37%	33.95	45.27%	0.56	0.75%	32.73	43.64%
H27_7	32.17	7.79	10.38%	39.95	53.27%	1.59	2.12%	33.76	45.02%	0.52	0.69%	32.69	43.59%
H27_8	32.17	6.76	9.01%	38.93	51.91%	1.40	1.86%	33.57	44.75%	0.46	0.62%	32.63	43.51%
H27_9	32.17	6.54	8.71%	38.71	51.61%	1.37	1.83%	33.54	44.72%	0.44	0.58%	32.61	43.48%
H27_10	32.17	6.14	8.18%	38.31	51.07%	1.32	1.76%	33.49	44.66%	0.39	0.53%	32.56	43.42%
H27_11	32.17	5.52	7.36%	37.69	50.25%	1.21	1.61%	33.38	44.50%	0.36	0.48%	32.53	43.38%
H27_12	32.17	4.84	6.45%	37.00	49.34%	1.07	1.42%	33.24	44.32%	0.32	0.43%	32.49	43.32%
H27_13	22.98	4.22	5.62%	27.19	36.26%	0.94	1.26%	23.92	31.89%	0.29	0.38%	23.26	31.02%
H27_14	22.98	3.44	4.59%	26.42	35.23%	0.79	1.05%	23.76	31.68%	0.25	0.33%	23.22	30.96%
H27_15	21.24	2.53	3.37%	23.77	31.69%	0.60	0.79%	21.84	29.12%	0.21	0.28%	21.45	28.60%
H27_16	21.24	2.55	3.40%	23.79	31.72%	0.55	0.73%	21.79	29.05%	0.19	0.26%	21.44	28.58%
H27_17	21.24	2.51	3.35%	23.75	31.67%	0.56	0.74%	21.80	29.07%	0.20	0.27%	21.44	28.59%
H27_18	21.24	2.58	3.44%	23.82	31.76%	0.60	0.80%	21.84	29.12%	0.21	0.28%	21.45	28.60%
H27_19	21.24	3.00	4.00%	24.24	32.32%	0.72	0.96%	21.96	29.28%	0.26	0.35%	21.51	28.67%
H27_20	21.24	3.34	4.45%	24.58	32.77%	0.81	1.08%	22.05	29.40%	0.30	0.40%	21.54	28.72%
H27_21	21.24	3.32	4.43%	24.56	32.75%	0.79	1.06%	22.03	29.38%	0.29	0.38%	21.53	28.70%
H27_22	21.24	2.64	3.52%	23.88	31.84%	0.62	0.83%	21.86	29.15%	0.23	0.30%	21.47	28.62%
H27_23	21.24	1.97	2.62%	23.21	30.95%	0.46	0.61%	21.70	28.93%	0.16	0.22%	21.40	28.54%
H27_24	21.24	1.55	2.07%	22.79	30.39%	0.35	0.46%	21.59	28.78%	0.12	0.16%	21.36	28.48%

Table 25 Dispersion modelling results – annual mean nitrogen deposition at each ecological receptor for the Historical Scenario, based on maximum annual mean NOx concentration

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
SSSI (geological)	H1	Neepsend Railway Cutting	Tall	N/A	N/A	0.147	N/A	N/A	N/A
SSSI (geological)	H2	Neepsend Brickworks	Tall	N/A	N/A	0.044	N/A	N/A	N/A
SSSI (geological)	H3	Wadsley Fossil Forest	Tall	N/A	N/A	0.011	N/A	N/A	N/A
SAC/SPA	H4_1	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	18.7	0.001	18.70	0.02%	374%
SAC/SPA	H4_2	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.0	0.002	17.00	0.03%	340%
SAC/SPA	H4_3	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.5	0.002	17.50	0.03%	350%
SAC/SPA	H4_4	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.0	0.002	17.00	0.03%	340%
Ancient woodland	H5	Beeley Wood West	Tall	10	26.6	0.02	26.62	0.17%	266%
Ancient woodland	H6	Roe Wood	Tall	10	26.3	0.06	26.38	0.63%	264%
LNR	H7	Loxley & Wadsley Common	Tall	10	27.2	0.01	27.17	0.12%	272%
LNR/LWS	H8_1	Roe Woods & Crabtree Ponds	Tall	10	26.3	0.06	26.38	0.57%	264%
LNR/LWS	H8_2	Roe Woods & Crabtree Ponds	Tall	10	26.3	0.04	26.36	0.39%	264%
LWS	H9_1	Wadsley Park (formerly Middlewood Hospital)	Tall	10	27.0	0.01	27.03	0.11%	270%
LWS	H9_2	Wadsley Park (formerly Middlewood Hospital)	Tall	10	26.6	0.02	26.62	0.21%	266%
LWS	H10	Birley Edge & Back Edge	Short	5	15.1	0.01	15.13	0.28%	303%
LWS	H11	Loxley & Wadsley Commons	Short	5	15.7	0.01	15.69	0.13%	314%
LWS	H12	Parson Cross Park	Short	5	15.1	0.01	15.13	0.26%	303%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H13	Bole Hills, Walkley	Tall	10	27.0	0.02	27.04	0.19%	270%
LWS	H14	Oxspring Dam	Short	5	15.3	0.12	15.38	2.40%	308%
LWS	H15_1	Parkwood Springs	Short	5	15.1	0.05	15.17	1.04%	303%
LWS	H15_2	Parkwood Springs	Short	5	15.1	0.07	15.19	1.49%	304%
LWS	H15_3	Parkwood Springs	Short	5	15.1	0.08	15.20	1.68%	304%
LWS	H15_4	Parkwood Springs	Short	5	15.1	0.09	15.21	1.86%	304%
LWS	H15_5	Parkwood Springs	Short	5	15.1	0.11	15.23	2.23%	305%
LWS	H15_6	Parkwood Springs	Short	5	15.1	0.14	15.26	2.76%	305%
LWS	H15_7	Parkwood Springs	Short	5	15.1	0.18	15.30	3.53%	306%
LWS	H15_8	Parkwood Springs	Short	5	15.1	0.23	15.35	4.52%	307%
LWS	H16	Blake Street Nature Park	Tall	10	26.5	0.02	26.48	0.21%	265%
LWS	H17	Bagshaw Wood, Wadsley Bridge	Tall	10	26.6	0.05	26.65	0.48%	266%
LWS	H18	Broadhead Dam to Malin Bridge	Tall	10	26.9	0.03	26.91	0.28%	269%
LWS	H19_1	Malin Bridge to River Don	Short	5	15.5	0.02	15.56	0.30%	311%
LWS	H19_2	Malin Bridge to River Don	Short	5	15.5	0.02	15.56	0.35%	311%
LWS	H19_3	Malin Bridge to River Don	Short	5	15.4	0.02	15.42	0.46%	308%
LWS	H19_4	Malin Bridge to River Don	Short	5	15.4	0.09	15.49	1.81%	310%
LWS	H19_5	Malin Bridge to River Don	Short	5	15.4	0.05	15.45	1.06%	309%
LWS	H19_6	Malin Bridge to River Don	Short	5	15.1	0.05	15.17	1.06%	303%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H19_7	Malin Bridge to River Don	Short	5	15.4	0.08	15.48	1.69%	310%
LWS	H19_8	Malin Bridge to River Don	Short	5	15.4	0.10	15.50	2.07%	310%
LWS	H19_9	Malin Bridge to River Don	Short	5	15.4	0.10	15.50	2.07%	310%
LWS	H19_10	Malin Bridge to River Don	Short	5	15.4	0.10	15.50	2.05%	310%
LWS	H19_11	Malin Bridge to River Don	Short	5	15.4	0.10	15.50	2.02%	310%
LWS	H19_12	Malin Bridge to River Don	Short	5	15.4	0.10	15.50	1.97%	310%
LWS	H19_13	Malin Bridge to River Don	Short	5	15.4	0.09	15.49	1.88%	310%
LWS	H19_14	Malin Bridge to River Don	Short	5	15.4	0.09	15.49	1.77%	310%
LWS	H19_15	Malin Bridge to River Don	Short	5	15.4	0.04	15.44	0.81%	309%
LWS	H19_16	Malin Bridge to River Don	Short	5	15.4	0.05	15.45	1.03%	309%
LWS	H19_17	Malin Bridge to River Don	Short	5	15.4	0.08	15.48	1.61%	310%
LWS	H20	Lower Rivelin Valley	Tall	10	26.9	0.03	26.91	0.29%	269%
LWS	H21	Walkley Bank Plantation	Tall	10	26.9	0.02	26.90	0.24%	269%
LWS	H22_1	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.40	15.52	7.95%	310%
LWS	H22_2	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.37	15.49	7.46%	310%
LWS	H22_3	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.33	15.45	6.65%	309%
LWS	H22_4	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.01	15.13	0.27%	303%
LWS	H22_5	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.01	15.13	0.30%	303%
LWS	H22_6	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.02	15.14	0.34%	303%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_7	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.02	15.14	0.39%	303%
LWS	H22_8	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.02	15.14	0.45%	303%
LWS	H22_9	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.03	15.15	0.58%	303%
LWS	H22_10	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.04	15.16	0.83%	303%
LWS	H22_11	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.05	15.17	0.92%	303%
LWS	H22_12	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.05	15.17	1.04%	303%
LWS	H22_13	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.06	15.18	1.21%	304%
LWS	H22_14	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.07	15.19	1.48%	304%
LWS	H22_15	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.09	15.21	1.74%	304%
LWS	H22_16	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.11	15.23	2.15%	305%
LWS	H22_17	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.15	15.27	2.92%	305%
LWS	H22_18	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.16	15.28	3.22%	306%
LWS	H22_19	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.21	15.33	4.10%	307%
LWS	H22_20	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.29	15.41	5.79%	308%
LWS	H22_21	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.27	15.39	5.47%	308%
LWS	H22_22	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.36	15.48	7.20%	310%
LWS	H22_23	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.40	15.52	7.95%	310%
LWS	H22_24	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.49	15.75	9.70%	315%
LWS	H22_25	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.58	15.84	11.51%	317%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_26	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.67	15.93	13.37%	319%
LWS	H22_27	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.71	15.97	14.13%	319%
LWS	H22_28	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.53	15.79	10.69%	316%
LWS	H22_29	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.47	15.73	9.36%	315%
LWS	H22_30	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.45	15.71	9.07%	314%
LWS	H22_31	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.36	15.62	7.10%	312%
LWS	H22_32	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.35	15.61	7.05%	312%
LWS	H22_33	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.55	15.81	11.04%	316%
LWS	H22_34	Middle River Don: Hillsborough to City Centre	Short	5	15.3	1.17	16.43	23.30%	329%
LWS	H22_35	Middle River Don: Hillsborough to City Centre	Short	5	15.3	1.23	16.49	24.60%	330%
LWS	H22_36	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.79	16.05	15.89%	321%
LWS	H22_37	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.54	15.80	10.88%	316%
LWS	H22_38	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.49	15.75	9.79%	315%
LWS	H22_39	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.46	15.72	9.28%	314%
LWS	H22_40	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.48	15.74	9.51%	315%
LWS	H22_41	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.38	15.64	7.51%	313%
LWS	H22_42	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.29	15.55	5.81%	311%
LWS	H22_43	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.30	15.56	5.99%	311%
LWS	H22_44	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.25	15.51	4.95%	310%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_45	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.43%	310%
LWS	H22_46	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.19	15.45	3.72%	309%
LWS	H22_47	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.15	15.41	3.08%	308%
LWS	H22_48	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.13	15.39	2.52%	308%
LWS	H22_49	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.10	15.36	1.98%	307%
LWS	H22_50	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.08	15.34	1.69%	307%
LWS	H22_51	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.21	15.47	4.26%	309%
LWS	H22_52	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.37%	310%
LWS	H22_53	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.45%	310%
LWS	H22_54	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.24	15.50	4.72%	310%
LWS	H22_55	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.24	15.50	4.78%	310%
LWS	H22_56	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.40%	310%
LWS	H22_57	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.19	15.45	3.70%	309%
LWS	H22_58	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.16	15.42	3.11%	308%
LWS	H22_59	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.15	15.41	3.09%	308%
LWS	H22_60	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.13	15.39	2.62%	308%
LWS	H22_61	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.05	15.31	1.07%	306%
LWS	H22_62	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.02	15.28	0.45%	306%
LWS	H22_63	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.01	15.27	0.27%	305%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_64	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.01	15.27	0.15%	305%
LWS	H22_65	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.00	15.26	0.07%	305%
LWS	H22_66	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.01	15.27	0.20%	305%
LWS	H22_67	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.07	15.33	1.33%	307%
LWS	H22_68	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.39%	310%
LWS	H22_69	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.41	15.67	8.20%	313%
LWS	H22_70	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.51	15.77	10.15%	315%
LWS	H22_71	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.64	15.90	12.73%	318%
LWS	H22_72	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.61	15.87	12.23%	317%
LWS	H22_73	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.55	15.81	11.03%	316%
LWS	H22_74	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.49	15.75	9.87%	315%
LWS	H22_75	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.39	15.65	7.70%	313%
LWS	H22_76	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.31	15.57	6.24%	311%
LWS	H22_77	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.26	15.52	5.24%	310%
LWS	H22_78	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.22	15.48	4.33%	310%
LWS	H22_79	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.19	15.45	3.73%	309%
LWS	H22_80	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.14	15.40	2.84%	308%
LWS	H22_81	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.37	15.63	7.45%	313%
LWS	H22_82	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.37	15.63	7.50%	313%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_83	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.39	15.65	7.83%	313%
LWS	H23_1	Scraith Wood & Rawson Spring	Tall	10	26.6	0.75	27.35	7.50%	273%
LWS	H23_2	Scraith Wood & Rawson Spring	Tall	10	26.6	0.57	27.17	5.68%	272%
LWS	H23_3	Scraith Wood & Rawson Spring	Tall	10	26.6	0.30	26.90	3.00%	269%
LWS	H24_1	Wardsend Cemetery	Tall	10	26.5	0.54	27.00	5.45%	270%
LWS	H24_2	Wardsend Cemetery	Tall	10	26.5	0.66	27.12	6.65%	271%
LWS	H24_3	Wardsend Cemetery	Tall	10	26.5	0.79	27.25	7.95%	273%
LWS	H24_4	Wardsend Cemetery	Tall	10	26.6	0.78	27.38	7.83%	274%
LWS	H24_5	Wardsend Cemetery	Tall	10	26.6	0.75	27.35	7.50%	273%
LWS	H27_1	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.08	15.34	1.52%	307%
LWS	H27_2	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.07	15.33	1.35%	307%
LWS	H27_3	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.06	15.32	1.29%	306%
LWS	H27_4	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.06	15.32	1.21%	306%
LWS	H27_5	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.06	15.32	1.11%	306%
LWS	H27_6	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.05	15.31	1.02%	306%
LWS	H27_7	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.05	15.31	0.92%	306%
LWS	H27_8	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.04	15.30	0.73%	306%
LWS	H27_9	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.03	15.29	0.64%	306%
LWS	H27_10	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.03	15.29	0.56%	306%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H27_11	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.03	15.29	0.50%	306%
LWS	H27_12	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.02	15.28	0.45%	306%
LWS	H27_13	Upper River Don: Deepcar to Hillsborough	Short	5	15.4	0.02	15.42	0.40%	308%
LWS	H27_14	Upper River Don: Deepcar to Hillsborough	Short	5	15.4	0.02	15.42	0.37%	308%
LWS	H27_15	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.02	15.28	0.34%	306%
LWS	H27_16	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.02	15.28	0.31%	306%
LWS	H27_17	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.28%	305%
LWS	H27_18	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.28%	305%
LWS	H27_19	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.29%	305%
LWS	H27_20	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.30%	305%
LWS	H27_21	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.28%	305%
LWS	H27_22	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.25%	305%
LWS	H27_23	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.21%	305%
LWS	H27_24	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.01	15.27	0.18%	305%
LWS	H25	Norwood Allotments Woodlands	Tall	10	26.3	0.06	26.38	0.64%	264%
LWS	H26	Busk Meadow Woodland	Tall	10	26.3	0.07	26.39	0.73%	264%

Table 26 Dispersion modelling results – annual mean nitrogen deposition at each ecological receptor for the Current Scenario, based on maximum annual mean NOx concentration

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
SSSI (geological)	H1	Neepsend Railway Cutting	Tall	N/A	N/A	0.032	N/A	N/A	N/A
SSSI (geological)	H2	Neepsend Brickworks	Tall	N/A	N/A	0.009	N/A	N/A	N/A
SSSI (geological)	H3	Wadsley Fossil Forest	Tall	N/A	N/A	0.002	N/A	N/A	N/A
SAC/SPA	H4_1	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	18.7	0.0002	18.70	0.003%	374%
SAC/SPA	H4_2	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.0	0.0003	17.00	0.01%	340%
SAC/SPA	H4_3	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.5	0.0003	17.50	0.01%	350%
SAC/SPA	H4_4	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	5	17.0	0.0003	17.00	0.01%	340%
Ancient woodland	H5	Beeley Wood West	Tall	10	26.6	0.004	26.60	0.04%	266%
Ancient woodland	H6	Roe Wood	Tall	10	26.3	0.013	26.33	0.13%	263%
LNR	H7	Loxley & Wadsley Common	Tall	10	27.2	0.003	27.16	0.03%	272%
LNR/LWS	H8_1	Roe Woods & Crabtree Ponds	Tall	10	26.3	0.011	26.33	0.11%	263%
LNR/LWS	H8_2	Roe Woods & Crabtree Ponds	Tall	10	26.3	0.008	26.33	0.08%	263%
LWS	H9_1	Wadsley Park (formerly Middlewood Hospital)	Tall	10	27.0	0.002	27.02	0.02%	270%
LWS	H9_2	Wadsley Park (formerly Middlewood Hospital)	Tall	10	26.6	0.005	26.60	0.05%	266%
LWS	H10	Birley Edge & Back Edge	Short	5	15.1	0.003	15.12	0.06%	302%
LWS	H11	Loxley & Wadsley Commons	Short	5	15.7	0.001	15.68	0.03%	314%
LWS	H12	Parson Cross Park	Short	5	15.1	0.003	15.12	0.05%	302%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H13	Bole Hills, Walkley	Tall	10	27.0	0.004	27.02	0.04%	270%
LWS	H14	Oxspring Dam	Short	5	15.3	0.027	15.29	0.53%	306%
LWS	H15_1	Parkwood Springs	Short	5	15.1	0.011	15.13	0.23%	303%
LWS	H15_2	Parkwood Springs	Short	5	15.1	0.016	15.14	0.32%	303%
LWS	H15_3	Parkwood Springs	Short	5	15.1	0.018	15.14	0.36%	303%
LWS	H15_4	Parkwood Springs	Short	5	15.1	0.020	15.14	0.40%	303%
LWS	H15_5	Parkwood Springs	Short	5	15.1	0.024	15.14	0.48%	303%
LWS	H15_6	Parkwood Springs	Short	5	15.1	0.030	15.15	0.59%	303%
LWS	H15_7	Parkwood Springs	Short	5	15.1	0.039	15.16	0.77%	303%
LWS	H15_8	Parkwood Springs	Short	5	15.1	0.050	15.17	1.00%	303%
LWS	H16	Blake Street Nature Park	Tall	10	26.5	0.004	26.46	0.04%	265%
LWS	H17	Bagshaw Wood, Wadsley Bridge	Tall	10	26.6	0.011	26.61	0.11%	266%
LWS	H18	Broadhead Dam to Malin Bridge	Tall	10	26.9	0.006	26.89	0.06%	269%
LWS	H19_1	Malin Bridge to River Don	Short	5	15.5	0.003	15.54	0.07%	311%
LWS	H19_2	Malin Bridge to River Don	Short	5	15.5	0.004	15.54	0.08%	311%
LWS	H19_3	Malin Bridge to River Don	Short	5	15.4	0.005	15.41	0.10%	308%
LWS	H19_4	Malin Bridge to River Don	Short	5	15.4	0.020	15.42	0.40%	308%
LWS	H19_5	Malin Bridge to River Don	Short	5	15.4	0.011	15.41	0.23%	308%
LWS	H19_6	Malin Bridge to River Don	Short	5	15.1	0.012	15.13	0.23%	303%
LWS	H19_7	Malin Bridge to River Don	Short	5	15.4	0.019	15.42	0.38%	308%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H19_8	Malin Bridge to River Don	Short	5	15.4	0.023	15.42	0.46%	308%
LWS	H19_9	Malin Bridge to River Don	Short	5	15.4	0.023	15.42	0.46%	308%
LWS	H19_10	Malin Bridge to River Don	Short	5	15.4	0.023	15.42	0.46%	308%
LWS	H19_11	Malin Bridge to River Don	Short	5	15.4	0.022	15.42	0.45%	308%
LWS	H19_12	Malin Bridge to River Don	Short	5	15.4	0.022	15.42	0.43%	308%
LWS	H19_13	Malin Bridge to River Don	Short	5	15.4	0.021	15.42	0.41%	308%
LWS	H19_14	Malin Bridge to River Don	Short	5	15.4	0.019	15.42	0.39%	308%
LWS	H19_15	Malin Bridge to River Don	Short	5	15.4	0.009	15.41	0.18%	308%
LWS	H19_16	Malin Bridge to River Don	Short	5	15.4	0.012	15.41	0.23%	308%
LWS	H19_17	Malin Bridge to River Don	Short	5	15.4	0.018	15.42	0.37%	308%
LWS	H20	Lower Rivelin Valley	Tall	10	26.9	0.007	26.89	0.07%	269%
LWS	H21	Walkley Bank Plantation	Tall	10	26.9	0.005	26.89	0.05%	269%
LWS	H22_1	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.089	15.21	1.78%	304%
LWS	H22_2	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.084	15.20	1.69%	304%
LWS	H22_3	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.075	15.19	1.49%	304%
LWS	H22_4	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.003	15.12	0.06%	302%
LWS	H22_5	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.003	15.12	0.06%	302%
LWS	H22_6	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.004	15.12	0.07%	302%
LWS	H22_7	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.004	15.12	0.08%	302%
LWS	H22_8	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.005	15.12	0.10%	302%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_9	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.007	15.13	0.13%	303%
LWS	H22_10	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.009	15.13	0.19%	303%
LWS	H22_11	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.011	15.13	0.21%	303%
LWS	H22_12	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.012	15.13	0.24%	303%
LWS	H22_13	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.014	15.13	0.28%	303%
LWS	H22_14	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.017	15.14	0.33%	303%
LWS	H22_15	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.020	15.14	0.39%	303%
LWS	H22_16	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.024	15.14	0.49%	303%
LWS	H22_17	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.033	15.15	0.66%	303%
LWS	H22_18	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.036	15.16	0.73%	303%
LWS	H22_19	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.046	15.17	0.93%	303%
LWS	H22_20	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.067	15.19	1.33%	304%
LWS	H22_21	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.063	15.18	1.26%	304%
LWS	H22_22	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.084	15.20	1.68%	304%
LWS	H22_23	Middle River Don: Hillsborough to City Centre	Short	5	15.1	0.093	15.21	1.86%	304%
LWS	H22_24	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.117	15.38	2.34%	308%
LWS	H22_25	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.141	15.40	2.82%	308%
LWS	H22_26	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.168	15.43	3.35%	309%
LWS	H22_27	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.176	15.44	3.52%	309%
LWS	H22_28	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.119	15.38	2.39%	308%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_29	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.097	15.36	1.94%	307%
LWS	H22_30	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.089	15.35	1.78%	307%
LWS	H22_31	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.076	15.34	1.52%	307%
LWS	H22_32	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.088	15.35	1.76%	307%
LWS	H22_33	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.150	15.41	3.00%	308%
LWS	H22_34	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.311	15.57	6.22%	311%
LWS	H22_35	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.253	15.51	5.05%	310%
LWS	H22_36	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.155	15.41	3.10%	308%
LWS	H22_37	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.117	15.38	2.33%	308%
LWS	H22_38	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.111	15.37	2.21%	307%
LWS	H22_39	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.110	15.37	2.20%	307%
LWS	H22_40	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.116	15.38	2.31%	308%
LWS	H22_41	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.100	15.36	2.00%	307%
LWS	H22_42	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.082	15.34	1.64%	307%
LWS	H22_43	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.082	15.34	1.64%	307%
LWS	H22_44	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.065	15.32	1.29%	306%
LWS	H22_45	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.056	15.32	1.13%	306%
LWS	H22_46	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.046	15.31	0.93%	306%
LWS	H22_47	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.036	15.30	0.72%	306%
LWS	H22_48	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.029	15.29	0.58%	306%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_49	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.022	15.28	0.44%	306%
LWS	H22_50	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.019	15.28	0.38%	306%
LWS	H22_51	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.057	15.32	1.15%	306%
LWS	H22_52	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.059	15.32	1.18%	306%
LWS	H22_53	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.061	15.32	1.22%	306%
LWS	H22_54	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.066	15.33	1.31%	307%
LWS	H22_55	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.067	15.33	1.35%	307%
LWS	H22_56	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.064	15.32	1.28%	306%
LWS	H22_57	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.056	15.32	1.13%	306%
LWS	H22_58	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.050	15.31	0.99%	306%
LWS	H22_59	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.048	15.31	0.96%	306%
LWS	H22_60	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.039	15.30	0.79%	306%
LWS	H22_61	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.019	15.28	0.38%	306%
LWS	H22_62	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.011	15.27	0.22%	305%
LWS	H22_63	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.008	15.27	0.15%	305%
LWS	H22_64	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.005	15.26	0.09%	305%
LWS	H22_65	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.002	15.26	0.04%	305%
LWS	H22_66	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.003	15.26	0.05%	305%
LWS	H22_67	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.013	15.27	0.25%	305%
LWS	H22_68	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.037	15.30	0.75%	306%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_69	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.075	15.33	1.49%	307%
LWS	H22_70	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.100	15.36	1.99%	307%
LWS	H22_71	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.150	15.41	3.00%	308%
LWS	H22_72	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.143	15.40	2.86%	308%
LWS	H22_73	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.129	15.39	2.58%	308%
LWS	H22_74	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.120	15.38	2.40%	308%
LWS	H22_75	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.091	15.35	1.82%	307%
LWS	H22_76	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.072	15.33	1.44%	307%
LWS	H22_77	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.060	15.32	1.19%	306%
LWS	H22_78	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.048	15.31	0.97%	306%
LWS	H22_79	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.041	15.30	0.83%	306%
LWS	H22_80	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.032	15.29	0.63%	306%
LWS	H22_81	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.082	15.34	1.64%	307%
LWS	H22_82	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.084	15.34	1.67%	307%
LWS	H22_83	Middle River Don: Hillsborough to City Centre	Short	5	15.3	0.087	15.35	1.74%	307%
LWS	H23_1	Scraith Wood & Rawson Spring	Tall	10	26.6	0.167	26.77	1.67%	268%
LWS	H23_2	Scraith Wood & Rawson Spring	Tall	10	26.6	0.127	26.73	1.27%	267%
LWS	H23_3	Scraith Wood & Rawson Spring	Tall	10	26.6	0.066	26.67	0.66%	267%
LWS	H24_1	Wardsend Cemetery	Tall	10	26.5	0.122	26.58	1.22%	266%
LWS	H24_2	Wardsend Cemetery	Tall	10	26.5	0.149	26.61	1.49%	266%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H24_3	Wardsend Cemetery	Tall	10	26.5	0.178	26.64	1.78%	266%
LWS	H24_4	Wardsend Cemetery	Tall	10	26.6	0.174	26.77	1.74%	268%
LWS	H24_5	Wardsend Cemetery	Tall	10	26.6	0.167	26.77	1.67%	268%
LWS	H27_1	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.017	15.28	0.34%	306%
LWS	H27_2	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.015	15.28	0.30%	306%
LWS	H27_3	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.014	15.27	0.29%	305%
LWS	H27_4	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.014	15.27	0.27%	305%
LWS	H27_5	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.012	15.27	0.25%	305%
LWS	H27_6	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.011	15.27	0.23%	305%
LWS	H27_7	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.010	15.27	0.21%	305%
LWS	H27_8	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.008	15.27	0.16%	305%
LWS	H27_9	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.007	15.27	0.14%	305%
LWS	H27_10	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.006	15.27	0.13%	305%
LWS	H27_11	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.006	15.27	0.11%	305%
LWS	H27_12	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.005	15.27	0.10%	305%
LWS	H27_13	Upper River Don: Deepcar to Hillsborough	Short	5	15.4	0.005	15.40	0.09%	308%
LWS	H27_14	Upper River Don: Deepcar to Hillsborough	Short	5	15.4	0.004	15.40	0.08%	308%
LWS	H27_15	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.004	15.26	0.08%	305%
LWS	H27_16	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.004	15.26	0.07%	305%
LWS	H27_17	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.07%	305%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Minimum Critical Load (CL) (kg N/ha/yr)	Estimated nutrient N deposition (kgN/ha-year)				
					Existing Deposition	PC	PEC	PC/CL (%)	PEC/CL (%)
LWS	H27_18	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.06%	305%
LWS	H27_19	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.07%	305%
LWS	H27_20	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.07%	305%
LWS	H27_21	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.06%	305%
LWS	H27_22	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.003	15.26	0.06%	305%
LWS	H27_23	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.002	15.26	0.05%	305%
LWS	H27_24	Upper River Don: Deepcar to Hillsborough	Short	5	15.3	0.002	15.26	0.04%	305%
LWS	H25	Norwood Allotments Woodlands	Tall	10	26.3	0.013	26.33	0.13%	263%
LWS	H26	Busk Meadow Woodland	Tall	10	26.3	0.015	26.33	0.15%	263%

Table 27 Dispersion modelling results – annual mean acid deposition at each ecological receptor for the Historical Scenario

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
SSSI (geological)	H1	Neepsend Railway Cutting	Tall	N/A	N/A	N/A	N/A	N/A	0.010	N/A	N/A	N/A
SSSI (geological)	H2	Neepsend Brickworks	Tall	N/A	N/A	N/A	N/A	N/A	0.003	N/A	N/A	N/A
SSSI (geological)	H3	Wadsley Fossil Forest	Tall	N/A	N/A	N/A	N/A	N/A	0.001	N/A	N/A	N/A
SAC/SPA	H4_1	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.330	0.270	0.000	1.600	0.01%	374%
SAC/SPA	H4_2	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.220	0.230	0.000	1.450	0.03%	339%
SAC/SPA	H4_3	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.250	0.240	0.000	1.490	0.03%	348%
SAC/SPA	H4_4	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.220	0.230	0.000	1.450	0.03%	339%
Ancient woodland	H5	Beeley Wood West	Tall	3.255	0.357	3.612	1.970	-	0.001	1.971	0.03%	55%
Ancient woodland	H6	Roe Wood	Tall	3.102	0.357	3.460	1.960	-	0.004	1.964	0.13%	57%
LNR	H7	Loxley & Wadsley Common	Tall	1.750	0.142	1.892	1.990	-	0.001	1.991	0.05%	105%
LNR/LWS	H8_1	Roe Woods & Crabtree Ponds	Tall	3.102	0.357	3.460	1.960	-	0.004	1.964	0.12%	57%
LNR/LWS	H8_2	Roe Woods & Crabtree Ponds	Tall	3.131	0.357	3.488	1.940	-	0.003	1.943	0.08%	56%
LWS	H9_1	Wadsley Park (formerly Middlewood Hospital)	Tall	3.273	0.357	3.630	1.990	-	0.001	1.991	0.02%	55%
LWS	H9_2	Wadsley Park (formerly Middlewood Hospital)	Tall	3.255	0.357	3.612	1.970	-	0.001	1.971	0.04%	55%
LWS	H10	Birley Edge & Back Edge	Short	1.780	0.438	2.218	1.120	-	0.001	1.121	0.04%	51%
LWS	H11	Loxley & Wadsley Commons	Short	0.630	0.223	0.853	1.140	-	0.000	1.140	0.05%	134%
LWS	H12	Parson Cross Park	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.04%	51%
LWS	H13	Bole Hills, Walkley	Tall	1.751	0.142	1.893	1.980	-	0.001	1.981	0.07%	105%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H14	Oxspring Dam	Short	1.780	0.438	2.218	1.120	-	0.009	1.129	0.39%	51%
LWS	H15_1	Parkwood Springs	Short	1.780	0.438	2.218	1.110	-	0.004	1.114	0.17%	50%
LWS	H15_2	Parkwood Springs	Short	1.780	0.438	2.218	1.110	-	0.005	1.115	0.24%	50%
LWS	H15_3	Parkwood Springs	Short	1.780	0.438	2.218	1.110	-	0.006	1.116	0.27%	50%
LWS	H15_4	Parkwood Springs	Short	1.780	0.438	2.218	1.110	-	0.007	1.117	0.30%	50%
LWS	H15_5	Parkwood Springs	Short	1.780	0.438	2.218	1.120	-	0.008	1.128	0.36%	51%
LWS	H15_6	Parkwood Springs	Short	1.780	0.438	2.218	1.120	-	0.010	1.130	0.44%	51%
LWS	H15_7	Parkwood Springs	Short	1.780	0.438	2.218	1.120	-	0.013	1.133	0.57%	51%
LWS	H15_8	Parkwood Springs	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.73%	51%
LWS	H16	Blake Street Nature Park	Tall	3.248	0.357	3.605	1.950	-	0.002	1.952	0.04%	54%
LWS	H17	Bagshaw Wood, Wadsley Bridge	Tall	3.246	0.357	3.603	1.970	-	0.003	1.973	0.09%	55%
LWS	H18	Broadhead Dam to Malin Bridge	Tall	1.745	0.142	1.887	1.970	-	0.002	1.972	0.11%	105%
LWS	H19_1	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.001	1.131	0.13%	133%
LWS	H19_2	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.001	1.131	0.15%	133%
LWS	H19_3	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.002	1.132	0.19%	133%
LWS	H19_4	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.006	1.136	0.76%	133%
LWS	H19_5	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.004	1.134	0.44%	133%
LWS	H19_6	Malin Bridge to River Don	Short	1.780	0.438	2.218	1.110	-	0.004	1.114	0.17%	50%
LWS	H19_7	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.006	1.136	0.71%	133%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H19_8	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.87%	133%
LWS	H19_9	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.87%	133%
LWS	H19_10	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.86%	133%
LWS	H19_11	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.84%	133%
LWS	H19_12	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.82%	133%
LWS	H19_13	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.007	1.137	0.79%	133%
LWS	H19_14	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.006	1.136	0.74%	133%
LWS	H19_15	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.003	1.133	0.34%	133%
LWS	H19_16	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.004	1.134	0.43%	133%
LWS	H19_17	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130	-	0.006	1.136	0.67%	133%
LWS	H20	Lower Rivelin Valley	Tall	1.745	0.142	1.887	1.970	-	0.002	1.972	0.11%	105%
LWS	H21	Walkley Bank Plantation	Tall	1.745	0.142	1.887	1.970	-	0.002	1.972	0.09%	104%
LWS	H22_1	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.028	1.148	1.28%	52%
LWS	H22_2	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.027	1.147	1.20%	52%
LWS	H22_3	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.024	1.144	1.07%	52%
LWS	H22_4	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.001	1.111	0.04%	50%
LWS	H22_5	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.001	1.111	0.05%	50%
LWS	H22_6	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.001	1.111	0.05%	50%
LWS	H22_7	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.001	1.111	0.06%	50%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_8	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.002	1.112	0.07%	50%
LWS	H22_9	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.002	1.112	0.09%	50%
LWS	H22_10	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.003	1.113	0.13%	50%
LWS	H22_11	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.003	1.113	0.15%	50%
LWS	H22_12	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.004	1.114	0.17%	50%
LWS	H22_13	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.004	1.114	0.20%	50%
LWS	H22_14	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.005	1.115	0.24%	50%
LWS	H22_15	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.006	1.116	0.28%	50%
LWS	H22_16	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.008	1.118	0.35%	50%
LWS	H22_17	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110	-	0.010	1.120	0.47%	51%
LWS	H22_18	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.011	1.131	0.52%	51%
LWS	H22_19	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.015	1.135	0.66%	51%
LWS	H22_20	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.021	1.141	0.93%	51%
LWS	H22_21	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.019	1.139	0.88%	51%
LWS	H22_22	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.026	1.146	1.16%	52%
LWS	H22_23	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.028	1.148	1.28%	52%
LWS	H22_24	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.035	1.155	1.56%	52%
LWS	H22_25	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.041	1.161	1.85%	52%
LWS	H22_26	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.048	1.168	2.15%	53%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_27	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.050	1.170	2.27%	53%
LWS	H22_28	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.038	1.158	1.72%	52%
LWS	H22_29	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.033	1.153	1.51%	52%
LWS	H22_30	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.032	1.152	1.46%	52%
LWS	H22_31	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.025	1.145	1.14%	52%
LWS	H22_32	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.025	1.145	1.13%	52%
LWS	H22_33	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.039	1.159	1.78%	52%
LWS	H22_34	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.083	1.203	3.75%	54%
LWS	H22_35	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.088	1.208	3.96%	54%
LWS	H22_36	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.057	1.177	2.56%	53%
LWS	H22_37	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.039	1.159	1.75%	52%
LWS	H22_38	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.035	1.155	1.57%	52%
LWS	H22_39	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.033	1.153	1.49%	52%
LWS	H22_40	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.034	1.154	1.53%	52%
LWS	H22_41	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.027	1.147	1.21%	52%
LWS	H22_42	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.021	1.141	0.93%	51%
LWS	H22_43	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.021	1.141	0.96%	51%
LWS	H22_44	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.018	1.138	0.80%	51%
LWS	H22_45	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.71%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_46	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.013	1.133	0.60%	51%
LWS	H22_47	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.011	1.131	0.50%	51%
LWS	H22_48	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.009	1.129	0.41%	51%
LWS	H22_49	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.007	1.127	0.32%	51%
LWS	H22_50	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.006	1.126	0.27%	51%
LWS	H22_51	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.015	1.135	0.68%	51%
LWS	H22_52	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.70%	51%
LWS	H22_53	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.72%	51%
LWS	H22_54	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.017	1.137	0.76%	51%
LWS	H22_55	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.017	1.137	0.77%	51%
LWS	H22_56	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.71%	51%
LWS	H22_57	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.013	1.133	0.60%	51%
LWS	H22_58	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.011	1.131	0.50%	51%
LWS	H22_59	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.011	1.131	0.50%	51%
LWS	H22_60	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.009	1.129	0.42%	51%
LWS	H22_61	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.004	1.124	0.17%	51%
LWS	H22_62	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.002	1.122	0.07%	51%
LWS	H22_63	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.001	1.121	0.04%	51%
LWS	H22_64	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.001	1.121	0.02%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_65	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.000	1.120	0.01%	51%
LWS	H22_66	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.001	1.121	0.03%	51%
LWS	H22_67	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.005	1.125	0.21%	51%
LWS	H22_68	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.016	1.136	0.71%	51%
LWS	H22_69	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.029	1.149	1.32%	52%
LWS	H22_70	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.036	1.156	1.63%	52%
LWS	H22_71	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.045	1.165	2.05%	53%
LWS	H22_72	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.044	1.164	1.97%	52%
LWS	H22_73	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.039	1.159	1.77%	52%
LWS	H22_74	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.035	1.155	1.59%	52%
LWS	H22_75	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.027	1.147	1.24%	52%
LWS	H22_76	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.022	1.142	1.00%	51%
LWS	H22_77	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.019	1.139	0.84%	51%
LWS	H22_78	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.015	1.135	0.70%	51%
LWS	H22_79	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.013	1.133	0.60%	51%
LWS	H22_80	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.010	1.130	0.46%	51%
LWS	H22_81	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.027	1.147	1.20%	52%
LWS	H22_82	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.027	1.147	1.21%	52%
LWS	H22_83	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120	-	0.028	1.148	1.26%	52%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H23_1	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960	-	0.053	2.013	1.48%	56%
LWS	H23_2	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960	-	0.041	2.001	1.12%	55%
LWS	H23_3	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960	-	0.021	1.981	0.59%	55%
LWS	H24_1	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970	-	0.039	2.009	1.08%	56%
LWS	H24_2	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970	-	0.047	2.017	1.32%	56%
LWS	H24_3	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970	-	0.057	2.027	1.57%	56%
LWS	H24_4	Wardsend Cemetery	Tall	3.248	0.357	3.605	1.960	-	0.056	2.016	1.55%	56%
LWS	H24_5	Wardsend Cemetery	Tall	3.248	0.357	3.605	1.960	-	0.053	2.013	1.48%	56%
LWS	H27_1	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.005	1.125	0.24%	51%
LWS	H27_2	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.005	1.125	0.22%	51%
LWS	H27_3	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.005	1.125	0.21%	51%
LWS	H27_4	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.004	1.124	0.19%	51%
LWS	H27_5	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.004	1.124	0.18%	51%
LWS	H27_6	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.004	1.124	0.16%	51%
LWS	H27_7	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.003	1.123	0.15%	51%
LWS	H27_8	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.003	1.123	0.12%	51%
LWS	H27_9	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.002	1.122	0.10%	51%
LWS	H27_10	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.002	1.122	0.09%	51%
LWS	H27_11	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.002	1.122	0.08%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H27_12	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120	-	0.002	1.122	0.07%	51%
LWS	H27_13	Upper River Don: Deepcar to Hillsborough	Short	0.630	0.223	0.853	1.130	-	0.001	1.131	0.17%	133%
LWS	H27_14	Upper River Don: Deepcar to Hillsborough	Short	0.630	0.223	0.853	1.130	-	0.001	1.131	0.15%	133%
LWS	H27_15	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.05%	51%
LWS	H27_16	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.05%	51%
LWS	H27_17	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.05%	51%
LWS	H27_18	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.04%	51%
LWS	H27_19	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.05%	51%
LWS	H27_20	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.05%	51%
LWS	H27_21	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.04%	51%
LWS	H27_22	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.04%	51%
LWS	H27_23	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.03%	51%
LWS	H27_24	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130	-	0.001	1.131	0.03%	51%
LWS	H25	Norwood Allotments Woodlands	Tall	3.102	0.357	3.460	1.960	-	0.005	1.965	0.13%	57%
LWS	H26	Busk Meadow Woodland	Tall	3.102	0.357	3.460	1.960	-	0.005	1.965	0.15%	57%

Note: the APIS search by location function only provides total existing deposition, and not split out between nitrogen and sulphur. Therefore, the existing deposition rate provided for the local wildlife sited is the total existing deposition rate.

Table 28 Dispersion modelling results – annual mean acid deposition at each ecological receptor for the Current Scenario

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
SSSI (geological)	H1	Neepsend Railway Cutting	Tall	N/A	N/A	N/A	N/A	N/A	0.002	N/A	N/A	N/A
SSSI (geological)	H2	Neepsend Brickworks	Tall	N/A	N/A	N/A	N/A	N/A	0.001	N/A	N/A	N/A
SSSI (geological)	H3	Wadsley Fossil Forest	Tall	N/A	N/A	N/A	N/A	N/A	0.000	N/A	N/A	N/A
SAC/SPA	H4_1	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.330	0.270	0.000	1.600	0.003%	374%
SAC/SPA	H4_2	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.220	0.230	0.000	1.450	0.005%	339%
SAC/SPA	H4_3	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.250	0.240	0.000	1.490	0.005%	348%
SAC/SPA	H4_4	South Pennine Moors SAC / Peak District Moors (South Pennine Moors Phase 1) SPA	Short	0.210	0.178	0.428	1.220	0.230	0.000	1.450	0.005%	339%
Ancient woodland	H5	Beeley Wood West	Tall	3.255	0.357	3.612	1.970		0.000	1.970	0.008%	55%
Ancient woodland	H6	Roe Wood	Tall	3.102	0.357	3.460	1.960		0.001	1.961	0.026%	57%
LNR	H7	Loxley & Wadsley Common	Tall	1.750	0.142	1.892	1.990		0.000	1.990	0.010%	105%
LNR/LWS	H8_1	Roe Woods & Crabtree Ponds	Tall	3.102	0.357	3.460	1.960		0.001	1.961	0.024%	57%
LNR/LWS	H8_2	Roe Woods & Crabtree Ponds	Tall	3.131	0.357	3.488	1.940		0.001	1.941	0.016%	56%
LWS	H9_1	Wadsley Park (formerly Middlewood Hospital)	Tall	3.273	0.357	3.630	1.990		0.000	1.990	0.005%	55%
LWS	H9_2	Wadsley Park (formerly Middlewood Hospital)	Tall	3.255	0.357	3.612	1.970		0.000	1.970	0.009%	55%
LWS	H10	Birley Edge & Back Edge	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.010%	51%
LWS	H11	Loxley & Wadsley Commons	Short	0.630	0.223	0.853	1.140		0.000	1.140	0.011%	134%
LWS	H12	Parson Cross Park	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.008%	51%
LWS	H13	Bole Hills, Walkley	Tall	1.751	0.142	1.893	1.980		0.000	1.980	0.015%	105%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H14	Oxspring Dam	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.085%	51%
LWS	H15_1	Parkwood Springs	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.036%	50%
LWS	H15_2	Parkwood Springs	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.051%	50%
LWS	H15_3	Parkwood Springs	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.058%	50%
LWS	H15_4	Parkwood Springs	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.064%	50%
LWS	H15_5	Parkwood Springs	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.078%	51%
LWS	H15_6	Parkwood Springs	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.096%	51%
LWS	H15_7	Parkwood Springs	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.124%	51%
LWS	H15_8	Parkwood Springs	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.160%	51%
LWS	H16	Blake Street Nature Park	Tall	3.248	0.357	3.605	1.950		0.000	1.950	0.009%	54%
LWS	H17	Bagshaw Wood, Wadsley Bridge	Tall	3.246	0.357	3.603	1.970		0.001	1.971	0.022%	55%
LWS	H18	Broadhead Dam to Malin Bridge	Tall	1.745	0.142	1.887	1.970		0.000	1.970	0.024%	104%
LWS	H19_1	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.000	1.130	0.028%	133%
LWS	H19_2	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.000	1.130	0.033%	133%
LWS	H19_3	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.000	1.130	0.043%	133%
LWS	H19_4	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.166%	133%
LWS	H19_5	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.096%	133%
LWS	H19_6	Malin Bridge to River Don	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.037%	50%
LWS	H19_7	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.160%	133%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H19_8	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.002	1.132	0.194%	133%
LWS	H19_9	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.002	1.132	0.193%	133%
LWS	H19_10	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.002	1.132	0.190%	133%
LWS	H19_11	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.002	1.132	0.186%	133%
LWS	H19_12	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.002	1.132	0.181%	133%
LWS	H19_13	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.173%	133%
LWS	H19_14	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.162%	133%
LWS	H19_15	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.077%	133%
LWS	H19_16	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.098%	133%
LWS	H19_17	Malin Bridge to River Don	Short	0.630	0.223	0.853	1.130		0.001	1.131	0.153%	133%
LWS	H20	Lower Rivelin Valley	Tall	1.745	0.142	1.887	1.970		0.000	1.970	0.025%	104%
LWS	H21	Walkley Bank Plantation	Tall	1.745	0.142	1.887	1.970		0.000	1.970	0.020%	104%
LWS	H22_1	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.286%	51%
LWS	H22_2	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.271%	51%
LWS	H22_3	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.240%	51%
LWS	H22_4	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.009%	50%
LWS	H22_5	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.010%	50%
LWS	H22_6	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.012%	50%
LWS	H22_7	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.014%	50%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_8	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.016%	50%
LWS	H22_9	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.000	1.110	0.021%	50%
LWS	H22_10	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.030%	50%
LWS	H22_11	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.034%	50%
LWS	H22_12	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.038%	50%
LWS	H22_13	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.045%	50%
LWS	H22_14	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.054%	50%
LWS	H22_15	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.001	1.111	0.064%	50%
LWS	H22_16	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.002	1.112	0.078%	50%
LWS	H22_17	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.110		0.002	1.112	0.106%	50%
LWS	H22_18	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.117%	51%
LWS	H22_19	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.150%	51%
LWS	H22_20	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.214%	51%
LWS	H22_21	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.202%	51%
LWS	H22_22	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.270%	51%
LWS	H22_23	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.007	1.127	0.300%	51%
LWS	H22_24	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.008	1.128	0.376%	51%
LWS	H22_25	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.010	1.130	0.453%	51%
LWS	H22_26	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.012	1.132	0.539%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_27	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.013	1.133	0.567%	51%
LWS	H22_28	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.009	1.129	0.384%	51%
LWS	H22_29	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.007	1.127	0.311%	51%
LWS	H22_30	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.287%	51%
LWS	H22_31	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.245%	51%
LWS	H22_32	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.283%	51%
LWS	H22_33	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.011	1.131	0.483%	51%
LWS	H22_34	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.022	1.142	0.999%	51%
LWS	H22_35	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.018	1.138	0.813%	51%
LWS	H22_36	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.011	1.131	0.498%	51%
LWS	H22_37	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.008	1.128	0.375%	51%
LWS	H22_38	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.008	1.128	0.355%	51%
LWS	H22_39	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.008	1.128	0.354%	51%
LWS	H22_40	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.008	1.128	0.372%	51%
LWS	H22_41	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.007	1.127	0.321%	51%
LWS	H22_42	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.264%	51%
LWS	H22_43	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.264%	51%
LWS	H22_44	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.208%	51%
LWS	H22_45	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.181%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_46	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.149%	51%
LWS	H22_47	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.116%	51%
LWS	H22_48	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.093%	51%
LWS	H22_49	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.071%	51%
LWS	H22_50	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.060%	51%
LWS	H22_51	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.185%	51%
LWS	H22_52	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.190%	51%
LWS	H22_53	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.196%	51%
LWS	H22_54	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.211%	51%
LWS	H22_55	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.216%	51%
LWS	H22_56	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.206%	51%
LWS	H22_57	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.181%	51%
LWS	H22_58	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.160%	51%
LWS	H22_59	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.154%	51%
LWS	H22_60	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.127%	51%
LWS	H22_61	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.062%	51%
LWS	H22_62	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.036%	51%
LWS	H22_63	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.024%	51%
LWS	H22_64	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.015%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H22_65	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.006%	51%
LWS	H22_66	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.008%	51%
LWS	H22_67	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.040%	51%
LWS	H22_68	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.120%	51%
LWS	H22_69	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.240%	51%
LWS	H22_70	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.007	1.127	0.320%	51%
LWS	H22_71	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.011	1.131	0.482%	51%
LWS	H22_72	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.010	1.130	0.461%	51%
LWS	H22_73	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.009	1.129	0.415%	51%
LWS	H22_74	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.009	1.129	0.385%	51%
LWS	H22_75	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.293%	51%
LWS	H22_76	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.005	1.125	0.232%	51%
LWS	H22_77	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.004	1.124	0.192%	51%
LWS	H22_78	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.156%	51%
LWS	H22_79	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.003	1.123	0.133%	51%
LWS	H22_80	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.002	1.122	0.102%	51%
LWS	H22_81	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.264%	51%
LWS	H22_82	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.269%	51%
LWS	H22_83	Middle River Don: Hillsborough to City Centre	Short	1.780	0.438	2.218	1.120		0.006	1.126	0.280%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H23_1	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960		0.012	1.972	0.330%	55%
LWS	H23_2	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960		0.009	1.969	0.251%	55%
LWS	H23_3	Scraith Wood & Rawson Spring	Tall	3.248	0.357	3.605	1.960		0.005	1.965	0.130%	54%
LWS	H24_1	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970		0.009	1.979	0.241%	55%
LWS	H24_2	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970		0.011	1.981	0.296%	55%
LWS	H24_3	Wardsend Cemetery	Tall	3.244	0.357	3.601	1.970		0.013	1.983	0.352%	55%
LWS	H24_4	Wardsend Cemetery	Tall	3.248	0.357	3.605	1.960		0.012	1.972	0.345%	55%
LWS	H24_5	Wardsend Cemetery	Tall	3.248	0.357	3.605	1.960		0.012	1.972	0.330%	55%
LWS	H27_1	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.055%	51%
LWS	H27_2	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.049%	51%
LWS	H27_3	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.046%	51%
LWS	H27_4	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.044%	51%
LWS	H27_5	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.040%	51%
LWS	H27_6	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.037%	51%
LWS	H27_7	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.033%	51%
LWS	H27_8	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.026%	51%
LWS	H27_9	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.001	1.121	0.023%	51%
LWS	H27_10	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.020%	51%
LWS	H27_11	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.018%	51%

Type	Ref.	Habitat Receptors (description)	Short / Tall Vegetation Type	Critical Load (CL) (kEqH+/ha-year)			Acid deposition (keq/ha/year)					
				CLMaxS	CLMinN	CLMaxN	Existing Deposition (N)*	Existing Deposition (S)*	PC (Nitrogen)	PEC	PC/CL (%)	PEC/CL (%)
LWS	H27_12	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.120		0.000	1.120	0.016%	51%
LWS	H27_13	Upper River Don: Deepcar to Hillsborough	Short	0.630	0.223	0.853	1.130		0.000	1.130	0.038%	133%
LWS	H27_14	Upper River Don: Deepcar to Hillsborough	Short	0.630	0.223	0.853	1.130		0.000	1.130	0.034%	133%
LWS	H27_15	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.012%	51%
LWS	H27_16	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.011%	51%
LWS	H27_17	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.010%	51%
LWS	H27_18	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.010%	51%
LWS	H27_19	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.011%	51%
LWS	H27_20	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.011%	51%
LWS	H27_21	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.010%	51%
LWS	H27_22	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.009%	51%
LWS	H27_23	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.008%	51%
LWS	H27_24	Upper River Don: Deepcar to Hillsborough	Short	1.780	0.438	2.218	1.130		0.000	1.130	0.007%	51%
LWS	H25	Norwood Allotments Woodlands	Tall	3.102	0.357	3.460	1.960		0.001	1.961	0.027%	57%
LWS	H26	Busk Meadow Woodland	Tall	3.102	0.357	3.460	1.960		0.001	1.961	0.031%	57%

Note: the APIS search by location function only provides total existing deposition and not split out between nitrogen and sulphur. Therefore, the existing deposition rate provided for the local wildlife sited is the total existing deposition rate.

About the study authors

PESLConsulting is a specialist provider of niche environmental, technical and management consulting services to utility and industry clients. The business was founded in 2014 and brings together a team of professional environmental and business consultants with a diverse range of skills; we pride ourselves in the flexibility of our teams and the quality of our deliverables, but also in offering value for money for our clients. From our initial core business area of providing specialist assessment and advice to support environmental investment decisions we have broadened our service offering to include wider asset management and business strategy consulting. We work extensively in utility, manufacturing and service sectors for clients including: National Grid, Cadent, Yorkshire Water, GKN, Suez, Costain and Jacobs.

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Project Environmental Solutions

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