

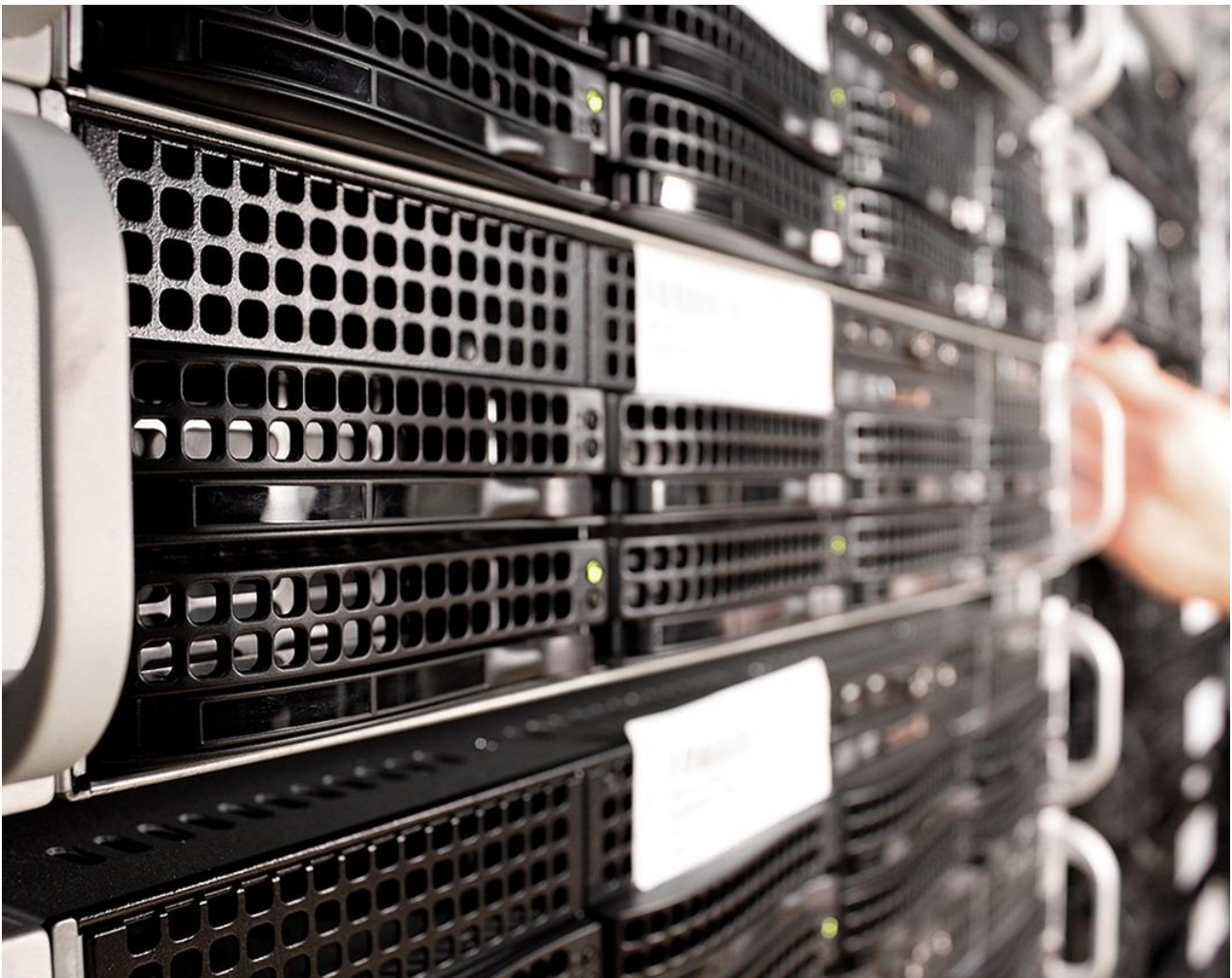
Virtus Holdco Ltd

London 14 Data Centre, Prologis Park Heathrow, Hayes

Air Quality Assessment - Environmental Permit Application

Reference: 294760-EP-AQ

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Job number 294760-00

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Executive Summary

Arup has undertaken an Air Quality Assessment to accompany the Environmental Permit application of a proposed data centre by Virtus Holdco Ltd (VIRTUS) at the London 14, or LON14 site located within Prologis Park, Hayes (henceforth referred to as the Proposed Development) in the London Borough of Hillingdon (LBH).

This report reviews the existing baseline and considers and assesses the potential air quality impacts that could arise due to the use of the standby back-up generators (SBG) through the regular testing and maintenance routines. This assessment has also considered the potential impacts from an ‘emergency’ scenario, in the unlikely event of complete network grid failure.

The assessment considers the potential effects on sensitive human and ecological receptors, as well as considering the nearby Air Quality Management Area (AQMA), which has been declared by LBH. The Proposed Development is also located within this AQMA.

A summary of the assessment scenarios is provided below.

- Testing Scenario 1 – monthly testing scenario consisting of monthly 15 minute “switch on” offload tests with all generators to be tested individually, running at 10% load (assumed without Selective Catalytic Reduction (SCR) abatement being effective). This is to be undertaken once a month, for 11 months of the year (on the 12th month, the annual test - Testing Scenario 2 will be run instead).
- Testing Scenario 2 – annual testing scenario representative of a full service onload test, consisting of an initial 20 minutes “warm up” at 100% load (prior to SCR taking effect), immediately followed by 120 minutes at 75% load utilising the benefits of SCR. This is to be undertaken once a year on the 12th month of the year in place of Testing scenario 1.
- Emergency Scenario – an unlikely emergency scenario with all generators running together at 100% load for 72 hours to simulate a theoretical mains emergency failure.

Extensive work was undertaken in the planning report to reduce the potential air quality impacts as far as reasonably practical. The SBG solution chosen included SCR emissions abatement to reduce potential air quality impacts. The SBG emissions for oxides of nitrogen (NO_x) also meet those considered by the EA to be BAT (<2000mg/Nm³), prior to SCR taking effect with a further emission reduction (c.95%).

Following the detailed dispersion modelling assessment of each of the testing scenarios, it is considered that there would be **no significant effects as a result of the testing** of the SBGs on human receptors. There are predicted exceedances of the critical level for annual and daily mean NO_x for all scenarios. However, these exceedances are due to high background concentrations, which in all cases is already above the critical level. Therefore, due to the frequency of the testing scenarios and the fact the SBGs will not be continuously operational (5 hours per year) the potential impact on sensitive ecological receptors from the Proposed Development is deemed to be **insignificant**.

The Emergency Scenario assessment included a statistical analysis using the hypergeometric distribution to assess the probability of exceeding the NO₂ hourly mean Environmental Assessment Level (EAL). This assessment found that the probability of an exceedance for hourly mean NO₂ was less than 1%, indicating the probability of an **exceedance would be highly unlikely** according to Environment Agency guidance. The Emergency Scenario was also compared against the US Acute Exposure Guideline Levels (AEGs) for NO₂, where no exceedances were predicted. Additionally, the risk of this scenario occurring is very unlikely based on electrical grid reliability for the area and inbuilt design resilience.

1. Introduction

1.1 Overview

Ove Arup & Partners Ltd (Arup) has been commissioned by VIRTUS (henceforth referred to as ‘the Operator’) to prepare an Air Quality Assessment (AQA) to accompany a bespoke application for an Environmental Permit (EP) for the London 14, or LON14 data centre.

The EP is for the standby back-up generators at the LON14 data centre and directly associated activities only, not for the whole of the data centre.

The application is made by VIRTUS Holdco Limited which is the legal entity that will be responsible for operating the generating installation.

1.2 Background

The Proposed Development would provide a data centre by refurbishing the existing warehouse and construction of a new utilities’ gantry, office and other ancillary spaces. The three-tier gantry will be constructed to the immediate west of the existing building to accommodate power and cooling plant to serve the data centre.

The Proposed Development will house 16 containerised generators stand-by backup generators (SBG) for emergency back-up purposes, with a combined thermal input capacity of 110 MWth, for the on-site stand-by production of electricity in the event of an emergency interruption of grid-supplied power. These generators will be located west of the gantry area in a service yard. All back-up generators will be run individually for maintenance tests throughout the year and will exhaust through individual exhaust flues.

1.3 Site Location

The Proposed Development is located within Prologis Park, Hayes, West Drayton UB7 9FN and falls within the administrative boundary of the LBH. The Proposed Development comprises commercial and industrial land, measuring approximately 22,000m².

The Proposed Development is located between Hayes and West Drayton, approximately 1km north of the M4 and 3.1km north of London Heathrow airport. The primary access to the Proposed Development is gained via Stockley Road (A408) into Prologis Park (Prologis Park West London), which runs north-south from the junction 4 exit on the M4 up into Hillingdon.

The Proposed Development is screened by mature trees and hedgerows along its eastern boundary, which is located in proximity to a residential housing estate on Nine Acres Close situated in the nearby town of Hayes. There is no through access for traffic between the Proposed Development and Nine Acres Close except for buses.

The north and western edges of the Proposed Development are bound by rail lines that comprise sections of the Elizabeth Line and Great Western Main Line that run between the nearby West Drayton and Hayes & Harlington Stations. The spur that runs down the western edge of the site is connected to the nearby London Heathrow airport, approximately 3.5km south of the Site.

The eastern, northern and southern boundaries of the Proposed Development are delineated by treelines to screen the Proposed Development from the surrounding area, particularly the residential areas to the east and south. The western boundary of the Proposed Development contains minimal screening as it borders other industrial developments in Prologis Park. However, the wider Prologis Park is screened by a combination of fencing and trees.

There is an Air Quality Management Area (AQMA), known as the Hillingdon AQMA. The AQMA was declared in 2003 due to exceedances of the annual mean air quality standards for nitrogen dioxide (NO₂). The Proposed Development is within this AQMA.

1.4 Purpose and Structure

This report considers and assesses the likely significant effects of the site on the environment with respect to air quality. Air quality studies are concerned with the presence of airborne pollutants in the atmosphere.

The EP application is for a data centre, principally the operational testing of SBGs only. As such, the main pollutants of concern related to diesel generators for local air quality are oxides of nitrogen (NO_x) including nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter (PM_{10} and $\text{PM}_{2.5}$).

With regards to emissions from the back-up generators, the potential effects of CO emissions are not considered to be of primary concern but have been assessed for completeness with reference to the national Air Quality Standards (AQS).

The report also assesses the potential impact of ammonia (NH_3) arising from the use of Selective Catalytic Reduction (SCR) on the environment from the SBGs.

Figure 1 Site Location



2. Air Quality Standards and Guidelines

A brief summary of the most relevant standards and guidelines relating to this assessment are set out below. Further details of air quality standards, legislation, planning and permitting policy and guidance are provided in Appendix A.

2.1 Air Quality Standards

In this assessment, the term ‘Air Quality Standard’ (AQS)¹ has been used to refer to the national limit values. Table 1 below sets out the national air quality standards for NO₂, PM₁₀ and PM_{2.5}, the main pollutants of concern in the UK and the local area, together with additional pollutants emitted from the back-up generators (CO and NH₃).

Table 1 Air quality standards

Pollutant	Averaging Period	Limit value / objective
Nitrogen dioxide (NO ₂)	Annual mean	40µg/m ³
	1-hour mean	200µg/m ³ not to be exceeded more than 18 times a year (99.79 th percentile)
Particulate matter (PM ₁₀)	Annual mean	40µg/m ³
	24-hour mean	50µg/m ³ not to be exceeded more than 35 times a year (90.41 st percentile)
Fine particulate matter (PM _{2.5})	Annual mean	20µg/m ³
		12µg/m ³ to be achieved by 2028* ^[1]
		10µg/m ³ to be achieved by 2040*
Carbon monoxide (CO)	8-hour mean	10,000µg/m ³
Ammonia (NH ₃)	Annual mean	180µg/m ³ ^[2]
	1-hour mean	2500µg/m ³ ^[2]
<p>Note:</p> <p>* The Environmental Targets (Fine Particular Matter) (England) Regulations 2023 updated in 2023, to state that the “the annual mean level of PM_{2.5} in ambient air must be equal to or less than 10 µg/m³ (“the target level”)” by 31st December 2040². The Environmental Improvement Plan (2023) sets an interim target of 12 µg/m³, to be achieved by 31 January 2028.</p> <p>^[1] For the purpose of this assessment, a limit value of 12µg/m³ for PM_{2.5} has been used.</p> <p>^[2] Old EAL derivation method from EH40/2001 OEL</p>		

¹ The Air Quality Standards (Amendment) Regulations 2016, SI 2016/1184

² Defra, 2023. Chief Planners Newsletter. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140170/03_Chief_Planners_Newsletter_March_2023.pdf [Accessed July 2023]

2.2 Ecological legislation

The Conservation of Habitats and Species Regulations 2010³ transposed the European Council Directive 92/43/EEC⁴ (Habitats Directive) into law in England and Wales. These required the introduction of a range of measures for the protection of habitats and species.

The Habitats Regulations requires the competent authority first to evaluate whether operation of the Proposed Development is likely to give rise to a significant effect on the European site (such as Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites.) (Habitats Regulation Assessment screening). Where this is the case, it has to carry out an ‘appropriate assessment’ in order to determine whether the Proposed Development would adversely affect the integrity of the European site.

Critical levels

There are specific objective pollutant concentrations for vegetation called ‘critical levels’, which are shown in

Table 2. These are concentrations below which harmful effects are unlikely to occur. The critical levels apply to locations more than 20km from towns with more than 250,000 inhabitants or more than 5km from other built-up areas, industrial installations or motorways.

The objectives in the legislation are used to assess the potential impacts upon any sensitive ecosystems. They will be referred to as critical levels in the remainder of this report.

Table 2 Critical levels for the protection of ecosystems

Pollutant	Averaging period	Standard
Oxides of nitrogen (NO _x)	Annual mean	30µg/m ³
	Daily mean	75µg/m ³
NH ₃ (for ecosystems where lichens and bryophytes (including mosses, liverworts and hornworts are present)	Annual mean	1µg/m ³
NH ₃ (for all other ecosystems)	Annual mean	3µg/m ³

³ UK The Conservation of Habitats and Species Regulations (2010) No. 490

⁴ European Council Directive (92/43/EEC) of 21 May 1992, on the conservation of natural habitats and of wild fauna and flora

3. Methodology

3.1 Assessment Approach

The overall approach to the air quality assessment comprised the following:

- a review of the existing air quality conditions at, and in the vicinity of, the Proposed Development;
- an assessment of the potential changes in air quality arising from the operation of the Proposed Development; and
- formulation of mitigation measures, where appropriate, to ensure any adverse effects on air quality are minimised.

The assessment for the Proposed Development has been carried out in a manner, that where practicable is consistent with previous air quality assessments that have been undertaken for the client for similar data centre sites. Data has also been used from the planning report⁵ that has been previously submitted for the Proposed Development, such as the buildings and receptors for consistency.

3.2 Consultation

A pre-application meeting was held with the Environment Agency in August 2023 to outline the overall approach of the air quality assessment and highlight the steps taken to minimise the impacts from emissions to air from the SBG.

3.3 Methodology of Baseline Assessment

Existing or baseline ambient air quality refers to the concentrations of relevant substances that are already present in the environment. These occur from various sources, such as industrial processes, commercial and domestic activities, traffic and natural sources.

A desk-based review of the following data sources has been undertaken to determine baseline conditions of air quality around the Proposed Development:

- Air Quality Annual Status Report (ASR)⁶;
- the Department for Environment, Food & Rural Affairs (Defra) Local Air Quality Management website⁷;
- the UK Air Information Resource website⁸; and
- the Environment Agency (EA) register on industrial installations⁹ and pollution inventory¹⁰.

⁵ AECOM (2022) Virtus DC6 Air Quality Assessment Report

⁶ London Borough of Hillingdon (2022) Air Quality Annual Status Report for 2021. Available at: http://www.hillingdon-air.info/pdf/LB_Hillingdon_ASR_2022.pdf [Accessed: August 2023].

⁷ Defra, Local Air Quality Management website. Available at: <http://laqm.defra.gov.uk/> [Accessed: August 2023]

⁸ Defra, <http://uk-air.defra.gov.uk> [Accessed: August 2023]

⁹ Environment Agency, <https://environment.data.gov.uk/public-register/view/search-industrial-installations> [Accessed: August 2023]

¹⁰ Environment Agency, Pollution Inventory, <https://data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory> [Accessed: August 2023]

3.4 Operational Phase

Back-up Generators

The Proposed Development comprises 16 containerised diesel generators, for back-up emergency purposes in the event of a power grid failure. Each generator has an individual flue terminating at 14.45m above ground; the locations of which are provided in Figure 2. The generator details are provided in Appendix B.

The assessment has examined the changes in pollutant concentrations in the surrounding area that would result from the operational testing and maintenance of the diesel generators. The industry standard dispersion model ADMS 6 (version 6.0.0.1)¹¹ has been used to calculate concentrations of NO₂, PM₁₀ and PM_{2.5}, CO and NH₃ at sensitive receptors.

SCR

The 16 diesel generators that have been included in the Proposed Development in case of power grid failure have Selective Catalytic Reduction (SCR) installed on them. Based on the design specifications, it is estimated to take 20 minutes for the SCR to warm-up before becoming effective. Once the SCR is effective, it is proposed that the NO_x emissions from the SBGs will be reduced by 95%. The use of SCR will therefore only be applicable to Testing Scenario 2 and the Emergency Scenario, as the running period of Testing Scenario 1 is only 15 minutes, which is shorter than the required warm-up period.

When assessing the NO_x emissions resulting from Testing Scenario 2, a time weighted average is used for the NO_x emission rate. This is comprised of 20 minutes unabated running at 100% load before dropping to 75% once the SCR is effective. This results in the following adjustment to the emission rate for calculating the time weighted average: SCR NO_x emissions rate = (100% load unabated NO_x emission rate * 0.333) + (75% load unabated NO_x emission rate * 0.667).

Exhaust gas mixing

At LONDON14, the SBG exhaust emissions combine with the cooling air stream and discharge through the same flue stack. The resulting effect is a significant dilution of the SBG emission concentrations through a combination with the unpolluted cooling air at the point of release to atmosphere.

To maintain consistency with previously EA agreed air quality assessment methodologies undertaken for VIRTUS' other data centre sites, the following methodology has been used with regards to exhaust gas mixing.

The SBG for the Proposed Development each have an air intake, driven by a fixed volume fan, which is used in part for generator cooling and in part input air to the generator combustion process. The air streams are then recombined within the individual exhaust stacks prior to emission to air and comprise a mixture of:

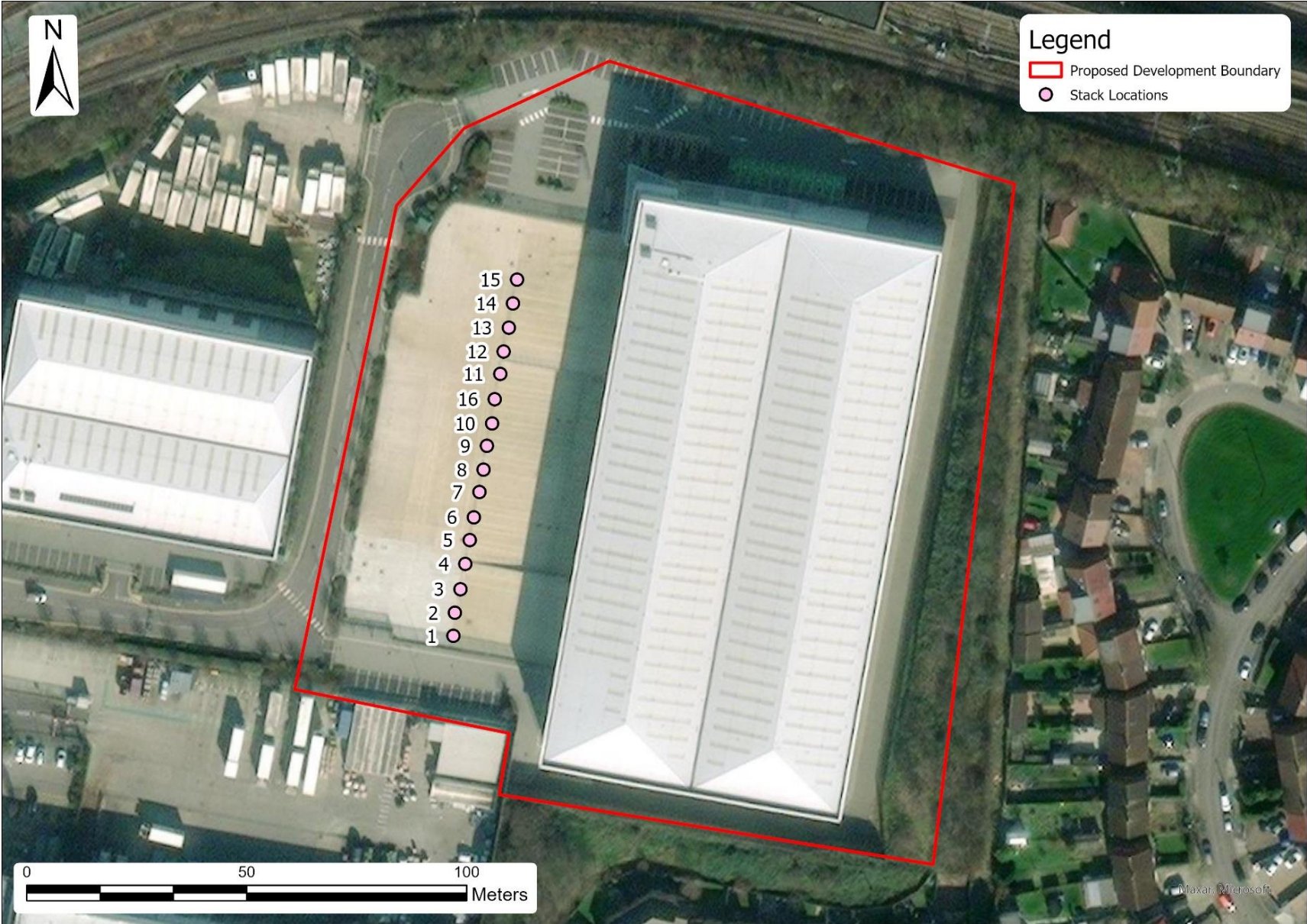
- generator exhaust gas, which is between 350°C and 500°C depending on the load; and
- engine cooling air, which has been raised to around 40°C above ambient temperature.

The air intake has an initial, fixed, volume flow rate of 35.5m³/s (at ambient temperature), and is assumed for modelling purposes to be at a temperature of 11.9°C. This temperature is the average annual temperature at Heathrow.

It has been estimated by VIRTUS that the temperature of the engine cooling air will be raised by 40°C by the cooling process. The exhaust gases therefore comprise a mixture of bypass cooling air at 51.9°C (40°C + 11.9°C) and generator exhaust gases at 350°C+ (depending on engine load). These gases are assumed to mix perfectly as ideal gases within the exhaust stack with no loss of energy through the walls and conservation of internal energy. The resulting volume and temperature of the exhaust gases, and the calculations for these, are provided in Appendix B.

¹¹ Cambridge Environmental Research Consultants (CERC), ADMS 5, <http://www.cerc.co.uk/environmental-software/ADMS-model.html>

Figure 2 Stack locations



Assessment Scenarios

The scenarios detailed in Table 3 have been assessed, following the information provided following the previous air quality assessments completed. Full details for each of the testing scenarios can be found in Appendix B.

Table 3 Assessment scenarios

Scenarios	Operating profile	Description
Testing Scenario 1: routine off-load testing / maintenance	15-minute run per month for 11 months of the year, equating to 2.75 hours per year for all generators combined.	All generators tested individually on a monthly basis, run at 10% load for 15 minutes for 11 months of the year.
Testing Scenario 2: routine full service on-load test	All generators run at 100% loads for 20 minutes followed by 75% load for 120 minutes once per year.	All generators tested individually once per year on the 12 th month. This will be 20 minutes at 100% load for the SCR to warm-up and then 40 minutes at 75% load utilising SCR once it has warmed up. For this scenario, 1 hour is being used as the worst case hour to include the SCR warm up period.
Emergency Scenario: emergency operation	A single event of all 16 generators running for 72 hours continuously.	A single unlikely event where all 16 generators will operate at 100% load for up to 72 hours due to a total grid failure.

Modelling long-term concentrations for testing scenarios (Testing Scenario 1 and 2)

The long-term air quality standards are only relevant to planned operations (testing and maintenance). The resulting predicted annual mean concentrations were adjusted to the actual operating hours. For Scenario 1, the following factor was used to adjust the annual mean concentrations, since each generator is run for 2.75 hours per year ($2.75 \div 8,760 = 0.0003$) following EA guidance¹².

The same principle applies for Scenario 2, where all generators are tested for 20 minutes at 100% load, followed by 120 minutes at 75% load, once per year on the 12th month. This resulted in the following factor to adjust the annual mean concentrations for a run time of 2 hours per year, ($2 \div 8760 = 0.0002$) following EA guidance¹².

Modelling short-term concentrations for testing scenarios (Testing Scenario 1 and 2)

There are short-term air quality standards for NO₂ and PM₁₀. The standards are given as a permitted annual number of exceedances of a threshold concentration which can be expressed as an equivalent percentile. The NO₂ hourly mean standard (200µg/m³), not to be exceeded more than 18 times a year, can be expressed at the 99.79th percentile of the hourly mean Predicted Environmental Concentration (PEC). PEC is the sum of the contribution from the process, Process Contribution (PC), and the background concentration. The PM₁₀ daily mean (50µg/m³), not to be exceeded more than 35 times a year, can be expressed as the 90.41st percentile daily mean PEC.

An adjustment factor for the actual operating hours was also applied to Testing Scenario 1 and 2 for the short-term air quality standards for daily NO_x and PM₁₀. For Testing Scenario 1, this factor was 0.11 ($2.75 \div 24$), whilst for Scenario 2 it was 0.09 ($2.33 \div 24$) following EA guidance¹².

¹² Environment Agency (2019) Specified generators: dispersion modelling assessment. Available at: <https://www.gov.uk/guidance/specified-generators-dispersion-modelling-assessment> [Accessed September 2023]

Long-term concentrations for Emergency Scenario

For emergency scenarios, long-term concentrations are not assessed. This is because this scenario would only run for a limited period and is not a regularly scheduled test, so no annual averages have been calculated.

Modelling short-term concentrations for Emergency Scenario

Modelling the generators for predicting hourly mean NO₂ and daily mean PM₁₀ concentrations for the Emergency Scenario is complex as the timing of an Emergency Scenario cannot be predetermined. In order to estimate the absolute worst-case concentrations resulting from generators operating in an emergency, the modelling has assumed that 16 generators operate continuously throughout the year. This allows for the emissions to coincide with all meteorological conditions that occur throughout the year and then the most conservative short-term impacts are extracted from these predictions. This approach is very pessimistic as it is highly improbable that, in the case of the NO₂ hourly mean for instance, the generators will be operating during meteorological conditions that represent the 19 hours of the year that give rise to the highest concentrations for each receptor. Therefore, a further statistical analysis was carried out using the hypergeometric distribution to determine the probability of exceeding the NO₂ hourly mean standard.

Statistical analysis of the NO₂ hourly mean standard for Emergency Scenario

The hypergeometric distribution has been used to assess the likelihood of NO₂ hourly mean exceedance hours coinciding with the estimated hours of emergency operation. This makes it possible to calculate the probability of exceeding the NO₂ hourly mean standard (not to be exceeded more than 18 times a year), taking into account the number of operating hours.

The probability of randomly selecting 19 or more exceedance hours (failures) from the operating hours (N) is the same as selecting a non-exceedance hour within the operating hours (successes, N – 19 hours). Based on this relationship, the hypergeometric analysis calculates the probability (P) of exceedance in a year (more than 18 exceedances of the 200µg/m³ NO₂ hourly mean standard). The probability (P) is then multiplied by a safety factor of 2.5 following the EA guidance¹². The calculation is:

$$P = \sum_{i=0}^{N-19} \frac{\binom{K}{i} \binom{M-K}{N-i}}{\binom{M}{N}}$$

Where:

N= operating hours per year (i.e., 72 hours of assumed emergency operation);

M= the operating envelope (i.e., the number of hours per year, 8,760 hours);

i= the number of sample successes required (i.e., the number of non-exceedance hours considering the total operating hours, i.e. 72 – 19 = 53 hours); and

K= The total number of non-exceedance hours in the operating envelope (i.e., 8,760 hours minus the number of hours that the limit in the model is expected to be exceeded).

Sensitive Receptors

Human receptors

The human receptors used in this assessment are consistent with those used in the planning report⁵.

Pollutant concentrations have been predicted at existing sensitive receptors. The assessment has been undertaken to consider the predicted concentrations in areas where the air quality standards set out in Table 1 apply. The long-term annual mean objective applies at locations where sensitive receptors are located, these would include residential properties, hospitals and schools.

The short-term hourly mean objective applies at locations where members of the public may be expected to be present for at least an hour.

The closest identified receptors are on Nine Acres Close (receptors R6-R16 and R94-R96) approximately 20m south and south-east of the Proposed Development. There are also receptors within close proximity on Denbigh Drive, approximately 30m east (receptors R0 – R4).

Human receptors have been modelled at the façades of nearby existing buildings as these are closest to the pollutant sources, and have been included at 1.5m above ground level (corresponding to the average height of human exposure).

Details of the assessed human receptors are given in Appendix C.1 and their locations are shown in Figure 3.

Figure 3 Modelled human receptors



Ecological Receptors

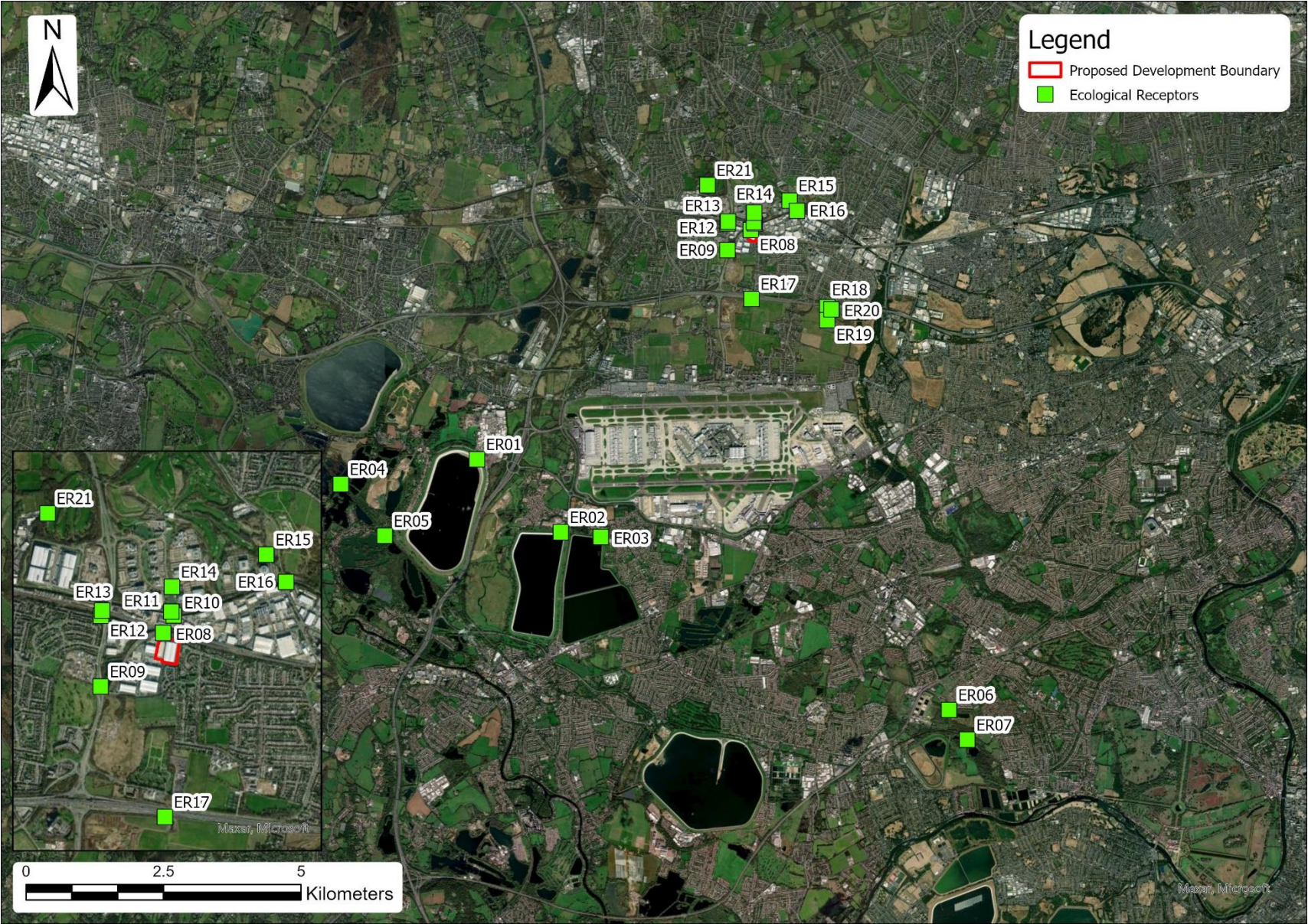
Ecological receptors have been reviewed within 10km of the Proposed Development for internationally designated sites and within 2km for locally or nationally designated sites, in accordance with EA guidance¹². This review has identified a number of designated sites for ecological assessment. The ecological sites identified by the EA for inclusion in this assessment have also been included in the assessment for the Proposed Development.

The nearest ecological sites to the Proposed Development are a number of Local Wildlife Sites (LWS), which are Carp Ponds and Broads Dock, Stockley Road Rough, London's Canals, Stockley Business Park Lakes and Meadows and Iron Bridge Road Railsides ('the Piggeries'). These LWS's are all within 500m of the Proposed Development. There are also other LWS's within 2km of the Proposed Development but no other ecological designations within 2km.

There is also a Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar site within 10km of the Proposed Development, which is the 'South West London Waterbodies'. This site is composed of several waterbodies, ranging from approximately 6.6km from to site to approximately 9.9km from the site.

The location of the ecological receptors is shown in Appendix C.2 and presented in Figure 4. Receptor points have been placed at the closest point of the ecological site to the proposed stacks. Ecological receptors have been modelled at a height of 0m, representative of ground level.

Figure 4 Modelled ecological receptors



3.5 Dispersion Model Setup

The industry standard dispersion model ADMS 6 (version 6.0.0.1) was used for this assessment. The model has been widely validated for point sources and is accepted by the industry and the EA as ‘fit for purpose’ for air quality assessments of combustion plant and stack releases. The model incorporates the latest understanding of boundary layer meteorology and dispersion.

Meteorological Data

Meteorological data used in this assessment were measured at London Heathrow Airport meteorological station over the period 1st January 2018 to 31st December 2022 (inclusive). London Heathrow Airport is located approximately 400m south of the Proposed Development and was chosen due to its proximity.

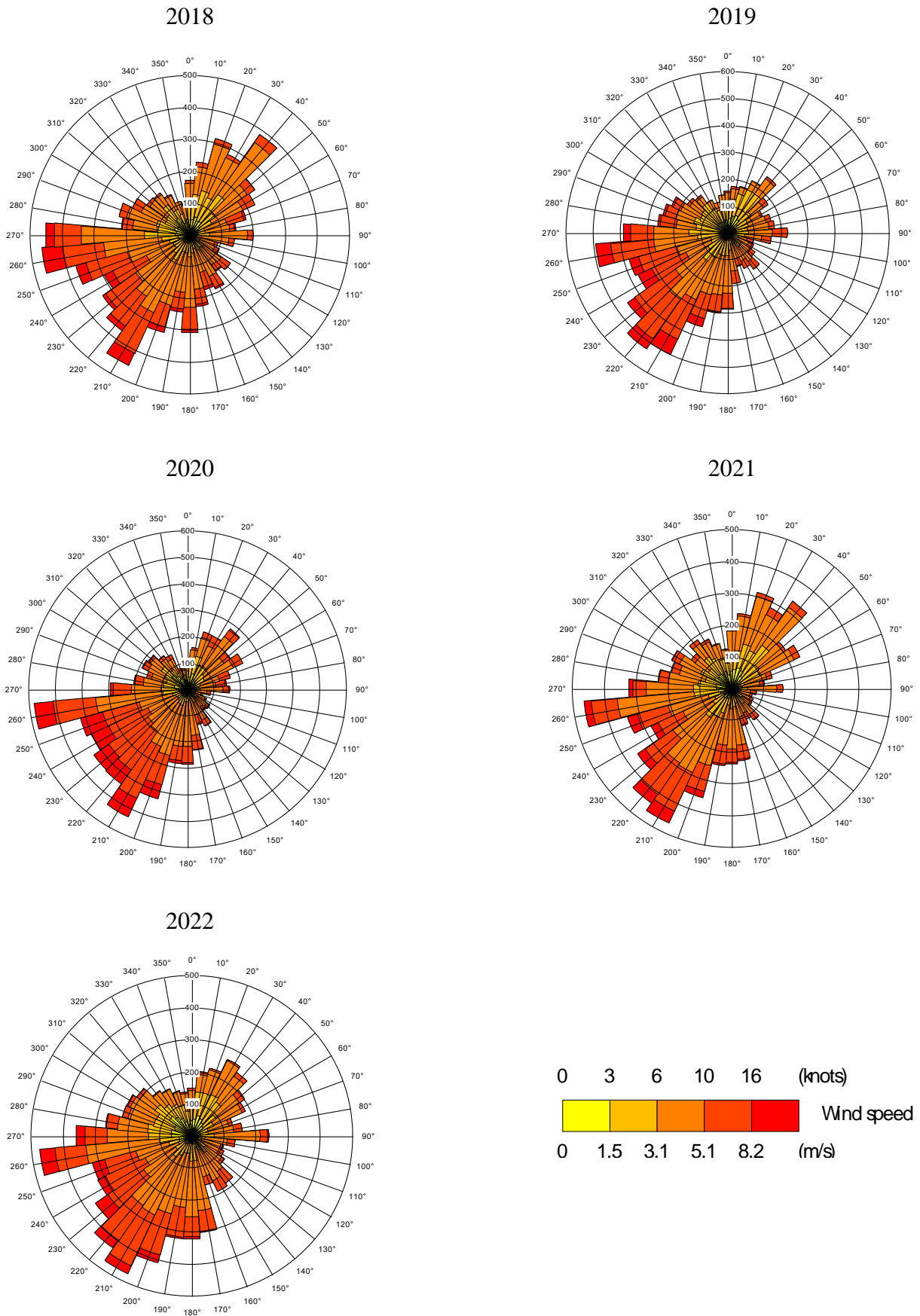
In order for the modelling exercise to be representative of local conditions and to predict long-term averages, the dispersion model requires representative meteorological data. Most dispersion models cannot make predictions during calm wind conditions, as dispersion of air pollutants is more difficult to calculate in these circumstances. The default option within ADMS for treating calm conditions has been implemented, by setting the minimum wind speed to 0.75m/s. Local Air Quality Management (LAQM) Technical Guidance (TG22)¹³ recommends that the meteorological data file is tested within a dispersion model and the relevant output log file checked to confirm the number of missing hours and calm hours than cannot be used by the dispersion model. This is important when considering predictions of high percentiles and the number of exceedances. The guidance recommends that meteorological data should only be used if the percentage of usable hours is greater than 75% and preferably 90%.

The datasets for 2018-2022 all had usable hours greater than 90% (2018: 96%; 2019: 95%; 2020: 92%; 2021: 89%; and 2022: 97%). The data therefore meets the requirements of the Defra guidance and is considered to be adequate for use in dispersion modelling.

Figure 5 shows the wind roses for each year of data (2018 to 2022); the predominant wind direction is south-westerly. Five years of meteorological data have been used in the dispersion modelling to determine the year giving the maximum pollutant concentrations at ground level.

¹³ Defra (2022) Local Air Quality Management Technical Guidance TG (22)

Figure 5 Wind roses for Heathrow Airport from 2018 to 2022



Buildings

Buildings can have an important effect on the spread of pollutants. If tall buildings are close to a chimney this can affect the spread of pollutants in the atmosphere and can lead to higher concentrations near the chimney than one would expect in the absence of buildings.

The proposed data centre building on site will likely have the most significant impact on dispersion, as it is the closest building to the flues. It has been modelled as the main building for all flues.

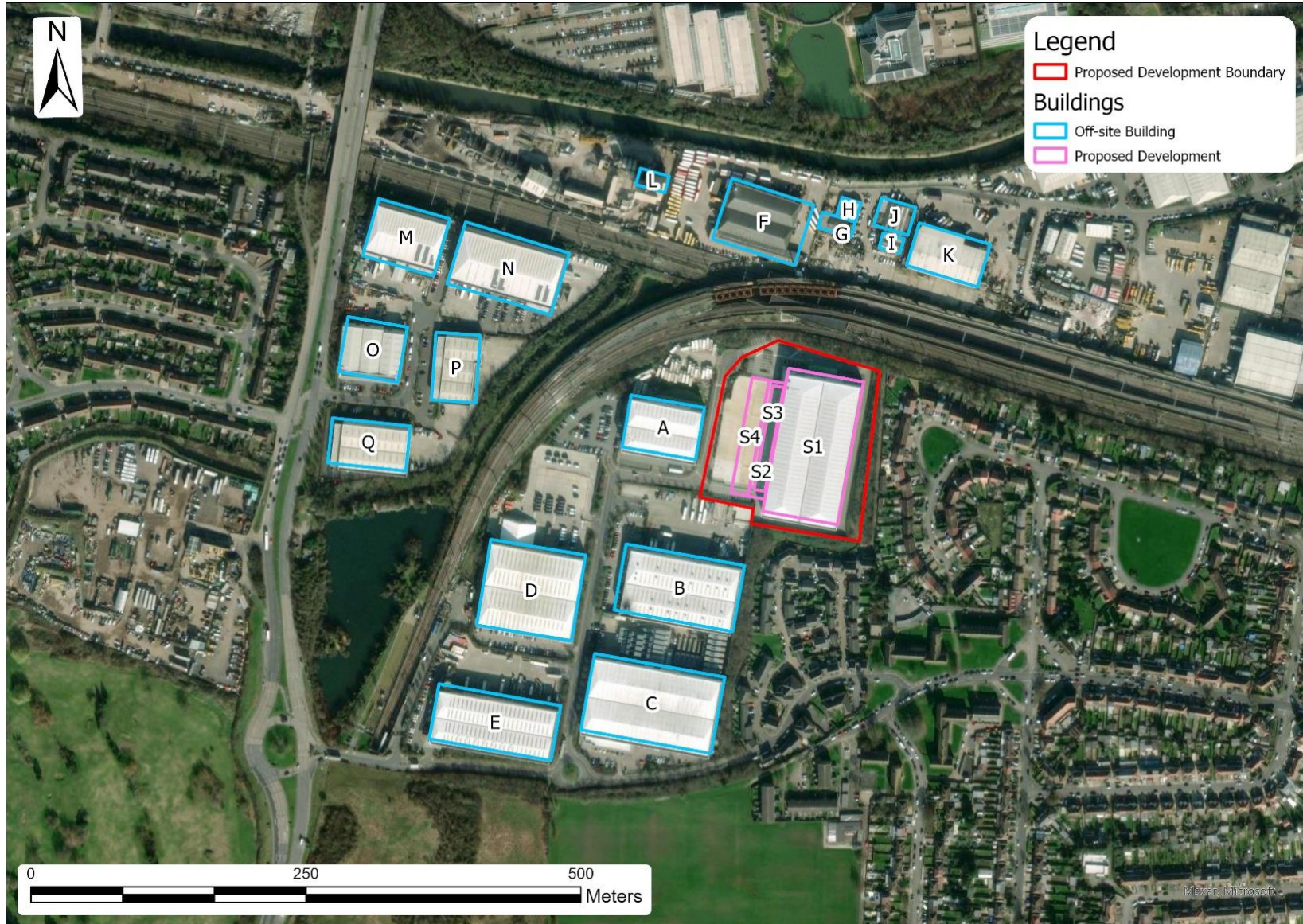
Additional offsite buildings in the surrounding area have also been included. The same buildings and geometries included in the planning report⁵ have been included in this assessment for consistency.

The details of the building geometries included in the model are shown in Table 4 and the locations of modelled buildings are shown in Figure 6. Buildings can only be added to the ADMS model as rectangular or circular shapes, therefore some simplifications of the building geometries have been made.

Table 4 Modelled building parameters

Name	Building centre		Height* (m)	Length (m)	Width (m)
	X centroid	Y centroid			
A	507945	179598	14.5	67.6	58.0
B	507960	179453	14.5	109.5	60.9
C	507936	179347	14.5	120.1	70.4
D	507825	179451	14.5	87.4	78.9
E	507792	179330	13	112.4	50.7
F	508036	179785	5	78.3	57.8
G	508103	179783	5	31.3	14.4
H	508114	179796	7	18.1	18
I	508153	179766	7	19.8	13.6
J	508156	179790	10	32.4	26.1
K	508204	179755	36	67.5	40.2
L	507936	179823	14.5	27.3	15.4
M	507712	179771	14.5	67.2	53.9
N	507804	179743	4	98.3	58.6
O	507681	179669	13.5	54.8	51.0
P	507757	179653	10.4	61.4	40.3
Q	507678	179583	14.5	71.3	40.9
S1 – onsite (main building)	508081	179581	14.5	131.9	69.2
S2 - onsite	508041	179588	10	96.0	10
S3 - onsite	508039	179587	10	106.7	15.4
S4 - onsite	508024	179590	10	106.5	15.8

Figure 6 Modelled buildings



Surface roughness

Surface roughness is a parameter that describes the local land use and determines how turbulence resulting from the air flow over the ground is treated in the model. In relatively flat (smooth surface) areas the surface roughness is low and turbulence from this source is lower than a built-up urban area. Typical surface roughness values range from 0.0001m (for water or sandy deserts) to 1.5m (for cities, forests and industrial areas).

In this assessment, a value of 1.0m has been selected for the dispersion site, this value is described in ADMS as representing a surface roughness of “cities, woodlands”. The same value have been used for the meteorological site given the close proximity.

Monin-Obukhov Length

The Monin-Obukhov length provides a measure of the extent to which stable atmospheric conditions are limited by the heat island effect. A minimum Monin-Obukhov length of 30m has been used in this dispersion modelling study, which is described as representative of a “mixed urban / industrial” or “cities and large towns”.

NO_x to NO₂ conversion

The model predicts nitrogen oxides (NO_x) concentrations, which comprise nitric oxide (NO) and nitrogen dioxide (NO₂). NO_x is emitted from combustion processes, primarily as NO with a small percentage of NO₂. The emitted NO reacts with oxidants in the air (mainly ozone) to form NO₂.

This assessment has followed the methodology set out by the EA, which states it should be assumed as a worst-case scenario that 70% of long-term and 35% of short-term NO_x concentrations will convert to NO₂¹⁴.

The planning report⁵ used different conversions however the EA conversions set out above are used in this report to be conservative in line with the EA guidance.

Total Concentrations

To calculate the total concentration, the background concentrations are added to the predicted concentrations of the generators at the receptors. For long-term concentrations, the annual average background concentration has been used. For the short-term concentrations, twice the annual mean background concentrations has been added to the model predictions, following EA guidance¹⁵.

The total concentrations at each receptor are calculated as follows:

- Long-term total concentration or Predicted Environmental Concentration (PEC): long-term process contribution (PC) from the generators + annual mean background concentration.
- Short-term PEC: short-term PC + 2 times the annual mean background concentration.

¹⁴ Environment Agency; Air Quality Modelling and Assessment Unit, Conversion ratios for NO_x and NO₂

¹⁵ EA (2021) Air emissions risk assessment for your environmental permit. Available at: <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

3.6 Assessment of Significance

Human receptors

The EA guidance¹⁵ describes how insignificant process contributions can be screened out of further analysis.

Step 1: The PC can be considered insignificant and requires no further investigation if:

- the long-term PC is <1% of the long-term environmental standard; and
- the short-term process contribution is <10% of the short-term environmental standard.

Step 2: For those contributions not screened out in step 1, the PEC, must be tested. Concentrations are considered potentially significant if:

- the long-term PEC is greater than 70% of the long-term standard; or
- the short-term PC is greater than 20% of the short-term standard minus twice the annual mean background concentration.

Ecological receptors

Similarly, to the above process, the following criteria have been adopted in this assessment in respect to potential impacts at ecological sites.

For SPAs, SACs, Ramsar sites or SSSIs:

- the long-term PC is less than 1% of the long-term environmental standard for protected conservation area but the PEC is less than 70% of the long-term environmental standards; and
- the short-term PC is greater than 10%.

Predicted PC or PEC that meet the above criteria are deemed to be insignificant. When impacts cannot be screened out as being insignificant using the thresholds above, the evaluation of the significance of results requires further consideration. The screening criteria has been used to assess the impact on relevant SPAs, SACs and Ramsar sites within 10km of the Proposed Development.

For local nature sites and ancient woodlands, the EA uses less stringent criteria in its permitting decisions. EA local policy¹⁵ for its permitting process is that if either the short-term or long-term PC is less than 100% of the criteria level or load, they do not require further assessment.

Hypergeometric distribution

A statistical analysis has been undertaken to assess the likelihood of the NO₂ hourly mean objective being exceeded in the modelled Emergency Scenario. With regards to the probability from the hypergeometric distribution, the following criteria has been used following the EA guidance¹² Where the probability is:

- 1% or less – exceedances are highly unlikely;
- less than 5% – exceedances are unlikely as long as the generator plant operational lifetime is no more than 20 years; and
- more than or equal to 5% – there is potential for exceedances and the regulator will consider if acceptable on a case-by-case basis.

3.7 Nutrient Nitrogen Deposition and Acid Deposition

With regard to nitrogen and acid deposition, site and habitat specific critical loads and existing deposition rates have been taken from the APIS website¹⁶. Predicted deposition at ecological receptors has been compared against the lowest critical loads to provide a conservative assessment.

The assessment has looked at the Critical Load Functions (CLFs) for acidity using the relevant graphs on the APIS website¹⁶. Where impacts were not been screened out as less than 1%, the CLF graphs for the most sensitive species in each designated area have been used to estimate the worst-case impact.

The information on the critical loads for each designated for vegetation of nutrient nitrogen and acidity (nitrogen and sulphur) are given in Appendix D.

Acid deposition has been assessed in terms of the CLFs for acidity, which are a function of nitrogen (N) and sulphur (S) deposition. The critical load functions are site and feature/habitat specific. Total N deposition has been derived from the addition of ammonia and NO₂ deposition results. While Hydrogen Chloride (HCl) and Hydrogen Fluoride (HF) give rise to acid deposition, they are not assessed as part of the CLFs as the emissions of these pollutants from the stacks are not significant in comparison to N and S¹⁷.

The CLFs graphs comprise two lines that represent two envelopes of safety (reflecting the present uncertainty in the scientific knowledge and evidence-base on the effects of acidic air pollution on sensitive species). If the total acid deposition rate is above the higher ‘maximum CL’ line, it is likely that there are harmful effects on the relevant habitat/features arising from the current level of acid (due to both nitrogen and sulphur) deposition. If the total acid deposition level falls below the lower ‘minimum CL’ line, it is unlikely that the feature/habitat is being harmed. If the current total acid (due to both nitrogen and sulphur) deposition level lies between the lower and upper CLFs, it is not possible to be certain that harm is occurring¹⁶.

The dry deposition flux for each receptor location has been calculated based on recommended deposition velocities¹⁷ as shown in Table 5.

Table 5 Recommended dry deposition velocities

Chemical species	Recommended deposition velocity, m/s	
NO ₂	Grassland	0.0015
	Forest	0.003

Conversion factors are used to convert dry deposition flux from units of µg/m²/s to kg/ha/yr are shown in Table 6.

Table 6 Conversion factors to change units from µg/m²/s of chemical species X to kg of X/ha/yr

Chemical species	Conversion factor µg m ² /s of species X to kg/ha/year	
NO ₂	of N:	96

The unit of ‘equivalents’ is also used for acidification purposes, rather than a unit of mass. Essentially this means ‘moles of charge’ i.e., it is a measure of how acidifying the chemical species can be. It is denoted by the units ‘keq’. To convert kg/ha/yr to keq/ha/yr, the conversion factors shown in Table 7 have been used.

Table 7 Conversion factors to alter units from kg of N or S ha/yr to keq of N or S ha/yr

Species	Conversion factor kg/ha/year to keq/ha/year
N	0.071428

¹⁶ Air Pollution Information System (APIS), available at: [Site Relevant Critical Loads and Source Attribution | Air Pollution Information System \(apis.ac.uk\)](https://apis.ac.uk) [Accessed September 2023]

¹⁷ A guide to the assessment of air quality impacts on designated nature conservation sites, IAQM. May 2020. Available at: <https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf> [Accessed September 2023]

4. Baseline Assessment

4.1 Air Pollution Sources

Industrial Pollution

Industrial air pollution sources are regulated through a system of operating permits or authorisations, requiring stringent emission limits to be met, and ensuring that any releases to the environment are minimised or rendered harmless. Regulated (or prescribed) industrial processes are classified as Part A(1), A(2), Part B or Medium Combustion Plant (MCP) processes and are regulated through the Pollution Prevention and Control (PPC) system^{18,19}. The larger more polluting processes are regulated by the EA, and the smaller less polluting ones by the local authorities. Local authorities focus on regulation for emissions to air, whereas the EA regulates emissions to air, water and land.

There are three regulated Part A(1) industrial installations and MCP programmes listed on the EA website²⁰ within 2km of the Proposed Development. These processes are summarised below in Table 8.

Any releases to air are considered to be accounted for within the Defra background concentrations used in this assessment (see Section 4.4).

Table 8: Part A processes within 2km of the Proposed Development

Facility Name	Distance from Proposed Development	Processes relevant to release to air
EON UK PLC	~0.7km	Tranche B generator
Lufthansa Technik landing Gear Services UK Limited	~0.9km	Solvent emission directive with surface treating of metals and plastics
Owen Coyle Anodising Limited	1.7km	Surface treatment of metal

Road traffic

In recent decades, atmospheric emissions from transport on a national basis have grown to match or exceed other sources in respect of many pollutants, particularly in urban areas. There are three major roads close to the Proposed Development: the A312 to the east, the M25 to the west and the M4 to the south. These roads are likely to be the main sources of pollutants in the area surrounding the Proposed Development.

Rail traffic

The Elizabeth Line runs to the north of the Proposed Development and diverts south within 100 m of the Proposed Development.

The Great Western Main Line (GWML) also uses this section of rail to the north, linking London Paddington to Bristol Temple Meads. The railway line is not highlighted as a line with heavy traffic of diesel passenger trains in the LAQM guidance¹³ and therefore is not considered to be a significant source of local air pollutant

¹⁸ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).

¹⁹ The Environmental Permitting (England and Wales) Regulations 2016, SI 2016/1154.

²⁰ Environment Agency, Environmental Permitting Regulations – Installations. Available at: <https://environment.data.gov.uk/public-register/view/search-industrial-installations> [Accessed August 2023]

concentrations. Emissions from the railway line and station have not been considered further in this assessment.

4.2 Local Air Quality

The Environment Act 2021²⁴ requires local authorities to review and assess air quality with respect to the objectives for the pollutants specified in the National Air Quality Strategy. Where objectives are not predicted to be met, local authorities must declare the area (or a wider area where action is required to ensure compliance) as an AQMA and then produce an Air Quality Action Plan (AQAP) which includes measures to improve air quality in the AQMA. Local authorities are also required to prepare an ASR to state the measures implemented to improve local air quality and report any progress achieved. Most AQMAs across the UK have been declared due to road traffic emissions.

The Proposed Development sits within the Hillingdon AQMA. This AQMA was declared in 2003 due to exceedances of the annual mean NO₂ air quality objective.

The neighbouring London Boroughs have also declared AQMAs. The location of these AQMAs are shown in Figure 7.

Figure 7 AQMAs within 2km of the Proposed Development



4.3 Local Monitoring

A review of existing air quality conditions in the area surrounding the Proposed Development has been undertaken using the 2022 LBH ASR⁶. Data from 2020 and 2021 is not considered to be representative of typical baseline conditions as it was affected by COVID-19 national lockdowns, however it is included here for completeness. No data was available for 2022 at the time of writing.

Automatic Monitoring

Automatic or continuous monitoring involves drawing air through an analyser continuously to obtain near real-time pollutant concentration data.

A review of the most recent ASR⁶ shows that there are two automatic monitoring stations within 2km of the Proposed Development. London Hillingdon is 1.4 km from the Proposed Development and measures NO₂ and O₃. London Harlington is 1.7 km from the Proposed Development and measures CO, NO₂, O₃, PM₁₀ and PM_{2.5}. The monitoring data collected by LBH between 2017 and 2021 is listed in Table 9 to Table 11 and the locations of the monitoring sites are shown in Figure 8.

Exceedances of the annual mean objective for NO₂ were recorded at monitoring site HIL between 2017 and 2019. The highest concentration recorded was 53µg/m³ in 2017, with the concentration dropping each subsequent year. As the NO₂ annual mean does not exceed 60µg/m³ at any monitoring sites, it is mostly likely to be below of the NO₂ hourly mean objective of 200µg/m³. There have been no recorded exceedances of the annual mean standard since 2019, however, 2020 and 2021 were COVID affected years, meaning they are not considered to be representative of typical conditions.

Measurements of PM₁₀ and PM_{2.5} are below the respective annual mean air quality objectives of 40µg/m³ and 12µg/m³ at monitoring site HRL.

Although LBH does not monitor NO₂ hourly mean, the NO₂ annual mean does not exceed 60µg/m³ at any monitoring sites, which indicates that it is mostly likely below of the NO₂ hourly mean objective¹³.

Automatic Monitoring Results

Table 9 Annual mean concentrations of NO₂ at automatic monitoring sites

Site name	Site ID	X	Y	Site type	NO ₂ concentration (µg/m ³)				
					2017	2018	2019	2020	2021
London Hillingdon	HIL	506951	178605	Urban background	53	46	45	28	25
London Harlington	HRL	508295	177800	Airport	32	30	31	20	20

Note:
Exceedances of the air quality objective of 40µg/m³ for NO₂ are highlighted in **bold**.
Data from 2020 was affected by COVID-19 national lockdowns and therefore isn't considered to be representative of typical baseline conditions but is included here for completeness.

Table 10 Annual mean concentrations of PM₁₀ at automatic monitoring sites

Site name	Site ID	X	Y	Site type	PM ₁₀ concentration (µg/m ³)				
					2017	2018	2019	2020	2021
London Harlington	HRL	508295	177800	Airport	15	15	15	14	13

Table 11 Annual mean concentrations of PM_{2.5} at automatic monitoring sites

Site name	Site ID	X	Y	Site type	PM _{2.5} concentration (µg/m ³)				
					2017	2018	2019	2020	2021
London Harlington	HRL	508295	177800	Airport	9	9	10	8	8

Diffusion Tube Monitoring

There were exceedances of the annual mean objective for NO₂ at five of the sites in 2017-2021 in LBH. The highest concentration was recorded at monitoring site HILL18 (Blyth Road, Hayes), where the concentration recorded in 2017 was 49.0µg/m³, above the air quality standard of 40µg/m³. Concentrations have since fallen below the air quality objective at this site.

HILL28 (Blyth Road, Hayes) is the closest roadside monitoring site to the Proposed Development. Between 2017 and 2021, the concentrations recorded at monitoring site HILL28 were below the air quality standard of 40µg/m³.

Although LBH does not monitor NO₂ hourly mean, the NO₂ annual mean does not exceed 60µg/m³ at any monitoring sites, which indicates that it is mostly likely below of the NO₂ hourly mean objective¹³.

Diffusion Tube Monitoring

There are 10 diffusion tube monitoring sites located within 2km of the Proposed Development that measure NO₂ concentrations. The monitoring data collected by LBH between 2017 and 2021 is listed in Table 12 and the locations of the monitoring sites are shown in Figure 8.

There were exceedances of the annual mean objective for NO₂ at five of the sites in 2017-2021 in LBH. The highest concentration was recorded at monitoring site HILL18 (Blyth Road, Hayes), where the concentration recorded in 2017 was 49.0µg/m³, above the air quality standard of 40µg/m³. Concentrations have since fallen below the air quality objective at this site.

HILL28 (Blyth Road, Hayes) is the closest roadside monitoring site to the Proposed Development. Between 2017 and 2021, the concentrations recorded at monitoring site HILL28 were below the air quality standard of 40µg/m³.

The NO₂ annual mean does not exceed 60µg/m³ at any monitoring sites, which indicates that it is mostly likely below of the NO₂ hourly mean objective¹³.

Diffusion tube monitoring results

Table 12 Annual mean concentrations of NO₂ at diffusion tube monitoring sites

Site name	Site ID	X	Y	Site type	NO ₂ concentration (µg/m ³)				
					2017	2018	2019	2020	2021
Co-located With London Hillingdon CM	HILL01	506926	178614	Roadside	45.3	42.0	38.6	25.6	25.7
Harold Avenue, Hayes	HILL07	509918	179015	Roadside	43.3	37.7	36.9	28.1	28.8
Phelps Way Hayes	HILL08	509798	178654	Roadside	33.4	33.9	33.9	24.1	25.3
Cranford Lane Harlington	HILL09	508758	177718	Roadside	39.4	37.2	36.4	23.8	24.5
Blyth Road, Hayes	HILL18	509683	179486	Roadside	49.0	38.5	37.4	29.9	27.6
Porters Way, West Drayton	HILL20	506503	179510	Background	37.9	36.6	36.6	31.6	31.5
Mulberry Crescent, West Drayton	HILL21	507141	179628	Background	34.7	34.9	32.3	23.4	24.1
R/O Cleave Avenue, Hayes	HILL26	509499	178370	Roadside	51.5	42.0	40.0	28.2	26.8
Botwell House Primary School	HILL27	509755	179934	Roadside	33.8	32.5	33.2	24.5	25.3
Blyth Road, Hayes	HILL28	509328	179603	Roadside	35.7	31.7	31.7	23.0	23.5
Note: Exceedances of the air quality objective of 40µg/m ³ for NO ₂ are highlighted in bold . Data from 2020 was affected by COVID-19 national lockdowns and therefore isn't considered to be representative of typical baseline conditions but is included here for completeness.									

Figure 8 Monitoring sites within 2km of the Proposed Development



4.4 Background Concentrations

Defra publishes background pollutant mapping²¹ for every 1km x 1km Ordnance Survey (OS) grid square across the UK for NO_x, NO₂ and PM₁₀ and PM_{2.5}.

Table 13 shows the estimated Defra background concentrations for the OS grid square containing the Proposed Development (508500, 179500) and the OS grid squares containing the closest urban background monitors to the Proposed Development in 2019 for comparison (as this is the most recent year where monitored data is available that was not impacted by COVID-19).

Table 13 2019 Defra background pollutant concentrations

Description	OS Grid Reference (m)		Average annual mean concentrations (µg/m ³)			
	X	Y	NO ₂	NO _x	PM ₁₀	PM _{2.5}
Proposed Development	508500	179500	26.5	41.4	16.9	11.4
HILL20	506503	179510	23.3	-	-	-
HILL21	507141	179628	26.2	-	-	-

The closest urban background diffusion tube monitoring sites to the Proposed Development are HILL21, which is 800 m to the west, and HILL20, which is 1.4km to the west. Both of these site have recorded NO₂ concentrations below the annual mean NO₂ air quality objective consistently since 2017.

Table 14 shows the comparison between the measured concentrations at the urban background monitoring sites (HILL20 and HILL21) and the estimated Defra background concentrations for the same OS grid square for NO₂ in 2019.

Table 14 Comparison between monitored NO₂ and Defra background concentrations.

Monitoring site	Estimated Defra background concentration (µg/m ³)	Measured concentration (µg/m ³)	Difference (µg/m ³)	Difference (%)
HILL20	23.3	36.6	13.3	44%
HILL21	26.2	32.3	6.1	20%

The NO₂ concentrations measured at the urban background monitoring sites are higher than the estimated Defra background concentration for the same grid squares. The highest percentage difference is 44% at HILL20. HILL20 is in an appropriate measuring site, located on Porters Way. Therefore, diffusion monitoring concentrations have been used for this assessment. Defra background concentrations have been used for other pollutants in the absence of monitored background data.

The relevant background concentrations at each receptor have been used in this assessment, from the appropriate grid square, with the exception of NO₂, where the measured urban background values from the HILL20 monitoring site of 36.6µg/m³ have been used to provide a conservative assessment.

4.5 Baseline summary

There are 10 diffusion tube monitoring sites located within 2km of the Proposed Development that measure NO₂ concentrations. There were exceedances of the annual mean objective for NO₂ recorded at six of the sites in 2017-2019 in LBH. The highest concentration was recorded at monitoring site HILL18. In 2017, the concentration recorded was 49µg/m³, above the air quality standard of 40µg/m³, however this has fallen below air quality objectives in recent years.

²¹ Defra, Background Pollutant Mapping. Available at: <http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>; [Accessed: August 2023].

HILL28 is the closest roadside monitoring site to the Proposed Development and in 2021 the concentration recorded was $23.5\mu\text{g}/\text{m}^3$, below the air quality standard of $40\mu\text{g}/\text{m}^3$.

LBH also undertakes background monitoring within the vicinity of the Proposed Development. The nearest background monitoring location to the Proposed Development is HILL21, which recorded an NO_2 annual mean concentration of $24.1\mu\text{g}/\text{m}^3$ in 2021, which is below the air quality objective.

Defra NO_2 annual mean backgrounds at the Proposed Development site are $26.5\mu\text{g}/\text{m}^3$, which is well below the air quality objective. Monitored background concentrations were used as the background data in this assessment for NO_2 , as they are considered to be more representative of the background conditions at the nearby residential sites.

Following a review of all available local authority monitoring data from LBH, it is considered that local ambient air quality conditions at the vicinity of the Proposed Development are likely to be below the national air quality standards.

5. Best Available Techniques

5.1 Overview

Best Available Techniques (BAT) aim to prevent or reduce emissions and impacts on the environment. Defra notes that BAT can include:

- the technology used; and / or
- how the facility is designed, built or operated²².

In order to provide the most robust assessment, a review of the BAT for the Proposed Development was undertaken. The following points demonstrate how the design for the Proposed Development has been optimised to provide BAT both in terms of technology used and in the design:

- Emission levels are under 2,000mg/m³ of NO_x for the specified generators (at 5% O₂ and at reference conditions) in line with the EA guidance²³;
- The design includes an air intake for dilution of the exhaust gas prior to emission to air;
- The run time of the testing and maintenance regime is less than 50 hours per year (5 hours per SBG); and
- SCR has been utilised on the SBGs (further details below).

5.2 Consideration of SCR mitigation

Adopting 'end-of-pipe' emissions abatement systems such as selective catalytic reduction (SCR) to reduce NO_x emissions to atmosphere is an option that has been considered. Current SCR systems could reduce NO_x emissions by more than 90%, though for the type of application proposed (where generator sets are only run for relatively short periods of time), the actual efficiency will depend on how quickly the SCR system reaches its operating temperature following generator startup.

Due to the consideration that the predicted concentrations of the original generators could be improved upon during the planning stage, SCR was investigated and will be installed in the Proposed Development. The use of SCR would reduce NO_x emissions by at least 95% but would require 20 minutes to warm up before being effective. For a 1-hour test, this would mean that for the first 20 minutes, the SCR would not be effective, and the original generator emission rate would be in effect. The final 40 minutes would then emit pollutants at the lower SCR emission rate. In order to take this into account for the modelling, a weighted emission rate was calculated, using the standard emission rate for the initial 20 minutes and the SCR emission rate for the final 40 minutes.

5.3 Consideration of HVO

The possibility of HVO fuel as an alternative fuel source to diesel was also discussed at the planning stage⁵Error! Bookmark not defined.. It was determined that there was a lack of empirical evidence supporting the use of HVO fuel to achieve a sufficient reduction in NO_x and PM₁₀ and PM_{2.5} emissions. The use of HVO fuel was therefore discounted for the purposes of this application.

²² Defra, 2022. Establishing the Best Available Techniques for the UK. Available at: <https://www.gov.uk/government/publications/establishing-the-best-available-techniques-for-the-uk-uk-bat/establishing-the-best-available-techniques-for-the-uk-uk-bat> [Accessed September 2023].

²³ Environment Agency, 2022. Data Centre FAQ Headline

6. Assessment of SBG Emissions

6.1 Assessment of SBG Emissions

The concentrations of pollutants as a result of SBG emissions have been predicted for five meteorological years (2018, 2019, 2020, 2021 and 2022) at each of the identified nearby sensitive receptors. The following section provides a summary of the highest modelling results predicted from the five years of meteorological data used.

Table 15 outlines a summary of the significance of effects from the assessment of SBG emissions on human receptors Scenarios 1-3.

Table 16 outlines a summary of the significance of Scenarios 1-3 for the assessment on ecological receptors.

Table 15 Human receptor assessment summary of significance for testing and emergency scenarios

Scenario	NO ₂ annual mean	PM ₁₀ annual mean	PM _{2.5} annual mean	NO ₂ hourly mean	PM ₁₀ daily mean	CO 8-hour rolling mean	NH ₃ annual mean	NH ₃ daily mean
Testing Scenario 1 (monthly test)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Not considered as SCR not effective for 15mins	Not considered as SCR not effective for 15mins
Testing Scenario 2 (annual test)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
Emergency Scenario	Not considered due to limited run time	Not considered due to limited run time	Not considered due to limited run time	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

Table 16 Ecological assessment summary of significant for testing and emergency scenarios

Scenario	NO _x annual mean	NO _x daily mean	NH ₃ annual mean
Testing Scenario 1 (monthly test)	Insignificant	Insignificant	-
Testing Scenario 2 (annual test)	Insignificant	Insignificant	Insignificant
Emergency Scenario	-	Potentially significant	Insignificant

6.2 Human receptors

Detailed descriptions of the results on human receptors are provided in Table 17-Table 19 below for each Scenario, and full results are provided in Appendix D for testing and emergency scenarios (see Table 3 for information on scenarios).

Table 20 provides the outcomes of the assessment of the Emergency Scenario emergency impacts against the AEGLs in keeping with EA requirements. There are no recorded exceedances of AEGL 1 for each of the three periods assessed.

A contour plot A contour plot of NO₂ hourly concentrations in Emergency Scenario, using the worst-case meteorological data is also provided in Figure 10, Appendix E.

Testing Scenario 1 – monthly test

Table 17 Assessment of generator emissions on human receptors – Testing Scenario 1 (monthly test) results

Pollutant & period	Air quality standard	Largest PC	Location of largest PC (receptor)	PC as % of air quality standard	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO ₂ annual mean concentration	40µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	36.6µg/m ³	R70 (Dwelling on Dawley Road)	Below the air quality standard	Insignificant
PM ₁₀ annual mean concentration	40µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	18.2µg/m ³	R70 (Dwelling on Dawley Road)	Well below the air quality standard	Insignificant
PM _{2.5} annual mean concentration	12µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	12.2µg/m ³	R70 (Dwelling on Dawley Road)	Exceeds the air quality standard	Insignificant¹
NO ₂ hourly mean concentration	200µg/m ³	11.9µg/m ³	R74 (Dwelling on Mulberry Crescent)	Less than 10%	85.1µg/m ³	R74 (Dwelling on Mulberry Crescent)	Well below the air quality standard	Insignificant
PM ₁₀ daily mean concentration (90.41st percentile)	50µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	36.4µg/m ³	R70 (Dwelling on Dawley Road)	Well below the air quality standard	Insignificant
CO 8-hour rolling mean concentration	10,000µg/m ³	0.35µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	414µg/m ³	R68 (Dwelling on Mildred Avenue)	Well below the air quality standard	Insignificant
Note:								
¹ Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the process contribution is <0.01µg/m ³ . The exceedance is due to a high background PM _{2.5} concentration and the process contribution can be considered insignificant.								

Testing Scenario 2 – annual test

Table 18 Assessment of generator emissions on human receptors – Testing Scenario 2 (annual test) results

Pollutant & period	Air quality standard	Largest PC	Location of largest PC (receptor)	PC as % of air quality standard	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO ₂ annual mean concentration	40µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	36.6µg/m ³	R70 (Dwelling on Dawley Road)	Below the air quality standard	Insignificant
PM ₁₀ annual mean concentration	40µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	18.2µg/m ³	R70 (Dwelling on Dawley Road)	Well below the air quality standard	Insignificant
PM _{2.5} annual mean concentration	12µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	12.2µg/m ³	R70 (Dwelling on Dawley Road)	Exceeds the air quality standard	Insignificant¹
NH ₃ annual mean concentration	180µg/m ³	<0.01µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	0.8 µg/m ³	R47 (Stockley Park Golf Club)	Well below the air quality standard	Insignificant
NO ₂ hourly mean concentration	200µg/m ³	13.5µg/m ³	R74 (Dwelling on Mulberry Crescent)	Less than 10%	86.7µg/m ³	R74 (Dwelling on Mulberry Crescent)	Well below the air quality standard	Insignificant
PM ₁₀ daily mean concentration (90.41st percentile)	50µg/m ³	0.02µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	36.4µg/m ³	R70 (Dwelling on Dawley Road)	Well below the air quality standard	Insignificant
CO 8-hour rolling mean concentration	10,000µg/m ³	0.90µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	415µg/m ³	R68 (Dwelling on Mildred Avenue)	Well below the air quality standard	Insignificant
NH ₃ hourly mean concentration	2500µg/m ³	0.33µg/m ³	R7 (Dwelling on Nine Acres Close)	Less than 1%	1.9 µg/m ³	R7 (Dwelling on Nine Acres Close)	Well below the air quality standard	Insignificant

Note:

¹Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the process contribution is <0.01µg/m³. The exceedance is due to a high background PM_{2.5} concentration and the process contribution can be considered insignificant.

Emergency Scenario

Table 19 Assessment of generator emissions Emergency Scenario results

Pollutant & period	Air quality standard	Largest PC	Location of largest PC (receptor)	PC as % of air quality standard	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO ₂ hourly mean concentration	200µg/m ³	21.5µg/m ³	R74 (Dwelling on Mulberry Crescent)	More than 10%	94.7µg/m ³	R74 (Dwelling on Mulberry Crescent)	Well below the air quality standard	Insignificant
PM ₁₀ daily mean concentration (90.41st percentile)	50µg/m ³	3.78µg/m ³	R47 (Stockley Park Golf Club)	Less than 10%	37.9µg/m ³	R74 (Dwelling on Mulberry Crescent)	Below the air quality standard	Insignificant
CO 8-hour rolling mean concentration	10,000µg/m ³	14.4µg/m ³	R47 (Stockley Park Golf Club)	Less than 1%	420µg/m ³	R68 (Dwelling on Mildred Avenue)	Well below the air quality standard	Insignificant
NH ₃ hourly mean concentration	2500µg/m ³	5.5µg/m ³	R2 (Dwelling on Denbigh Drive)	Less than 1%	7.0µg/m ³	R2 (Dwelling on Denbigh Drive)	Well below the air quality standard	Insignificant

Table 20 Assessment of generator emissions Emergency Scenario AEGL results

Pollutant & period	AEGL Limit Values ($\mu\text{g}/\text{m}^3$)			Largest PC ($\mu\text{g}/\text{m}^3$)	Location of largest PC (receptor)	Largest PEC ($\mu\text{g}/\text{m}^3$)	Location of largest PEC (receptor)	PC as % of air quality standard	% of AEGL Limit Value	Impact
	AEGL 1	AEGL 2	AEGL 3							
NO _x hourly mean concentration	956.3	22,950.0	38,250.0	87 $\mu\text{g}/\text{m}^3$	R2 (Dwelling on Denbigh Drive)	114 $\mu\text{g}/\text{m}^3$	R2 (Dwelling on Denbigh Drive)	3% of AEGL 1	Well below AEGL 1	Insignificant
NO _x 30-minute mean concentration	956.3	28,867.5	47,812.5	99 $\mu\text{g}/\text{m}^3$	R2 (Dwelling on Denbigh Drive)	117 $\mu\text{g}/\text{m}^3$	R2 (Dwelling on Denbigh Drive)	4% of AEGL 1	Well below AEGL 1	Insignificant
NO _x 10-minute mean concentration	956.3	38,250.0	65,025.0	109 $\mu\text{g}/\text{m}^3$	R8 (Dwelling on Denbigh Drive)	121 $\mu\text{g}/\text{m}^3$	R8 (Dwelling on Denbigh Drive)	4% of AEGL 1	Well below AEGL 1	Insignificant

6.3 Ecological receptors

The impact of the Proposed Development on ecological receptors has been assessed against the relevant air quality standards for each scenario. Detailed descriptions of the results at ecological receptors are provided in Table 21-Table 23 below for each Scenario, and results are provided in Appendix D for testing and emergency scenarios (see Table 3 for information on scenarios).

A contour plot of NO_x daily concentrations in Emergency Scenario, using the worst-case meteorological data is also provided in Appendix E.

Testing Scenario 1 – monthly test

Table 21 Assessment of generator emissions on ecological receptors – Testing Scenario 1 (monthly test) results

Pollutant & period	Critical level	Largest PC	Location of largest PC (receptor)	PC as % of critical level	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO _x annual mean concentration	30µg/m ³	<0.01µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Less than 1%	55.6µg/m ³	ER3 (South West London Waterbodies 3)	Above the critical level	Insignificant¹
NO _x daily mean	75µg/m ³	8.5µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	More than 10%	111.3µg/m ³	ER3 (South West London Waterbodies 3)	Above the critical level	Insignificant²

Note:

¹Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the process contribution is <0.01µg/m³. The exceedance is due to a high background NO_x concentration and the process contribution can be considered insignificant.

²Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant. The process is also not continuously operational which will further reduce the risk of impacts.

Testing Scenario 2 – annual test

Table 22 Assessment of generator emissions on ecological receptors – Testing Scenario 2 (annual test) results

Pollutant & period	Critical level	Largest PC	Location of largest PC (receptor)	PC as % of critical level	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO _x annual mean concentration	30µg/m ³	<0.01µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Less than 1%	55.6µg/m ³	ER3 (South West London Waterbodies 3)	Above the critical level	Insignificant¹
NO _x daily mean	75µg/m ³	7.7µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	More than 10%	111.3µg/m ³	ER3 (South West London Waterbodies 3)	Above the critical level	Insignificant²
NH ₃ annual mean concentration	3µg/m ³	<0.01µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Less than 1%	0.77µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Below the critical level	Insignificant

Note:

¹Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the process contribution is <0.01µg/m³. The exceedance is due to a high background NO_x concentration and the process contribution can be considered insignificant.

²Whilst the PEC compared to the air quality standard is above the critical level indicating that this is potentially significant, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant. The process is also not continuously operational which will further reduce the risk of impacts.

Emergency Scenario

Table 23 Assessment of generator emissions on ecological receptors - Emergency Scenario results

Pollutant & period	Critical level	Largest PC	Location of largest PC (receptor)	PC as % of critical level	Largest PEC	Location of largest PEC (receptor)	PEC compared to air quality standard	Impact
NO _x daily mean	75µg/m ³	140µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	More than 10%	208µg/m ³	ER1 (Lee Valley)	Above the critical level	Potentially significant¹
NH ₃ annual mean concentration	3µg/m ³	0.01µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Less than 1%	0.78µg/m ³	ER14 (Stockley Business Park Lakes & Meadows)	Below the critical level	Insignificant
<p>Note:</p> <p>¹Whilst the impacts on the NO_x daily mean from the back-up generators during the emergency scenario are potentially significant, it should be noted that the chances of this scenario occurring are considered to be unlikely, based on the reliability of the electrical distribution network and the inbuilt design resilience.</p>								

In addition to reviewing the results against the relevant critical levels, nitrogen deposition and acid deposition have also been considered for Scenarios 1-3.

Nitrogen deposition and acid deposition results

The findings below for nitrogen and acid deposition are applicable for all three modelled scenarios, as the impacts were deemed to be insignificant throughout.

Nitrogen deposition

For nitrogen deposition, the impact of the PC at all sensitive ecological receptors is predicted to be less than 1% of the relevant lower critical loads. The impacts during all scenarios are therefore considered to be **insignificant**.

Acid deposition

For acid deposition, the PC for each ecological receptor was less than the critical load and no exceedances of the critical load function were recorded using the Air Pollution Information System (APIS) critical load function tool. As such, the impacts of acid deposition during all scenarios can be considered **insignificant**.

7. Mitigation

7.1 Operational Phase

Embedded Mitigation

In order to mitigate potential exceedances of pollutants from the testing and potential use of the back-up emergency generators, SCR has been incorporated into the generator design. This has been included in all relevant modelling scenarios (Testing Scenario 2 and the Emergency Scenario).

As part of this AQA, consideration has also been given to the design of the plant, equipment and infrastructure, particularly in how to demonstrate that the relevant BAT will be used. This includes consideration of the Medium Combustion Plant Directive (MCPD).

A BAT assessment has been completed and will also form part of the subsequent Environmental Permit Application for the Proposed Development, to be submitted to the EA.

The EA guidance sets out BAT requirements for the engines and emissions to air, as follows, with responses on how this will be met for the Proposed Development. This is for emergency standby diesel generators with a net rated thermal input above 1 MW, which are exempt from MCPD emission limits because they operate for less than 500 hours per year.

- Statement: *“Dispersion of flue gases optimised through vertical stacks, no caps and cowls impediments”.*

Response – Vertical stacks, clear of impediments 14.45m above ground level, are proposed to be installed at the Proposed Development.

Statement: *“Emissions optimised engines specified to TA-Luft 2g, or US EPA Tier 2 standard or equivalent NO_x emission levels in the range of 2000 mg/m³ of NO_x at 5% oxygen and reference conditions.”*

Response – the assessment has been based on SBGs with NO_x emission concentrations of 1938 mg/m³ at 5% O₂ and reference conditions (100% load standby mode – potential site variation). Furthermore, the SBGs will be fitted with SCR emissions abatement, achieving a minimum NO_x emission reduction of 95% (<86mg/Nm³ at 5% O₂) when active.

- Statement: *“Provision of flue gases sampling ports to allow for monitoring of NO_x and Carbon Monoxide in line with web guidance ‘Monitoring stack emissions: low risk MCPs and specified generators’”.*

Response – Sampling ports will be included for flue gas monitoring.

Further Mitigation

For Scenarios 1 and 2, the effects are considered to be insignificant for all pollutants and therefore no additional mitigation measures are considered necessary.

Similarly, the effects of Emergency Scenario are also considered to be insignificant. Additionally, the likelihood of a complete grid failure for a continuous 72-hour period is considered to be highly unlikely, based on in-built electrical design resilience measures at the Proposed Development, together with published grid reliability data for the National Grid network. Therefore, no further mitigation is recommended for Emergency Scenario.

8. Conclusions

The operational effects from the SBG emissions were assessed for planned testing and maintenance scenarios, which would be the normal operation of the Proposed Development.

This report reviews the existing baseline and considers and assesses the potential air quality impacts that could arise due to the use of the standby back-up generators through the regular testing and maintenance routines. This assessment has also considered the potential impacts from an ‘emergency’ scenario, in the event of complete grid failure.

The assessment considers the potential effects on sensitive human and ecological receptors, as well as considering the nearby Air Quality Management Area (AQMA), which has been declared by LBH. The Proposed Development is also located within this AQMA.

Following a review of all available local authority monitoring data from LBH, it is considered that local ambient air quality conditions at the vicinity of the Proposed Development are likely to be below the national air quality standards.

A BAT assessment has been carried out for the Proposed Development and the Proposed Development is considered to achieve BAT through both uses of technology (SCR) and through the design of the facility itself.

Following the detailed dispersion modelling assessment of each of the testing scenarios, it is considered that there would be **no significant effects as a result of the testing** of the SBGs on human receptors. There are predicted exceedances of the critical level for annual and daily mean NO_x for all scenarios. However, these exceedances are due to high background concentrations, which in all cases is already above the critical level. Therefore, the potential impact on sensitive ecological receptors from the Proposed Development is deemed to be **insignificant**, especially due to the low frequency of the testing scenarios and the fact the process will not be continuously operational.

The Emergency Scenario assessment included a statistical analysis using the hypergeometric distribution to assess the probability of exceeding the NO₂ hourly mean Environmental Assessment Level (EAL). This assessment found that the probability of an exceedance for hourly mean NO₂ was less than 1%, indicating the probability of an **exceedance would be highly unlikely** according to Environment Agency guidance. The Emergency Scenario was also compared against the US Acute Exposure Guideline Levels (AEGLs) for NO₂, where no exceedances were predicted. Additionally, the risk of this scenario occurring is very unlikely based on electrical grid reliability for the area and inbuilt design resilience.

Appendix A Air quality standards and legislation

A.1.1 Environment Act 2021

The Environment Bill became an Act²⁴ (law) in November 2021. The Environment Act 2021 amends the Environment Act 1995²⁵. It also amends the Clean Air Act 1993²⁶ to give local authorities more power at reducing local pollution, particularly that from domestic burning. It also amends the Environmental Protection Act 1990²⁷ to reduce smoke from residential chimneys by extending the system of statutory nuisance to private dwellings.

The following sections of the Environment Act 1995 have been transposed into the Environment Act 2021:

- For the Secretary of State to develop, implement and maintain an Air Quality Strategy. This includes the statutory duty, also under Part IV of the Environment Act 1995, for local authorities to undergo a process of local air quality management and declare an Air Quality Management Area (AQMA) where pollutant concentrations exceed the national air quality objectives. Where an AQMA is declared, the local authority needs to produce an Air Quality Action Plan (AQAP) which outlines the strategy for improving air quality in these areas.

The Act will implement key parts of the government's Clean Air Strategy and include targets for tackling air pollution in the UK;

- for the Secretary of State to publish a report reviewing the Air Quality Strategy every five years;
- for the Office for Environmental Protection to be established to substitute the watchdog function previously exercised by the European Commission;
- for local authorities' powers to be extended under the current Local Air Quality Management framework, including responsibilities to improve local air quality and to reduce public exposure to excessive levels of air pollution;
- for "air quality partners" to have a duty to share responsibility for dealing with local air pollution among public bodies; and
- the introduction of a new power for the government to compel vehicle manufacturers to recall vehicles and non-road mobile machinery if they are found not to comply with the environmental standards that they are legally required to meet.

A.1.2 Air Quality Standards Regulations 2010 (amended in 2016)

The Air Quality Standards Regulations 2010 (amended in 2016)¹ defines the policy framework for 12 air pollutants known to have harmful effects on human health or the natural environment. The Secretary of State for the Environment has the duty of ensuring compliance with the air quality limit values.

Some pollutants have standards expressed as annual average concentrations due to the chronic way in which they affect health or the natural environment, i.e., effects occur after a prolonged period of exposure to elevated concentrations. Other pollutants have standards expressed as 24-hour or 1-hour average

²⁴ Environment Act 2021. Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>. Accessed [Accessed September 2023].

²⁵ Environment Act 1995, Chapter 25, Part IV Air Quality

²⁶ Clean Air Act 1993. Available at: <https://www.legislation.gov.uk/ukpga/1993/11/contents>. [Accessed September 2023]

²⁷ Environmental Protection Act 1990. Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents>. [Accessed September 2023]

concentrations due to the acute way in which they affect health or the natural environment, i.e., after a relatively short period of exposure. Some pollutants have standards expressed in terms of both long and short-term concentrations. Air quality limit values and objectives are quality standards for clean air. The regulation sets out the national air quality standards for NO₂, PM₁₀ and PM_{2.5}.

A.1.3 Medium Combustion Plant Directive (MCPD)

In November 2015, the European Commission published the Medium Combustion Plant (MCP) Directive 2015/2193²⁸ on the limitation of emissions of certain pollutants into the air from MCPs.

The MCP Directive regulates pollutant emissions from the combustion of fuels in plants with a rated thermal input equal to, or greater than, 1 megawatt (MWth) and less than 50 MWth.

The MCP Directive regulates emissions of sulphur dioxide (SO₂), NO_x and dust to the air only, with the aim of reducing those emissions and the risks to human health and the environment they may cause. It also lays down rules to monitor emissions of carbon monoxide (CO) but does not set an emission limit value (ELV) for CO.

The ELVs set out in the MCP Directive will have to be applied from 20 December 2018 for new plants depending on their size.

For those MCPs which are emergency use and operate less than 500 hours per year as a rolling average over a period of five years, the emission limit values set out in the MCPD can be exempt, however an MCP permit will still be required.

²⁸ Directive (EU) 2015/2193 of the European Parliament and the Council of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants

A.1.4 Industrial Emissions Directive (IED)

The Industrial Emissions Directive (IED) (2010/75/EU)²⁹ was transposed into UK law³⁰ through the Pollution Prevention and Control (PPC) system defined in the Environmental Permitting Regulations³¹. It is the regulatory regime being followed by the EA.

The IED regulates pollutant emissions of NO_x, dust, SO₂ and CO to the air from combustion of fuel in plants with an aggregated rated thermal input equal or greater than 50MWth.

IED ELVs for liquid fuel combustion plants (e.g., diesel generators) are provided in Annex V, Part 1 of the IED. However, for each of those turbines and engines which are emergency use and operate due to testing or emergency for less than 500 hours per year, the emission limit values defined in the IED under 1.1A combustion Chapter III Annex V do not apply.

A.1.5 US Acute Exposure Guideline Levels (AEGLs)

In the United States, the Superfund Amendments and Reauthorization Act³² (SARA) of 1986 required the US Environmental Protection Agency (EPA) to identify Extremely Hazardous Substances (EHSs) and, to provide guidance for conducting health hazard assessments for the development of emergency response plans for sites where EHSs are produced, stored, transported, or used. The Agency for Toxic Substances and Disease Registry (ATSDR) were also required to determine whether chemical substances identified either at hazardous waste sites or in the environment could present a public health concern.

Subsequently, Standard Operating Procedures for Developing Acute Exposure Guideline Levels for Hazardous Substances³³ was published in 2001, providing updated procedures, methodologies, and other guidelines used by the National Advisory Committee (NAC) on Acute Exposure Guideline Levels for Hazardous Substances and the Committee on Acute Exposure Guideline Levels (AEGLs) in developing the AEGL values. There are now AEGLs for more than 270 extremely hazardous substances, which were developed using the 2001 report and input from members of EPA, various governmental organisations and sectors, the chemical industry, academia and the private sector.

AEGLs represent threshold exposure limits (exposure levels below which adverse health effects are not likely to occur) for the general public and are applicable to emergency exposures ranging from 10 minutes to 8 hours.

There are three levels of AEGL, which are defined as follows:

- *“AEGL-1 is the airborne concentration (expressed as ppm [parts per million] or mg/m³ [milligrams per cubic meter]) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.*
- *AEGL-2 is the airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.*

²⁹ Directive (EU) 2010/75/EU of the European Parliament and the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)

³⁰ UK Government. (2016). The Air Quality Standards Regulations 2016, SI 2010/1001; <http://www.legislation.gov.uk/uk/si/2016/1184/made> [Accessed September 2023]

³¹ Environmental Permitting (England and Wales) (Amendment) Regulations 2018

³² USEPA (1986) The Superfund Amendments and Reauthorization Act

³³ National Academies (2001) Standing Operating Procedures for Developing Acute Exposure Guideline Levels for Hazardous Chemicals

- *AEGL-3 is the airborne concentration (expressed as ppm or mg/m³) of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening adverse health effects or death.”*

The EA makes reference in the Data Centre Draft Industry Guidance (detailed in section A.3.2) to including a comparison of NO₂ with the AEGLs, for consideration of the potential impact from any emergency operation scenarios. Therefore, these AEGLs have been considered in the assessment. The AEGLs for NO₂ are provided in Table 24 below for hourly mean NO₂, 30-minute mean NO₂ and 10-minute mean NO₂.

Table 24 AEGLs 1-3 for NO₂

AEGL	10-minute mean	30-minute mean	Hourly mean
ppm			
AEGL 1	0.5	0.5	0.5
AEGL 2	20	15	12
AEGL 3	34	25	20
µg/m ³			
AEGL 1	956.3	956.3	956.3
AEGL 2	38,250	28,687.5	22,950
AEGL 3	65,025	47,812.5	38,250
Note: the AEGLs were converted from ppm to µg/m ³ using the Defra conversion factor for NO _x			

A.2 Planning policy and guidance

A.2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)³⁴ was updated in July 2021 with the purpose of planning to achieve sustainable development. Paragraph 186 of the NPPF on air quality states that:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.”

In addition, paragraph 105 states that:

“The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.”

Paragraph 174 discusses how planning policies and decisions should contribute to and enhance the natural and local environment. In relation to air quality, NPPF notes that this can be achieved by:

“e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.”

³⁴ Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework

A.2.2 Planning Practice Guidance (2019)

Planning Practice Guidance (PPG)³⁵ on various topics, including air quality was developed in order to support the NPPF. The guidance provides a concise outline as to how air quality should be considered in order to comply with the NPPF and states when air quality is considered relevant to a planning application. This includes factors such as changes in traffic volumes, vehicle speeds, congestion or traffic composition, the introduction of new point sources of air pollution, exposure of people to existing sources of air pollutants, and the potential to give rise to air quality impacts at nearby sensitive receptors.

A.2.3 Clean Air Strategy

The Department for Environment, Food and Rural Affairs (Defra) Clean Air Strategy³⁶ was published in 2019 and sets targets for improving air quality across the country. It includes actions for reducing emissions from various sources, such as transport, domestic activities, farming and industry. There is also a long-term target for reducing population exposure to PM_{2.5} concentrations to meet the World Health Organisation's (WHO) target of 10µg/m³ as an annual mean. In particular, the Clean Air Strategy states:

“New legislation will create a stronger and a more coherent framework for action to tackle air pollution. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem. These will support the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanism.”

A.2.4 Local Air Quality Management Policy and Technical Guidance

The 2022 policy guidance note from Defra, LAQM.PG(22)¹³, provides additional guidance on the links between transport and air quality and guidance on the links between air quality and the land-use planning system. It summarises the main ways in which the land-use planning system can help deliver compliance with the air quality objectives. This guidance is relevant to any external organisations who may wish to engage with the local authority to assist in the delivery of their statutory duties on managing air quality.

The LAQM Technical Guidance, TG(22)¹³ is designed to support local authorities in carrying out their duties to review and assess air quality in their area. It provides detailed guidance on how to assess the impact of measures using existing air quality tools.

³⁵ Department for Communities and Local Government (2019): ‘Planning Practice Guidance: Air Quality’

³⁶ Defra (2019) Clean Air Strategy 2019.

A.3 Permitting Guidance

A.3.1 Integrated Pollution Prevention and Control (IPPC) Horizontal Guidance Note H1

The IPPC H1 guidance³⁷ was produced by the EA for England and Wales in collaboration with the Scottish Environment Protection Agency (SEPA) and the Northern Ireland Environment and Heritage Service (EHS). The IPPC is a regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. The purpose of the H1 guidance note is to provide supplementary information relevant to all sectors, for the appraisal of Best Available Techniques (BAT) and to carry out an appropriate environmental assessment of the overall impact of the emissions resulting from a Proposed Development.

More recently the EA has revised the guidance and has developed a web-based version³⁸, with the latest revision date being May 2021. The EA guidance has been followed in the assessment and, where applicable, reference is also made to the EA air emissions risk assessment guidance. For convenience, the reference to ‘H1’ is retained.

A.3.2 Data Centre Draft Guidance

The Environment Agency have published a working draft guide³⁹ on the approach to the permitting and regulatory aspects for Data Centre within the context of the IED and Environmental Permitting Regulations for 1.1A Combustion Activities ‘Chapter II’ sites aggregated to >50MWth input.

The Frequently Asked Questions (FAQs) also have relevance for Data Centres which come under the MCPD specified generators. i.e., plant which is less than aggregated 50MWth but which falls under the Tranche A or Tranche B criteria for generating power (unless it is an ‘excluded generator’ due to <50hours testing per year).

The document is not presently an official release but forms the basis for discussion of a common methodology and liaison with individual operators and their industry association. The document states that it must be recognised that the document is not a legal document intending to create or modify the law as stated in statute; so ultimately Data Centre permitting and day to day regulation must necessarily be on a site-specific basis.

³⁷ IPPC H1 (2003) Environmental Assessment and Appraisal of BAT

³⁸ EA (2021) Air emissions risk assessment for your environmental permit Available at: <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

³⁹ Environment Agency (2022) Data Centre FAQ Headline Approach.

A.3.3 Guidance on Land-use Planning & Development Control

The 2017 Land-Use Planning & Development Control guidance document⁴⁰ produced by Environmental Protection UK (EPUK) and the IAQM provides a framework for professionals operating in the planning system to provide a means of reaching sound decisions, with regard to the air quality implications of development proposals.

The document provides guidance on when air quality assessments are required by providing screening criteria regarding the size of a development, changes to traffic flows/composition, energy facilities or combustion processes used.

⁴⁰ EPUK and IAQM (2017) Land-use Planning & Development Control: Planning for Air Quality, (v1.2).

A.4 Local Policy and Guidance

A.4.1 London Borough of Hillingdon Air Quality Action Plan 2019 – 2024

The LBH air quality action plan⁴¹ outlines the action LBH will take to improve air quality in the London Borough of Hillingdon between 2019 and 2024 and replaces the previous action plan that ran from 2004 to 2018. In guidance with the Greater London Authority (GLA), LBH have developed actions under seven broad themes:

1. Monitoring and other core statutory duties;
2. Emissions from developments and buildings;
3. Public health and awareness training;
4. Delivery servicing and freight;
5. Borough fleet actions;
6. Localised solutions; and
7. Cleaner transport.

The council will prioritise the following actions that will be taken from 2019 to 2024:

- lead by example in relation to emissions from the Council's fleet and building stock;
- reduce public exposure and improve air quality around schools;
- prioritise the implementation of improvement strategies in the AQ Focus Areas;
- ensure the integration of Transport for London's Healthy Streets Approach in relevant council work programmes, ensuring that air quality is specifically addressed;
- ensure the planning system supports the achievement of air quality improvements in relation to new developments;
- raise public awareness via targeted campaigns for example concerning air quality risks and alternatives to car travel;
- promote the use of greener walking and cycling routes to help the delivery of the Council's transport objective of an increased mode share for walking and cycling; and
- work with external stakeholders where they are responsible for sources of pollution that are outside the control of the Council. We will also lobby regional and central government on policies and issues beyond Hillingdon's influence.

The priorities are cross referenced in the Plan to show how they incorporate the recommendations of the Residents' and Environmental Services Policy Overview Committee (RESPOC) and the GLA selected measures. The Plan will be reviewed again in 2024.

The AQAP will be subject to an annual review, appraisal of progress and reporting to the Senior Management Team. Progress each year will be reported in the Hillingdon Annual Status Reports, as part of their statutory London Local Air Quality Management duties.

⁴¹ London Borough of Hillingdon Air Quality Action Plan 2019 – 2024. Available at: <http://www.hillingdon-air.info/laqm.php> [Accessed September 2023]

A.4.2 London Borough of Hillingdon Local Plan

The London Borough of Hillingdon Local Plan⁴² was adopted by LBH in November 2012 and updated in January 2020 through Local Plan Part 2: Development Management Policies. The Local Plan sets out the overall special strategy and planning policies for Hillingdon until the year 2026.

Policy EM8: Land, Water, Air and Noise in Part 1 of the Local Plan states under the subsection “air quality” that:

All development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.

All major development within the Air Quality Management Area (AQMA) should demonstrate air quality neutrality (no worsening of impacts) where appropriate; actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels; deliver increased planting through soft landscaping and living walls and roofs; and provide a management plan for ensuring air quality impacts can be kept to a minimum.

The Council seeks to reduce the levels of pollutants referred to in the Government’s National Air Quality Strategy and will have regard to the Mayor’s Air Quality Strategy. London Boroughs should also take account of the findings of the Air Quality Review and Assessments and Actions plans, in particular where Air Quality Management Areas have been designated.

The Council has a network of Air Quality Monitoring stations but recognises that this can be widened to improve understanding of air quality impacts. The Council may therefore require new major development in an AQMA to fund additional air quality monitoring stations to assist in managing air quality improvements.

Policy DMEI 14: Air Quality in Part 2 of the Local Plan states:

- a) Development proposals should demonstrate appropriate reductions in emissions to sustain compliance with and contribute towards meeting EU limit values and national air quality objectives for pollutants.
- b) Development proposals should, as a minimum:
 - i. Be at least “air quality neutral”;
 - ii. include sufficient mitigation to ensure there is no unacceptable risk from air pollution to sensitive receptors, both existing and new; and
 - iii. actively contribute towards the improvement of air quality, especially within the Air Quality Management Area.

⁴² London Borough of Hillingdon Local Plan. Available at: <https://www.hillingdon.gov.uk/local-plan> [Accessed September 2023]

Appendix B Model Inputs

B.1.1 Generator parameters

The Proposed Development comprises 16 generators with parameters detailed in Table 25.

Table 25 Generator information

Description	Units	Parameter modelled
Make and model	-	CAT 3516E with SCR
Number of generators	-	16
Power output	kW	2400 (100% load)
Stack height	m	14.45
Building height	m	14.5
Exit diameter	m	3.5
Area	m ²	9.6
Generator intake data		
Air intake (ambient temperature, 11.9°C)	m ³ /s	35.5
Air intake (STP)	m ³ /s	34.0
Cooling air temperature + ambient temperature (40°C + 11.9°C)	°C	51.9

Generators parameters for Testing Scenario 1 are shown below in Table 26.

Table 26 Generator parameters for Testing Scenario 1 (10% load, offload testing)

Column Reference	Description	Units	Parameter modelled
A	Power output	kW	368
B	% H ₂ O	%	6.41
C	% O ₂	%	12.7
Exhaust data			
D	Exhaust volume (actual)	m ³ /min	111.4
E	Exhaust Volumetric flow rate (actual)	Nm ³ /s	1.86
F	Exhaust temperature	°C	356.3
G	Exhaust volume (wet)	m ³ /min	48.3
H	Exhaust volume (dry)	m ³ /min	45.2
Generator intake data			
I	Inlet air volume	m ³ /min	53.9
J	Generator intake (at STP)	m ³ /s	0.85
K	Cooling air at STP	m ³ /s	33.2
Combined data			
L	Combined air temperature	°C	55.7
M	Combined exhaust volume	m ³ /s	40.88
N	Combined Exhaust velocity	m/s	4.25
Emission data			
O	Emission concentration data (at 5% O ₂ at reference conditions)		
P	Exhaust volume (dry, 5% O ₂)	m ³ /min	21.8
Q	NO _x	mg/Nm ³	4452
R	PM ₁₀	mg/Nm ³	16.3
S	CO	mg/Nm ³	880
T	NO _x emission rate	g/s	1.62
U	PM ₁₀ emission rate	g/s	0.007
V	CO emission rate	g/s	0.31
Notes: Emission rates of 10% assumed based on real world testing scenario			

Generators parameters for Testing Scenario 2 are shown below in Table 27.

Table 27: Generator parameters for scenario 2 (20 minutes at 100% load and then 40 minutes at 75% load utilising SCR)

Column Reference	Description	Units	Parameter modelled
A	Power output	kW	2010
B	% H ₂ O	%	8.42
C	% O ₂	%	8.93
Exhaust data			
D	Exhaust volume (actual)	m ³ /min	460.5
E	Exhaust Volumetric flow rate (actual)	Nm ³ /s	7.68
F	Exhaust temperature	°C	500.3
G	Exhaust volume (wet)	m ³ /min	162.6
H	Exhaust volume (dry)	m ³ /min	148.9
Generator intake data			
I	Inlet air volume	m ³ /min	173.9
J	Generator intake (at STP)	m ³ /s	2.75
K	Cooling air at STP	m ³ /s	31.3
Combined data			
L	Combined air temperature	°C	67.7
M	Combined exhaust volume	m ³ /s	42.4
N	Combined Exhaust velocity	m/s	4.41
Emission data			
O	Emission concentration data (at 5% O ₂ at reference conditions)		
P	Exhaust volume (dry, 5% O ₂)	m ³ /min	37.6
Q	NO _x	mg/Nm ³	1938 - Warm-up (pre-SCR) 86.0 - Effective SCR treatment
R	PM ₁₀	mg/Nm ³	33
S	CO	mg/Nm ³	491.6
T	NH ₃	mg/Nm ³	5.57
U	NO _x emission rate	g/s	4.19 - Warm-up (pre-SCR) 0.97 - Effective SCR treatment 2.04 – time weighted average*
V	PM ₁₀ emission rate	g/s	0.07
W	CO emission rate	g/s	0.85
X	NH ₃ emission rate	g/s	0.01
Notes: *The emission rate is time weighted to account for the SCR generator requiring approximately 30 minutes to warm up and become effective. The first half hour is assumed to be the standard G10 generator emissions and			

Generators parameters for Emergency Scenario are shown below in Table 28.

Table 28: Generator parameters for the Emergency Scenario

Column Reference	Description	Units	Parameter modelled
A	Power output	kW	2649
B	% H ₂ O	%	8.64
C	% O ₂	%	8.48
Exhaust data			
D	Exhaust volume (actual)	m ³ /min	558.3
E	Exhaust Volumetric flow rate (actual)	Nm ³ /s	9.31
F	Exhaust temperature	°C	492.7
G	Exhaust volume (wet)	m ³ /min	199.1
H	Exhaust volume (dry)	m ³ /min	181.9
Generator intake data			
I	Inlet air volume	m ³ /min	208.6
J	Generator intake (at STP)	m ³ /s	3.30
K	Cooling air at STP	m ³ /s	30.70
Combined data			
L	Combined air temperature	°C	71.2
M	Combined exhaust volume	m ³ /s	42.9
N	Combined Exhaust velocity	m/s	4.46
Emission data			
O	Emission concentration data (at 5% O ₂ at reference conditions)		
P	Exhaust volume (dry, 5% O ₂)	m ³ /min	37.6
Q	NO _x	mg/Nm ³	86.0
R	PM ₁₀	mg/Nm ³	28
S	CO	mg/Nm ³	389.4
T	NH ₃	mg/Nm ³	5.57
U	NO _x emission rate	g/s	0.21
V	PM ₁₀ emission rate	g/s	0.07
W	CO emission rate	g/s	0.85
X	NH ₃ emission rate	g/s	0.01
Notes: * Emission rates assumed at 100% load to be conservative.			

The generators are proposed to have individual stack exhausts. The coordinates of the stacks for the generators are detailed in Table 29. All stacks are proposed to be 14.45m.

Table 29 Stack locations

Source ID	X (m)	Y (m)
Stack 1	508014	179547
Stack 2	508015	179552
Stack 3	508016	179558
Stack 4	508017	179563
Stack 5	508018	179569
Stack 6	508019	179574
Stack 7	508020	179580
Stack 8	508021	179585
Stack 9	508022	179590
Stack 10	508023	179595
Stack 11	508025	179606
Stack 12	508026	179612
Stack 13	508027	179617
Stack 14	508028	179622
Stack 15	508029	179628
Stack 16	508024	179601

Appendix C Receptors

C.1 Human Receptors

Table 30 Assessed human receptors

ID	Receptor	National Grid Reference		Type
		X	Y	
R0	Dwelling on Denbigh Drive	508162	179620	Residential
R1	Dwelling on Denbigh Drive	508156	179589	Residential
R2	Dwelling on Denbigh Drive	508149	179561	Residential
R3	Dwelling on Denbigh Drive	508159	179522	Residential
R4	Dwelling on Denbigh Drive	508162	179486	Residential
R5	Dwelling on Denbigh Drive	508177	179460	Residential
R6	Dwelling on Nine Acres Close	508138	179482	Residential
R7	Dwelling on Nine Acres Close	508100	179481	Residential
R8	Dwelling on Nine Acres Close	508064	179491	Residential
R9	Dwelling on Nine Acres Close	508039	179473	Residential
R10	Dwelling on Nine Acres Close	508034	179414	Residential
R11	Dwelling on Nine Acres Close	508018	179363	Residential
R12	Dwelling on Nine Acres Close	508020	179311	Residential
R13	Dwelling on Nine Acres Close	508092	179352	Residential
R14	Nine Acres Hotel (ST)	508089	179420	Hotel
R15	Dwelling on Nine Acres Close	508149	179401	Residential
R16	Dwelling on Nine Acres Close	508190	179416	Residential
R17	Dwelling on Conway Drive	508236	179419	Residential
R18	Dwelling on Denbigh Drive	508224	179476	Residential
R19	Dwelling on Denbigh Drive	508202	179525	Residential
R20	Dwelling on Denbigh Drive	508228	179560	Residential
R21	Dwelling on Denbigh Drive	508194	179627	Residential
R22	Dwelling on Denbigh Drive	508266	179594	Residential
R23	Dwelling on Stormount Drive	508365	179567	Residential
R24	Dwelling on Conway Drive	508298	179503	Residential
R25	Dwelling on Conway Drive	508295	179464	Residential
R26	Sandgate Football Club (ST)	508097	179237	Youth space
R27	Dwelling on Bourne Avenue	508130	179303	Residential
R28	Dwelling on Bourne Avenue	508196	179342	Residential
R29	Dwelling on Bourne Circus	508303	179407	Residential
R30	Dwelling on Bourne Avenue	508407	179375	Residential
R31	Dwelling on Snowdon Crescent	508438	179423	Residential
R32	Dwelling on Snowdon Crescent	508442	179464	Residential

ID	Receptor	National Grid Reference		Type
		X	Y	
R33	Dwelling on Bourne Circus	508302	179343	Residential
R34	Dwelling on Skipton Drive	508188	179197	Residential
R35	Dwelling on Skipton Drive	508128	179002	Residential
R36	Dwelling on Carnarv Drive	508235	179077	Residential
R37	Dwelling on Carnarv Drive	508252	179297	Residential
R38	Tiny Gems Day Nursery (ST)	508390	179110	School
R39	Sunflower House Nursery (ST)	508964	179113	School
R40	Harlington School (ST)	508586	178796	School
R41	Christ Church Hayes (ST)	508329	179210	School
R42	Pinkwell Primary School (ST)	508498	178826	School
R43	Tina Tiney Home Nursery (ST)	507561	179800	School
R44	Emden Close Play Area (ST)	507475	179859	Youth space
R45	Busy Bees Nursery at Heathrow (ST)	507432	180016	School
R46	Stockley Park Golf Club (ST)	508085	180491	Recreational space
R47	Stockley Park Golf Club (ST)	508435	180152	Recreational space
R48	Dwelling on Glamis Crescent	508381	179255	Residential
R49	Dwelling on Waltham Avenue	508471	179199	Residential
R50	Dwelling on Bourne Avenue	508559	179329	Residential
R51	Dwelling on Waltham Avenue	508596	179251	Residential
R52	Dwelling on Waltham Avenue	508552	179168	Residential
R53	Dwelling on Seaton Road	508524	179095	Residential
R54	Dwelling on Stormount Drive	508547	179498	Residential
R55	Dwelling on Glamis Crescent	508431	179294	Residential
R56	Dwelling on Clevedon Gardens	508590	179416	Residential
R57	Dwelling on Bourne Avenue	508649	179348	Residential
R58	Dwelling on Burnham Gardens	508672	179473	Residential
R59	Dwelling on Marlow Gardens	508756	179416	Residential
R60	Dwelling on Bourne Avenue	508911	179342	Residential
R61	Dwelling on Guinness Close	508929	179457	Residential
R62	Dwelling on Bourne Avenue	508727	179241	Residential
R63	Dwelling on Waltham Avenue	508943	179238	Residential
R64	Dwelling on Bourne Avenue	508803	179321	Residential
R65	Dwelling on Mildred Avenue	508720	179149	Residential
R66	Dwelling on Seaton Road	508639	179056	Residential
R67	Dwelling on Wentworth Crescent	508786	179050	Residential
R68	Dwelling on Mildred Avenue	508758	178981	Residential

ID	Receptor	National Grid Reference		Type
		X	Y	
R69	Dwelling on Mildred Avenue	508710	178847	Residential
R70	Dwelling on Dawley Road	509054	178994	Residential
R71	Dwelling on Seaton Road	508547	178932	Residential
R72	Dwelling on Pinkwell Avenue	508976	178882	Residential
R73	Dwelling on Oakington Avenue	508895	178793	Residential
R74	Dwelling on Mulberry Crescent	507592	179687	Residential
R75	Dwelling on Mulberry Crescent	507417	179752	Residential
R76	Dwelling on Jasmine Terrace	507350	179651	Residential
R77	Dwelling on Lavender Rise	507459	179616	Residential
R78	Dwelling on Kebony Close	507284	179777	Residential
R79	Dwelling on Mulberry Cresent	507222	179696	Residential
R80	Dwelling on Potters Way	507135	179553	Residential
R81	Dwelling on Rutters Close	507183	179850	Residential
R82	Dwelling on Lavender Rise	507347	179533	Residential
R83	Dwelling on Botwell Common Road	508590	180658	Residential
R84	Dwelling on Botwell Common Road	508802	180708	Residential
R85	Gurdwara Hayes (ST)	509485	180185	Religious space
R86	Lake Farm Park Academy (ST)	509286	180317	School
R87	Dwelling on Botwell Common Road	509148	180577	Residential
R88	Dwelling on Almond Avenue	507275	179381	Residential
R89	Dwelling on Smaldon Close	507256	179220	Residential
R90	Dwelling on South Close	507061	179406	Residential
R91	Dwelling on Hazel Avenue	507191	179297	Residential
R92	Bell Farm Church	507076	179216	Residential
R93	Dwelling on Blackthorn Avenue	507232	179053	Residential
R94	Residential dwelling on Nine acres close	508095	179455	Residential
R95	Residential dwelling on Nine acres close	508124	179457	Residential
R96	Residential dwelling on Nine acres close	508070	179461	Residential

C.2 Ecological Receptors

Table 31 Assessed ecological receptors

ID	Receptor	National Grid Reference		Type
		X	Y	
ER01	South West London Waterbodies 1	503052	175538	SPA, Ramsar, SSSI
ER02	South West London Waterbodies 2	504576	174211	SPA, Ramsar, SSSI
ER03	South West London Waterbodies 3	505304	174124	SPA, Ramsar, SSSI
ER04	South West London Waterbodies 4	500573	175085	SPA, Ramsar, SSSI
ER05	South West London Waterbodies 5	501398	174145	SPA, Ramsar, SSSI
ER06	South West London Waterbodies 6	511637	170978	SPA, Ramsar, SSSI
ER07	South West London Waterbodies 7	5119678	170433	SPA, Ramsar, SSSI
ER08	Carp Ponds and Broads Dock	507957	179720	LWS
ER09	Stockley Road Rough	507553	179346	LWS
ER10	London's Canals	508104	179827	LWS, Fish Migratory Route
ER11	Stockley Business Park Lakes & Meadows	508088	179855	LWS
ER12	Iron Bridge Road Railsides (The Piggeries) 1	507606	179825	LWS
ER13	Iron Bridge Road Railsides (The Piggeries) 2	507617	179862	LWS
ER14	Stockley Business Park Lakes & Meadows	508099	180033	LWS
ER15	Bolingbroke Way Sunken Pasture	508737	180244	LWS
ER16	Lake Farm Country Park	508875	180057	LWS
ER17	Wall Garden Farm Sand Heaps	508045	178454	LWS
ER18	Cranford Countryside Park and Open Space	509422	178303	LWS
ER19	Cranford Lane Gravel Workings 1	509435	178074	LWS
ER20	Cranford Lane Gravel Workings 2	509498	178266	LWS
ER21	Stockley Park Country Park	507244	180526	LWS

Appendix D Modelling Results

D.1 Testing Scenario 1

D.1.1 NO₂ results for Testing scenario 1

Table 32 NO₂ annual mean results (µg/m³)

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R1	508156	179589	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R2	508149	179561	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R3	508159	179522	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R4	508162	179486	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R5	508177	179460	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R6	508138	179482	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R7	508100	179481	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R8	508064	179491	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R9	508039	179473	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R10	508034	179414	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R11	508018	179363	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R12	508020	179311	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R13	508092	179352	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R14	508089	179420	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R15	508149	179401	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R16	508190	179416	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R17	508236	179419	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R18	508224	179476	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R19	508202	179525	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R20	508228	179560	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R21	508194	179627	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R22	508266	179594	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R23	508365	179567	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R24	508298	179503	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R25	508295	179464	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R26	508097	179237	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R27	508130	179303	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R28	508196	179342	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R29	508303	179407	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R30	508407	179375	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R31	508438	179423	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R32	508442	179464	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R33	508302	179343	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R34	508188	179197	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R35	508128	179002	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R36	508235	179077	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R37	508252	179297	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R38	508390	179110	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R39	508964	179113	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R40	508586	178796	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R41	508329	179210	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R42	508498	178826	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R43	507561	179800	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R44	507475	179859	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R45	507432	180016	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R46	508085	180491	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R47	508435	180152	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R48	508381	179255	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R49	508471	179199	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R50	508559	179329	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R51	508596	179251	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R52	508552	179168	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R53	508524	179095	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R54	508547	179498	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R55	508431	179294	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R56	508590	179416	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R57	508649	179348	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R58	508672	179473	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R59	508756	179416	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R60	508911	179342	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R61	508929	179457	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R62	508727	179241	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R63	508943	179238	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R64	508803	179321	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R65	508720	179149	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R66	508639	179056	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R67	508786	179050	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R68	508758	178981	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R69	508710	178847	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R70	509054	178994	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R71	508547	178932	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R72	508976	178882	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R73	508895	178793	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R74	507592	179687	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R75	507417	179752	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R76	507350	179651	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R77	507459	179616	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R78	507284	179777	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R79	507222	179696	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R80	507135	179553	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R81	507183	179850	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R82	507347	179533	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R83	508590	180658	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R84	508802	180708	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R85	509485	180185	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R86	509286	180317	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R87	509148	180577	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R88	507275	179381	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R89	507256	179220	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R90	507061	179406	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R91	507191	179297	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R92	507076	179216	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R93	507232	179053	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R94	508095	179455	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R95	508124	179457	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R96	508070	179461	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
AQS: 40µg/m ³ *Results are to 2d.p.									

Table 33 NO₂ 99.79th percentile hourly mean results (µg/m³)

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	508162	73.2	2022	9.10	5%	82.3	41%	Insignificant
R1	508156	508156	73.2	2022	5.36	3%	78.6	39%	Insignificant
R2	508149	508149	73.2	2022	7.46	4%	80.7	40%	Insignificant
R3	508159	508159	73.2	2022	7.26	4%	80.5	40%	Insignificant
R4	508162	508162	73.2	2022	4.77	2%	78.0	39%	Insignificant
R5	508177	508177	73.2	2022	4.09	2%	77.3	39%	Insignificant
R6	508138	508138	73.2	2022	4.32	2%	77.5	39%	Insignificant
R7	508100	508100	73.2	2021	5.05	3%	78.2	39%	Insignificant
R8	508064	508064	73.2	2022	10.01	5%	83.2	42%	Insignificant
R9	508039	508039	73.2	2018	9.46	5%	82.7	41%	Insignificant
R10	508034	508034	73.2	2018	8.90	4%	82.1	41%	Insignificant
R11	508018	508018	73.2	2018	3.51	2%	76.7	38%	Insignificant
R12	508020	508020	73.2	2018	3.25	2%	76.4	38%	Insignificant
R13	508092	508092	73.2	2022	3.62	2%	76.8	38%	Insignificant
R14	508089	508089	73.2	2022	4.00	2%	77.2	39%	Insignificant
R15	508149	508149	73.2	2022	3.58	2%	76.8	38%	Insignificant
R16	508190	508190	73.2	2022	3.70	2%	76.9	38%	Insignificant
R17	508236	508236	73.2	2022	3.61	2%	76.8	38%	Insignificant
R18	508224	508224	73.2	2022	4.02	2%	77.2	39%	Insignificant
R19	508202	508202	73.2	2022	7.86	4%	81.1	41%	Insignificant
R20	508228	508228	73.2	2022	4.83	2%	78.0	39%	Insignificant
R21	508194	508194	73.2	2022	6.68	3%	79.9	40%	Insignificant
R22	508266	508266	73.2	2022	5.10	3%	78.3	39%	Insignificant
R23	508365	508365	73.2	2018	3.96	2%	77.2	39%	Insignificant
R24	508298	508298	73.2	2018	4.02	2%	77.2	39%	Insignificant
R25	508295	508295	73.2	2018	3.81	2%	77.0	39%	Insignificant
R26	508097	508097	73.2	2022	2.91	1%	76.1	38%	Insignificant
R27	508130	508130	73.2	2022	3.32	2%	76.5	38%	Insignificant
R28	508196	508196	73.2	2022	3.30	2%	76.5	38%	Insignificant
R29	508303	508303	73.2	2022	3.38	2%	76.6	38%	Insignificant
R30	508407	508407	73.2	2018	3.14	2%	76.3	38%	Insignificant
R31	508438	508438	73.2	2018	3.27	2%	76.5	38%	Insignificant
R32	508442	508442	73.2	2018	3.25	2%	76.5	38%	Insignificant
R33	508302	508302	73.2	2022	3.08	2%	76.3	38%	Insignificant
R34	508188	508188	73.2	2022	2.89	1%	76.1	38%	Insignificant
R35	508128	508128	73.2	2022	2.50	1%	75.7	38%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R36	508235	508235	73.2	2022	2.61	1%	75.8	38%	Insignificant
R37	508252	508252	73.2	2022	3.29	2%	76.5	38%	Insignificant
R38	508390	508390	73.2	2022	2.68	1%	75.9	38%	Insignificant
R39	508964	508964	73.2	2022	2.39	1%	75.6	38%	Insignificant
R40	508586	508586	73.2	2021	2.36	1%	75.6	38%	Insignificant
R41	508329	508329	73.2	2022	2.86	1%	76.1	38%	Insignificant
R42	508498	508498	73.2	2021	2.35	1%	75.6	38%	Insignificant
R43	507561	507561	73.2	2020	5.09	3%	78.3	39%	Insignificant
R44	507475	507475	73.2	2020	4.33	2%	77.5	39%	Insignificant
R45	507432	507432	73.2	2022	4.22	2%	77.4	39%	Insignificant
R46	508085	508085	73.2	2021	4.54	2%	77.7	39%	Insignificant
R47	508435	508435	73.2	2019	5.24	3%	78.4	39%	Insignificant
R48	508381	508381	73.2	2022	2.85	1%	76.1	38%	Insignificant
R49	508471	508471	73.2	2018	2.66	1%	75.9	38%	Insignificant
R50	508559	508559	73.2	2018	3.09	2%	76.3	38%	Insignificant
R51	508596	508596	73.2	2018	2.85	1%	76.0	38%	Insignificant
R52	508552	508552	73.2	2022	2.62	1%	75.8	38%	Insignificant
R53	508524	508524	73.2	2022	2.49	1%	75.7	38%	Insignificant
R54	508547	508547	73.2	2018	2.95	1%	76.1	38%	Insignificant
R55	508431	508431	73.2	2018	2.86	1%	76.1	38%	Insignificant
R56	508590	508590	73.2	2018	2.77	1%	76.0	38%	Insignificant
R57	508649	508649	73.2	2021	2.80	1%	76.0	38%	Insignificant
R58	508672	508672	73.2	2022	2.80	1%	76.0	38%	Insignificant
R59	508756	508756	73.2	2022	2.63	1%	75.8	38%	Insignificant
R60	508911	508911	73.2	2022	2.60	1%	75.8	38%	Insignificant
R61	508929	508929	73.2	2022	2.63	1%	75.8	38%	Insignificant
R62	508727	508727	73.2	2021	2.72	1%	75.9	38%	Insignificant
R63	508943	508943	73.2	2022	2.48	1%	75.7	38%	Insignificant
R64	508803	508803	73.2	2022	2.60	1%	75.8	38%	Insignificant
R65	508720	508720	73.2	2021	2.79	1%	76.0	38%	Insignificant
R66	508639	508639	73.2	2022	2.56	1%	75.8	38%	Insignificant
R67	508786	508786	73.2	2021	2.64	1%	75.8	38%	Insignificant
R68	508758	508758	73.2	2018	2.45	1%	75.7	38%	Insignificant
R69	508710	508710	73.2	2022	2.28	1%	75.5	38%	Insignificant
R70	509054	509054	73.2	2022	2.24	1%	75.4	38%	Insignificant
R71	508547	508547	73.2	2021	2.47	1%	75.7	38%	Insignificant
R72	508976	508976	73.2	2021	2.26	1%	75.5	38%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R73	508895	508895	73.2	2018	2.22	1%	75.4	38%	Insignificant
R74	507592	507592	73.2	2018	11.89	6%	85.1	43%	Insignificant
R75	507417	507417	73.2	2020	3.70	2%	76.9	38%	Insignificant
R76	507350	507350	73.2	2020	3.39	2%	76.6	38%	Insignificant
R77	507459	507459	73.2	2020	3.67	2%	76.9	38%	Insignificant
R78	507284	507284	73.2	2020	3.12	2%	76.3	38%	Insignificant
R79	507222	507222	73.2	2020	2.79	1%	76.0	38%	Insignificant
R80	507135	507135	73.2	2020	2.82	1%	76.0	38%	Insignificant
R81	507183	507183	73.2	2019	2.80	1%	76.0	38%	Insignificant
R82	507347	507347	73.2	2020	3.00	2%	76.2	38%	Insignificant
R83	508590	508590	73.2	2019	2.74	1%	75.9	38%	Insignificant
R84	508802	508802	73.2	2019	2.35	1%	75.5	38%	Insignificant
R85	509485	509485	73.2	2022	2.04	1%	75.2	38%	Insignificant
R86	509286	509286	73.2	2018	2.29	1%	75.5	38%	Insignificant
R87	509148	509148	73.2	2021	2.00	1%	75.2	38%	Insignificant
R88	507275	507275	73.2	2021	2.89	1%	76.1	38%	Insignificant
R89	507256	507256	73.2	2021	2.77	1%	76.0	38%	Insignificant
R90	507061	507061	73.2	2020	2.55	1%	75.7	38%	Insignificant
R91	507191	507191	73.2	2021	2.74	1%	75.9	38%	Insignificant
R92	507076	507076	73.2	2021	2.48	1%	75.7	38%	Insignificant
R93	507232	507232	73.2	2021	2.57	1%	75.8	38%	Insignificant
R94	508095	508095	73.2	2022	4.33	2%	77.5	39%	Insignificant
R95	508124	508124	73.2	2022	4.08	2%	77.3	39%	Insignificant
R96	508070	508070	73.2	2022	9.20	5%	82.4	41%	Insignificant
AQS: 200µg/m ³ *Results are to 2d.p.									

D.1.2 PM₁₀ results for Testing Scenario 1

Table 34 PM₁₀ annual mean results (µg/m³)

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R1	508156	179589	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R2	508149	179561	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R3	508159	179522	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R4	508162	179486	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R5	508177	179460	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R6	508138	179482	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R7	508100	179481	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R8	508064	179491	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R9	508039	179473	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R10	508034	179414	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R11	508018	179363	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R12	508020	179311	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R13	508092	179352	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R14	508089	179420	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R15	508149	179401	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R16	508190	179416	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R17	508236	179419	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R18	508224	179476	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R19	508202	179525	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R20	508228	179560	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R21	508194	179627	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R22	508266	179594	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R23	508365	179567	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R24	508298	179503	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R25	508295	179464	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R26	508097	179237	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R27	508130	179303	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R28	508196	179342	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R29	508303	179407	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R30	508407	179375	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R31	508438	179423	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R32	508442	179464	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R33	508302	179343	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R34	508188	179197	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R35	508128	179002	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R36	508235	179077	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R37	508252	179297	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R38	508390	179110	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R39	508964	179113	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R40	508586	178796	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R41	508329	179210	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R42	508498	178826	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R43	507561	179800	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R44	507475	179859	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R45	507432	180016	16.1	2019	<0.01	<0.01%	16.1	40%	Insignificant
R46	508085	180491	16.4	2022	<0.01	<0.01%	16.4	41%	Insignificant
R47	508435	180152	16.4	2020	<0.01	<0.01%	16.4	41%	Insignificant
R48	508381	179255	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R49	508471	179199	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R50	508559	179329	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R51	508596	179251	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R52	508552	179168	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R53	508524	179095	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R54	508547	179498	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R55	508431	179294	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R56	508590	179416	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R57	508649	179348	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R58	508672	179473	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R59	508756	179416	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R60	508911	179342	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R61	508929	179457	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R62	508727	179241	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R63	508943	179238	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R64	508803	179321	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R65	508720	179149	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R66	508639	179056	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R67	508786	179050	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R68	508758	178981	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R69	508710	178847	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R70	509054	178994	18.2	2022	<0.01	<0.01%	18.2	46%	Insignificant
R71	508547	178932	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R72	508976	178882	17.9	2022	<0.01	<0.01%	17.9	45%	Insignificant
R73	508895	178793	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R74	507592	179687	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R75	507417	179752	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R76	507350	179651	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R77	507459	179616	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R78	507284	179777	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R79	507222	179696	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R80	507135	179553	17.5	2021	<0.01	<0.01%	17.5	44%	Insignificant
R81	507183	179850	17.5	2019	<0.01	<0.01%	17.5	44%	Insignificant
R82	507347	179533	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R83	508590	180658	16.4	2019	<0.01	<0.01%	16.4	41%	Insignificant
R84	508802	180708	16.4	2019	<0.01	<0.01%	16.4	41%	Insignificant
R85	509485	180185	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R86	509286	180317	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R87	509148	180577	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R88	507275	179381	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R89	507256	179220	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R90	507061	179406	17.5	2021	<0.01	<0.01%	17.5	44%	Insignificant
R91	507191	179297	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R92	507076	179216	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R93	507232	179053	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R94	508095	179455	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R95	508124	179457	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R96	508070	179461	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
AQS: 40µg/m ³ *Results are to 2d.p.									

Table 35 PM₁₀ daily mean results (µg/m³)

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R1	508156	179589	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R2	508149	179561	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R3	508159	179522	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R4	508162	179486	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R5	508177	179460	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R6	508138	179482	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R7	508100	179481	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R8	508064	179491	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R9	508039	179473	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R10	508034	179414	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R11	508018	179363	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R12	508020	179311	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R13	508092	179352	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R14	508089	179420	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R15	508149	179401	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R16	508190	179416	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R17	508236	179419	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R18	508224	179476	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R19	508202	179525	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R20	508228	179560	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R21	508194	179627	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R22	508266	179594	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R23	508365	179567	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R24	508298	179503	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R25	508295	179464	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R26	508097	179237	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R27	508130	179303	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R28	508196	179342	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R29	508303	179407	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R30	508407	179375	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R31	508438	179423	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R32	508442	179464	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R33	508302	179343	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R34	508188	179197	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R35	508128	179002	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R36	508235	179077	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R37	508252	179297	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R38	508390	179110	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R39	508964	179113	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R40	508586	178796	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R41	508329	179210	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R42	508498	178826	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R43	507561	179800	35.0	2020	<0.01	<0.01%	35.0	70%	Insignificant
R44	507475	179859	35.0	2020	<0.01	<0.01%	35.0	70%	Insignificant
R45	507432	180016	32.3	2019	<0.01	<0.01%	32.3	65%	Insignificant
R46	508085	180491	32.7	2020	<0.01	<0.01%	32.7	65%	Insignificant
R47	508435	180152	32.7	2020	<0.01	<0.01%	32.7	65%	Insignificant
R48	508381	179255	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R49	508471	179199	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R50	508559	179329	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R51	508596	179251	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R52	508552	179168	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R53	508524	179095	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R54	508547	179498	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R55	508431	179294	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R56	508590	179416	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R57	508649	179348	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R58	508672	179473	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R59	508756	179416	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R60	508911	179342	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R61	508929	179457	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R62	508727	179241	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R63	508943	179238	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R64	508803	179321	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R65	508720	179149	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R66	508639	179056	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R67	508786	179050	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R68	508758	178981	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R69	508710	178847	35.8	2022	<0.01	<0.01%	35.8	72%	Insignificant
R70	509054	178994	36.4	2022	<0.01	<0.01%	36.4	73%	Insignificant
R71	508547	178932	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R72	508976	178882	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R73	508895	178793	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R74	507592	179687	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R75	507417	179752	35.0	2020	<0.01	<0.01%	35.0	70%	Insignificant
R76	507350	179651	35.0	2021	<0.01	<0.01%	35.0	70%	Insignificant
R77	507459	179616	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R78	507284	179777	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R79	507222	179696	35.0	2020	<0.01	<0.01%	35.0	70%	Insignificant
R80	507135	179553	35.0	2021	<0.01	<0.01%	35.0	70%	Insignificant
R81	507183	179850	35.0	2019	<0.01	<0.01%	35.0	70%	Insignificant
R82	507347	179533	35.0	2021	<0.01	<0.01%	35.0	70%	Insignificant
R83	508590	180658	32.7	2019	<0.01	<0.01%	32.7	65%	Insignificant
R84	508802	180708	32.7	2019	<0.01	<0.01%	32.7	65%	Insignificant
R85	509485	180185	33.0	2020	<0.01	<0.01%	33.0	66%	Insignificant
R86	509286	180317	33.0	2020	<0.01	<0.01%	33.0	66%	Insignificant
R87	509148	180577	33.0	2020	<0.01	<0.01%	33.0	66%	Insignificant
R88	507275	179381	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R89	507256	179220	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R90	507061	179406	35.0	2021	<0.01	<0.01%	35.0	70%	Insignificant
R91	507191	179297	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R92	507076	179216	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R93	507232	179053	35.0	2018	<0.01	<0.01%	35.0	70%	Insignificant
R94	508095	179455	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R95	508124	179457	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
R96	508070	179461	34.0	2021	<0.01	<0.01%	34.0	68%	Insignificant
AQS: 50µg/m ³ *Results are to 2d.p.									

D.1.3 PM_{2.5} results for Testing Scenario 1

Table 36 PM_{2.5} annual mean results (µg/m³)

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R1	508156	179589	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R2	508149	179561	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R3	508159	179522	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R4	508162	179486	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R5	508177	179460	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R6	508138	179482	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R7	508100	179481	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R8	508064	179491	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R9	508039	179473	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R10	508034	179414	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R11	508018	179363	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R12	508020	179311	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R13	508092	179352	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R14	508089	179420	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R15	508149	179401	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R16	508190	179416	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R17	508236	179419	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R18	508224	179476	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R19	508202	179525	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R20	508228	179560	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R21	508194	179627	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R22	508266	179594	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R23	508365	179567	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R24	508298	179503	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R25	508295	179464	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R26	508097	179237	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R27	508130	179303	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R28	508196	179342	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R29	508303	179407	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R30	508407	179375	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R31	508438	179423	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R32	508442	179464	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R33	508302	179343	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R35	508128	179002	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R36	508235	179077	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R37	508252	179297	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R38	508390	179110	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R39	508964	179113	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R40	508586	178796	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R41	508329	179210	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R42	508498	178826	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R43	507561	179800	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R44	507475	179859	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R45	507432	180016	11.0	2019	<0.01	<0.01%	11.0	91%	Insignificant
R46	508085	180491	11.1	2022	<0.01	<0.01%	11.1	93%	Insignificant
R47	508435	180152	11.1	2020	<0.01	<0.01%	11.1	93%	Insignificant
R48	508381	179255	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R49	508471	179199	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R50	508559	179329	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R51	508596	179251	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R52	508552	179168	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R53	508524	179095	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R54	508547	179498	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R55	508431	179294	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R56	508590	179416	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R57	508649	179348	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R58	508672	179473	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R59	508756	179416	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R60	508911	179342	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R61	508929	179457	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R62	508727	179241	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R63	508943	179238	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R64	508803	179321	11.5	2022	<0.01	<0.01%	11.4	95%	Insignificant
R65	508720	179149	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R66	508639	179056	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R67	508786	179050	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R68	508758	178981	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R69	508710	178847	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R70	509054	178994	12.2	2022	<0.01	<0.01%	12.2	101%	Insignificant

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R72	508976	178882	11.9	2022	<0.01	<0.01%	11.9	99%	Insignificant
R73	508895	178793	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R74	507592	179687	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R75	507417	179752	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R76	507350	179651	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R77	507459	179616	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R78	507284	179777	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R79	507222	179696	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R80	507135	179553	12.0	2021	<0.01	<0.01%	12.0	100%	Insignificant
R81	507183	179850	12.0	2019	<0.01	<0.01%	12.0	100%	Insignificant
R82	507347	179533	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R83	508590	180658	11.1	2019	<0.01	<0.01%	11.1	93%	Insignificant
R84	508802	180708	11.1	2019	<0.01	<0.01%	11.1	93%	Insignificant
R85	509485	180185	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R86	509286	180317	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R87	509148	180577	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R88	507275	179381	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R89	507256	179220	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R90	507061	179406	12.0	2021	<0.01	<0.01%	12.0	100%	Insignificant
R91	507191	179297	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R92	507076	179216	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R93	507232	179053	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R94	508095	179455	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R95	508124	179457	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant
R96	508070	179461	11.5	2021	<0.01	<0.01%	11.4	95%	Insignificant

AQS: 12µg/m³

*Results are to 2d.p.

D.1.4 CO results for Testing Scenario 1

Table 37 CO 8-hour rolling mean ($\mu\text{g}/\text{m}^3$)

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	198	2021	0.05	<0.01%	397	4%	Insignificant
R1	508156	179589	198	2021	0.04	<0.01%	397	4%	Insignificant
R2	508149	179561	198	2021	0.04	<0.01%	397	4%	Insignificant
R3	508159	179522	198	2021	0.04	<0.01%	397	4%	Insignificant
R4	508162	179486	198	2021	0.03	<0.01%	397	4%	Insignificant
R5	508177	179460	198	2021	0.03	<0.01%	397	4%	Insignificant
R6	508138	179482	198	2021	0.03	<0.01%	397	4%	Insignificant
R7	508100	179481	198	2021	0.04	<0.01%	397	4%	Insignificant
R8	508064	179491	198	2021	0.04	<0.01%	397	4%	Insignificant
R9	508039	179473	198	2021	0.04	<0.01%	397	4%	Insignificant
R10	508034	179414	198	2021	0.04	<0.01%	397	4%	Insignificant
R11	508018	179363	198	2021	0.03	<0.01%	397	4%	Insignificant
R12	508020	179311	198	2021	0.03	<0.01%	397	4%	Insignificant
R13	508092	179352	198	2021	0.03	<0.01%	397	4%	Insignificant
R14	508089	179420	198	2021	0.03	<0.01%	397	4%	Insignificant
R15	508149	179401	198	2021	0.03	<0.01%	397	4%	Insignificant
R16	508190	179416	198	2021	0.03	<0.01%	397	4%	Insignificant
R17	508236	179419	198	2021	0.03	<0.01%	397	4%	Insignificant
R18	508224	179476	198	2021	0.03	<0.01%	397	4%	Insignificant
R19	508202	179525	198	2021	0.04	<0.01%	397	4%	Insignificant
R20	508228	179560	198	2021	0.04	<0.01%	397	4%	Insignificant
R21	508194	179627	198	2021	0.05	<0.01%	397	4%	Insignificant
R22	508266	179594	198	2021	0.04	<0.01%	397	4%	Insignificant
R23	508365	179567	198	2021	0.03	<0.01%	397	4%	Insignificant
R24	508298	179503	198	2021	0.03	<0.01%	397	4%	Insignificant
R25	508295	179464	198	2021	0.03	<0.01%	397	4%	Insignificant
R26	508097	179237	198	2021	0.02	<0.01%	397	4%	Insignificant
R27	508130	179303	198	2021	0.02	<0.01%	397	4%	Insignificant
R28	508196	179342	198	2021	0.02	<0.01%	397	4%	Insignificant
R29	508303	179407	198	2021	0.02	<0.01%	397	4%	Insignificant
R30	508407	179375	198	2021	0.02	<0.01%	397	4%	Insignificant
R31	508438	179423	198	2021	0.02	<0.01%	397	4%	Insignificant
R32	508442	179464	198	2021	0.03	<0.01%	397	4%	Insignificant
R33	508302	179343	198	2021	0.02	<0.01%	397	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	198	2021	0.02	<0.01%	397	4%	Insignificant
R35	508128	179002	198	2021	0.02	<0.01%	397	4%	Insignificant
R36	508235	179077	198	2021	0.02	<0.01%	397	4%	Insignificant
R37	508252	179297	198	2021	0.02	<0.01%	397	4%	Insignificant
R38	508390	179110	198	2021	0.02	<0.01%	397	4%	Insignificant
R39	508964	179113	198	2022	0.01	<0.01%	397	4%	Insignificant
R40	508586	178796	207	2021	0.01	<0.01%	414	4%	Insignificant
R41	508329	179210	198	2021	0.02	<0.01%	397	4%	Insignificant
R42	508498	178826	207	2021	0.01	<0.01%	414	4%	Insignificant
R43	507561	179800	193	2018	0.05	<0.01%	385	4%	Insignificant
R44	507475	179859	193	2018	0.04	<0.01%	385	4%	Insignificant
R45	507432	180016	193	2019	0.04	<0.01%	385	4%	Insignificant
R46	508085	180491	198	2022	0.08	<0.01%	396	4%	Insignificant
R47	508435	180152	198	2020	0.12	<0.01%	396	4%	Insignificant
R48	508381	179255	198	2021	0.02	<0.01%	397	4%	Insignificant
R49	508471	179199	198	2021	0.02	<0.01%	397	4%	Insignificant
R50	508559	179329	198	2021	0.02	<0.01%	397	4%	Insignificant
R51	508596	179251	198	2021	0.02	<0.01%	397	4%	Insignificant
R52	508552	179168	198	2021	0.02	<0.01%	397	4%	Insignificant
R53	508524	179095	198	2021	0.02	<0.01%	397	4%	Insignificant
R54	508547	179498	198	2021	0.02	<0.01%	397	4%	Insignificant
R55	508431	179294	198	2021	0.02	<0.01%	397	4%	Insignificant
R56	508590	179416	198	2021	0.02	<0.01%	397	4%	Insignificant
R57	508649	179348	198	2021	0.02	<0.01%	397	4%	Insignificant
R58	508672	179473	198	2022	0.02	<0.01%	397	4%	Insignificant
R59	508756	179416	198	2022	0.02	<0.01%	397	4%	Insignificant
R60	508911	179342	198	2022	0.02	<0.01%	397	4%	Insignificant
R61	508929	179457	198	2022	0.02	<0.01%	397	4%	Insignificant
R62	508727	179241	198	2021	0.02	<0.01%	397	4%	Insignificant
R63	508943	179238	198	2022	0.02	<0.01%	397	4%	Insignificant
R64	508803	179321	198	2022	0.02	<0.01%	397	4%	Insignificant
R65	508720	179149	198	2021	0.02	<0.01%	397	4%	Insignificant
R66	508639	179056	198	2021	0.01	<0.01%	397	4%	Insignificant
R67	508786	179050	198	2021	0.01	<0.01%	397	4%	Insignificant
R68	508758	178981	207	2021	0.01	<0.01%	414	4%	Insignificant
R69	508710	178847	207	2021	0.01	<0.01%	414	4%	Insignificant
R70	509054	178994	207	2022	0.01	<0.01%	414	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	207	2021	0.01	<0.01%	414	4%	Insignificant
R72	508976	178882	207	2022	0.01	<0.01%	414	4%	Insignificant
R73	508895	178793	207	2021	0.01	<0.01%	414	4%	Insignificant
R74	507592	179687	193	2018	0.07	<0.01%	386	4%	Insignificant
R75	507417	179752	193	2020	0.03	<0.01%	385	4%	Insignificant
R76	507350	179651	193	2018	0.03	<0.01%	385	4%	Insignificant
R77	507459	179616	193	2018	0.04	<0.01%	385	4%	Insignificant
R78	507284	179777	193	2020	0.02	<0.01%	385	4%	Insignificant
R79	507222	179696	193	2020	0.02	<0.01%	385	4%	Insignificant
R80	507135	179553	193	2021	0.02	<0.01%	385	4%	Insignificant
R81	507183	179850	193	2019	0.02	<0.01%	385	4%	Insignificant
R82	507347	179533	193	2018	0.03	<0.01%	385	4%	Insignificant
R83	508590	180658	198	2019	0.04	<0.01%	396	4%	Insignificant
R84	508802	180708	198	2019	0.03	<0.01%	396	4%	Insignificant
R85	509485	180185	202	2020	0.02	<0.01%	403	4%	Insignificant
R86	509286	180317	202	2020	0.02	<0.01%	403	4%	Insignificant
R87	509148	180577	202	2020	0.02	<0.01%	403	4%	Insignificant
R88	507275	179381	193	2018	0.03	<0.01%	385	4%	Insignificant
R89	507256	179220	193	2018	0.03	<0.01%	385	4%	Insignificant
R90	507061	179406	193	2021	0.02	<0.01%	385	4%	Insignificant
R91	507191	179297	193	2018	0.02	<0.01%	385	4%	Insignificant
R92	507076	179216	193	2018	0.02	<0.01%	385	4%	Insignificant
R93	507232	179053	193	2018	0.02	<0.01%	385	4%	Insignificant
R94	508095	179455	198	2021	0.03	<0.01%	397	4%	Insignificant
R95	508124	179457	198	2021	0.03	<0.01%	397	4%	Insignificant
R96	508070	179461	198	2021	0.04	<0.01%	397	4%	Insignificant
AQS: 10,000µg/m ³ *Results are to 2d.p.									

D.1.5 Ecological results for Testing Scenario 1

Table 38 NO_x daily mean results (µg/m³)

Receptor	X	Y	Short term NO _x background	Maximum Year	Maximum modelled PC	% of standard	PEC	% of standard	Significance
ER01	503052	175537	102.7	2020	0.04	0.05%	102.8	137%	Insignificant ¹
ER02	504576	174211	68.3	2019	0.05	0.06%	68.3	91%	Insignificant
ER03	505304	174124	111.2	2021	0.06	0.07%	111.3	148%	Insignificant ¹
ER04	500573	175085	43.5	2021	0.02	0.03%	43.5	58%	Insignificant
ER05	501398	174145	42.1	2020	0.03	0.04%	42.1	56%	Insignificant
ER06	511637	170978	49.6	2021	0.03	0.03%	49.6	66%	Insignificant
ER07	511968	170433	49.6	2021	0.02	0.03%	49.6	66%	Insignificant
ER08	507957	179720	81.8	2021	2.36	3.14%	84.1	112%	Insignificant ¹
ER09	507553	179346	81.8	2020	0.61	0.81%	82.4	110%	Insignificant ¹
ER10	508104	179827	82.9	2020	3.50	4.67%	86.4	115%	Insignificant ¹
ER11	508088	179855	82.9	2020	4.40	5.86%	87.3	116%	Insignificant ¹
ER12	507609	179825	81.8	2021	1.34	1.78%	83.1	111%	Insignificant ¹
ER13	507617	179862	81.8	2021	1.40	1.86%	83.2	111%	Insignificant ¹
ER14	508099	180033	67.5	2020	8.49	11.32%	76.0	101%	Insignificant ¹
ER15	508737	180243	67.5	2020	0.54	0.72%	68.0	91%	Insignificant
ER16	508875	180060	67.5	2019	0.45	0.60%	67.9	91%	Insignificant
ER17	508045	178454	94.1	2019	0.22	0.29%	94.3	126%	Insignificant ¹
ER18	509422	178303	95.2	2020	0.17	0.23%	95.4	127%	Insignificant ¹
ER19	509435	178074	95.2	2020	0.14	0.19%	95.3	127%	Insignificant ¹
ER20	509498	178265	95.2	2020	0.17	0.22%	95.4	127%	Insignificant ¹
ER21	507244	180526	65.9	2020	0.36	0.48%	66.3	88%	Insignificant

Critical level: 75µg/m³
 *Results are to 2d.p.
¹Whilst the PEC compared to the air quality standard is above the critical level, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant.

Table 39 NO_x annual mean results (µg/m³)

Receptor	X	Y	Long term NO _x background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
ER01	503052	175537	51.4	2021	<0.01	<0.01%	51.4	171%	Insignificant ¹
ER02	504576	174211	34.1	2021	<0.01	<0.01%	34.1	114%	Insignificant ¹
ER03	505304	174124	55.6	2021	<0.01	<0.01%	55.6	185%	Insignificant ¹
ER04	500573	175085	21.7	2021	<0.01	<0.01%	21.7	72%	Insignificant
ER05	501398	174145	21.0	2021	<0.01	<0.01%	21.0	70%	Insignificant
ER06	511637	170978	24.8	2021	<0.01	<0.01%	24.8	83%	Insignificant
ER07	511968	170433	24.8	2021	<0.01	<0.01%	24.8	83%	Insignificant
ER08	507957	179720	40.9	2021	<0.01	<0.01%	40.9	136%	Insignificant ¹
ER09	507553	179346	40.9	2018	<0.01	<0.01%	40.9	136%	Insignificant ¹
ER10	508104	179827	41.5	2021	<0.01	<0.01%	41.5	138%	Insignificant ¹
ER11	508088	179855	41.5	2021	<0.01	<0.01%	41.5	138%	Insignificant ¹
ER12	507609	179825	40.9	2018	<0.01	<0.01%	40.9	136%	Insignificant ¹
ER13	507617	179862	40.9	2018	<0.01	<0.01%	40.9	136%	Insignificant ¹
ER14	508099	180033	33.7	2020	<0.01	0.02%	33.7	112%	Insignificant ¹
ER15	508737	180243	33.7	2020	<0.01	<0.01%	33.7	112%	Insignificant ¹
ER16	508875	180060	33.7	2018	<0.01	<0.01%	33.7	112%	Insignificant ¹
ER17	508045	178454	47.0	2021	<0.01	<0.01%	47.0	157%	Insignificant ¹
ER18	509422	178303	47.6	2022	<0.01	<0.01%	47.6	159%	Insignificant ¹
ER19	509435	178074	47.6	2021	<0.01	<0.01%	47.6	159%	Insignificant ¹
ER20	509498	178265	47.6	2022	<0.01	<0.01%	47.6	159%	Insignificant ¹
ER21	507244	180526	33.0	2022	<0.01	<0.01%	33.0	110%	Insignificant ¹
ER01	503052	175537	51.4	2021	<0.01	<0.01%	51.4	171%	Insignificant ¹
ER02	504576	174211	34.1	2021	<0.01	<0.01%	34.1	114%	Insignificant ¹
ER03	505304	174124	55.6	2021	<0.01	<0.01%	55.6	185%	Insignificant ¹
ER04	500573	175085	21.7	2021	<0.01	<0.01%	21.7	72%	Insignificant
ER05	501398	174145	21.0	2021	<0.01	<0.01%	21.0	70%	Insignificant
ER06	511637	170978	24.8	2021	<0.01	<0.01%	24.8	83%	Insignificant
ER07	511968	170433	24.8	2021	<0.01	<0.01%	24.8	83%	Insignificant

Critical level: 30µg/m³

*Results are to 2d.p.

¹Whilst the PEC compared to the air quality standard is above the critical level, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant.

Table 40 Nutrient nitrogen deposition results

Ecological receptor ID	Critical load min	Background Nitrogen deposition	Annual mean NO ₂ PC (µg/m ³)	Dry deposition (kg N/ha/yr)	Proportion of PC to CL (%) Min	Proportion of PEC to CL (%) Min
ER01	10	14.0	<0.01	<0.01	<0.01	<0.01
ER02	10	13.9	<0.01	<0.01	<0.01	<0.01
ER03	10	14.0	<0.01	<0.01	<0.01	<0.01
ER04	10	14.4	<0.01	<0.01	<0.01	<0.01
ER05	10	13.5	<0.01	<0.01	<0.01	<0.01
ER06	10	13.3	<0.01	<0.01	<0.01	<0.01
ER07	10	13.3	<0.01	<0.01	<0.01	<0.01
ER08	10	15.5	<0.01	<0.01	<0.01	<0.01
ER09	10	27.4	<0.01	<0.01	<0.01	<0.01
ER10	10	15.5	<0.01	<0.01	<0.01	<0.01
ER11	10	27.4	<0.01	<0.01	<0.01	<0.01
ER12	10	27.4	<0.01	<0.01	<0.01	<0.01
ER13	10	27.4	<0.01	<0.01	<0.01	<0.01
ER14	10	27.3	<0.01	<0.01	<0.01	<0.01
ER15	10	27.3	<0.01	<0.01	<0.01	<0.01
ER16	10	27.3	<0.01	<0.01	<0.01	<0.01
ER17	10	27.6	<0.01	<0.01	<0.01	<0.01
ER18	10	27.5	<0.01	<0.01	<0.01	<0.01
ER19	10	15.3	<0.01	<0.01	<0.01	<0.01
ER20	10	15.3	<0.01	<0.01	<0.01	<0.01
ER21	10	27.2	<0.01	<0.01	<0.01	<0.01

Table 41 Acid deposition results

Ecological receptor ID	Critical Load min Nitrogen (kg N/ha/yr)	Critical Load max Nitrogen (kg N/ha/yr)	Background Nitrogen deposition (kg N/ha/yr)	PC Nitrogen (keq N/ha/yr)	Exceedance
ER01	0.86	4.86	1.15	<0.01	PC < CL, No exceedance
ER02	0.86	4.86	1.14	<0.01	PC < CL, No exceedance
ER03	0.86	4.86	1.16	<0.01	PC < CL, No exceedance
ER04	0.86	4.86	1.08	<0.01	PC < CL, No exceedance
ER05	0.86	4.86	1.2	<0.01	PC < CL, No exceedance
ER06	0.86	4.86	1.05	<0.01	PC < CL, No exceedance
ER07	0.86	4.86	1.05	<0.01	PC < CL, No exceedance
ER08	0.86	4.86	1.3	<0.01	PC < CL, No exceedance
ER09	0.14	1.72	2.2	<0.01	PC < CL, No exceedance
ER10	0.86	4.86	1.28	<0.01	PC < CL, No exceedance
ER11	0.14	1.72	2.18	<0.01	PC < CL, No exceedance
ER12	0.14	1.72	2.2	<0.01	PC < CL, No exceedance
ER13	0.14	1.72	2.2	<0.01	PC < CL, No exceedance
ER14	0.14	1.71	2.14	<0.01	PC < CL, No exceedance
ER15	0.14	1.71	2.14	<0.01	PC < CL, No exceedance
ER16	0.14	1.71	2.14	<0.01	PC < CL, No exceedance
ER17	0.14	1.72	2.22	<0.01	PC < CL, No exceedance
ER18	0.36	2.06	2.19	<0.01	PC < CL, No exceedance
ER19	1.07	5.07	1.28	<0.01	PC < CL, No exceedance
ER20	1.07	5.07	1.28	<0.01	PC < CL, No exceedance
ER21	0.36	1.69	2.15	<0.01	PC < CL, No exceedance

D.2 Testing Scenario 2

D.2.1 NO₂ results for Testing Scenario 2

Table 42 NO₂ annual mean results (µg/m³)

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R1	508156	179589	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R2	508149	179561	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R3	508159	179522	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R4	508162	179486	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R5	508177	179460	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R6	508138	179482	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R7	508100	179481	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R8	508064	179491	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R9	508039	179473	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R10	508034	179414	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R11	508018	179363	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R12	508020	179311	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R13	508092	179352	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R14	508089	179420	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R15	508149	179401	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R16	508190	179416	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R17	508236	179419	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R18	508224	179476	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R19	508202	179525	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R20	508228	179560	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R21	508194	179627	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R22	508266	179594	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R23	508365	179567	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R24	508298	179503	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R25	508295	179464	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R26	508097	179237	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R27	508130	179303	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R28	508196	179342	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R29	508303	179407	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R30	508407	179375	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R31	508438	179423	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R32	508442	179464	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R33	508302	179343	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R34	508188	179197	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R35	508128	179002	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R36	508235	179077	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R37	508252	179297	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R38	508390	179110	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R39	508964	179113	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R40	508586	178796	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R41	508329	179210	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R42	508498	178826	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R43	507561	179800	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R44	507475	179859	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R45	507432	180016	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R46	508085	180491	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R47	508435	180152	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R48	508381	179255	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R49	508471	179199	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R50	508559	179329	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R51	508596	179251	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R52	508552	179168	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R53	508524	179095	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R54	508547	179498	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R55	508431	179294	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R56	508590	179416	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R57	508649	179348	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R58	508672	179473	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R59	508756	179416	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R60	508911	179342	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R61	508929	179457	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R62	508727	179241	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R63	508943	179238	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R64	508803	179321	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R65	508720	179149	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R66	508639	179056	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R67	508786	179050	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant

Receptor	X	Y	Long term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R68	508758	178981	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R69	508710	178847	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R70	509054	178994	36.6	2022	<0.01	<0.01%	36.6	92%	Insignificant
R71	508547	178932	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R72	508976	178882	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R73	508895	178793	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R74	507592	179687	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R75	507417	179752	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R76	507350	179651	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R77	507459	179616	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R78	507284	179777	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R79	507222	179696	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R80	507135	179553	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R81	507183	179850	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R82	507347	179533	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R83	508590	180658	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R84	508802	180708	36.6	2019	<0.01	<0.01%	36.6	92%	Insignificant
R85	509485	180185	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R86	509286	180317	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R87	509148	180577	36.6	2020	<0.01	<0.01%	36.6	92%	Insignificant
R88	507275	179381	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R89	507256	179220	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R90	507061	179406	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R91	507191	179297	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R92	507076	179216	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R93	507232	179053	36.6	2018	<0.01	<0.01%	36.6	92%	Insignificant
R94	508095	179455	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R95	508124	179457	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
R96	508070	179461	36.6	2021	<0.01	<0.01%	36.6	92%	Insignificant
AQS: 40µg/m ³ *Results are to 2d.p.									

Table 43 NO₂ 99.79th percentile hourly mean results (µg/m³)

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	508162	73.2	2022	10.94	5%	84.1	32%	Insignificant
R1	508156	508156	73.2	2022	6.08	3%	79.3	30%	Insignificant
R2	508149	508149	73.2	2022	6.70	3%	79.9	30%	Insignificant
R3	508159	508159	73.2	2022	7.38	4%	80.6	30%	Insignificant
R4	508162	508162	73.2	2022	5.05	3%	78.3	29%	Insignificant
R5	508177	508177	73.2	2022	4.65	2%	77.8	29%	Insignificant
R6	508138	508138	73.2	2022	4.88	2%	78.1	29%	Insignificant
R7	508100	508100	73.2	2021	5.17	3%	78.4	29%	Insignificant
R8	508064	508064	73.2	2022	11.09	6%	84.3	32%	Insignificant
R9	508039	508039	73.2	2018	10.11	5%	83.3	32%	Insignificant
R10	508034	508034	73.2	2018	10.16	5%	83.4	32%	Insignificant
R11	508018	508018	73.2	2018	4.06	2%	77.3	29%	Insignificant
R12	508020	508020	73.2	2018	3.70	2%	76.9	28%	Insignificant
R13	508092	508092	73.2	2022	4.20	2%	77.4	29%	Insignificant
R14	508089	508089	73.2	2022	4.45	2%	77.6	29%	Insignificant
R15	508149	508149	73.2	2022	4.11	2%	77.3	29%	Insignificant
R16	508190	508190	73.2	2022	4.09	2%	77.3	29%	Insignificant
R17	508236	508236	73.2	2022	4.04	2%	77.2	29%	Insignificant
R18	508224	508224	73.2	2022	4.58	2%	77.8	29%	Insignificant
R19	508202	508202	73.2	2022	9.51	5%	82.7	31%	Insignificant
R20	508228	508228	73.2	2021	5.58	3%	78.8	29%	Insignificant
R21	508194	508194	73.2	2022	7.61	4%	80.8	30%	Insignificant
R22	508266	508266	73.2	2022	5.90	3%	79.1	29%	Insignificant
R23	508365	508365	73.2	2018	4.53	2%	77.7	29%	Insignificant
R24	508298	508298	73.2	2022	4.63	2%	77.8	29%	Insignificant
R25	508295	508295	73.2	2022	4.31	2%	77.5	29%	Insignificant
R26	508097	508097	73.2	2022	3.19	2%	76.4	28%	Insignificant
R27	508130	508130	73.2	2022	3.53	2%	76.7	28%	Insignificant
R28	508196	508196	73.2	2022	3.57	2%	76.8	28%	Insignificant
R29	508303	508303	73.2	2022	3.82	2%	77.0	28%	Insignificant
R30	508407	508407	73.2	2018	3.51	2%	76.7	28%	Insignificant
R31	508438	508438	73.2	2018	3.60	2%	76.8	28%	Insignificant
R32	508442	508442	73.2	2021	3.63	2%	76.8	28%	Insignificant
R33	508302	508302	73.2	2022	3.42	2%	76.6	28%	Insignificant
R34	508188	508188	73.2	2022	3.18	2%	76.4	28%	Insignificant
R35	508128	508128	73.2	2022	2.64	1%	75.8	28%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R36	508235	508235	73.2	2022	2.80	1%	76.0	28%	Insignificant
R37	508252	508252	73.2	2022	3.42	2%	76.6	28%	Insignificant
R38	508390	508390	73.2	2022	2.98	1%	76.2	28%	Insignificant
R39	508964	508964	73.2	2022	2.54	1%	75.7	28%	Insignificant
R40	508586	508586	73.2	2021	2.54	1%	75.7	31%	Insignificant
R41	508329	508329	73.2	2022	3.13	2%	76.3	28%	Insignificant
R42	508498	508498	73.2	2021	2.57	1%	75.8	31%	Insignificant
R43	507561	507561	73.2	2020	5.79	3%	79.0	29%	Insignificant
R44	507475	507475	73.2	2020	4.91	2%	78.1	29%	Insignificant
R45	507432	507432	73.2	2021	4.81	2%	78.0	25%	Insignificant
R46	508085	508085	73.2	2021	5.24	3%	78.4	25%	Insignificant
R47	508435	508435	73.2	2019	6.07	3%	79.3	26%	Insignificant
R48	508381	508381	73.2	2022	3.03	2%	76.2	28%	Insignificant
R49	508471	508471	73.2	2018	2.81	1%	76.0	28%	Insignificant
R50	508559	508559	73.2	2018	3.09	2%	76.3	28%	Insignificant
R51	508596	508596	73.2	2018	2.96	1%	76.2	28%	Insignificant
R52	508552	508552	73.2	2021	2.73	1%	75.9	28%	Insignificant
R53	508524	508524	73.2	2018	2.61	1%	75.8	28%	Insignificant
R54	508547	508547	73.2	2022	3.24	2%	76.4	28%	Insignificant
R55	508431	508431	73.2	2018	3.10	2%	76.3	28%	Insignificant
R56	508590	508590	73.2	2021	3.14	2%	76.3	28%	Insignificant
R57	508649	508649	73.2	2018	2.89	1%	76.1	28%	Insignificant
R58	508672	508672	73.2	2022	3.09	2%	76.3	28%	Insignificant
R59	508756	508756	73.2	2022	2.92	1%	76.1	28%	Insignificant
R60	508911	508911	73.2	2022	2.74	1%	75.9	28%	Insignificant
R61	508929	508929	73.2	2022	2.86	1%	76.1	28%	Insignificant
R62	508727	508727	73.2	2021	2.90	1%	76.1	28%	Insignificant
R63	508943	508943	73.2	2022	2.67	1%	75.9	28%	Insignificant
R64	508803	508803	73.2	2022	2.77	1%	76.0	28%	Insignificant
R65	508720	508720	73.2	2021	2.95	1%	76.1	28%	Insignificant
R66	508639	508639	73.2	2022	2.71	1%	75.9	28%	Insignificant
R67	508786	508786	73.2	2021	2.84	1%	76.0	28%	Insignificant
R68	508758	508758	73.2	2021	2.66	1%	75.9	31%	Insignificant
R69	508710	508710	73.2	2022	2.52	1%	75.7	31%	Insignificant
R70	509054	509054	73.2	2022	2.36	1%	75.6	31%	Insignificant
R71	508547	508547	73.2	2022	2.58	1%	75.8	31%	Insignificant
R72	508976	508976	73.2	2021	2.49	1%	75.7	31%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R73	508895	508895	73.2	2018	2.38	1%	75.6	31%	Insignificant
R74	507592	507592	73.2	2018	13.46	7%	86.7	33%	Insignificant
R75	507417	507417	73.2	2020	4.19	2%	77.4	28%	Insignificant
R76	507350	507350	73.2	2020	3.81	2%	77.0	28%	Insignificant
R77	507459	507459	73.2	2018	4.19	2%	77.4	28%	Insignificant
R78	507284	507284	73.2	2020	3.36	2%	76.6	28%	Insignificant
R79	507222	507222	73.2	2020	3.08	2%	76.3	28%	Insignificant
R80	507135	507135	73.2	2020	3.00	2%	76.2	28%	Insignificant
R81	507183	507183	73.2	2019	3.11	2%	76.3	28%	Insignificant
R82	507347	507347	73.2	2020	3.34	2%	76.5	28%	Insignificant
R83	508590	508590	73.2	2021	3.16	2%	76.4	24%	Insignificant
R84	508802	508802	73.2	2019	2.63	1%	75.8	24%	Insignificant
R85	509485	509485	73.2	2022	2.25	1%	75.4	23%	Insignificant
R86	509286	509286	73.2	2020	2.47	1%	75.7	24%	Insignificant
R87	509148	509148	73.2	2021	2.21	1%	75.4	23%	Insignificant
R88	507275	507275	73.2	2021	3.04	2%	76.2	28%	Insignificant
R89	507256	507256	73.2	2018	3.03	2%	76.2	28%	Insignificant
R90	507061	507061	73.2	2018	2.77	1%	76.0	28%	Insignificant
R91	507191	507191	73.2	2021	2.90	1%	76.1	28%	Insignificant
R92	507076	507076	73.2	2021	2.66	1%	75.9	28%	Insignificant
R93	507232	507232	73.2	2021	2.82	1%	76.0	28%	Insignificant
R94	508095	508095	73.2	2022	4.77	2%	78.0	29%	Insignificant
R95	508124	508124	73.2	2022	4.68	2%	77.9	29%	Insignificant
R96	508070	508070	73.2	2021	9.94	5%	83.1	31%	Insignificant

AQS: 200µg/m³
*Results are to 2d.p.

D.2.2 PM₁₀ results for Testing Scenario 2

Table 44 PM₁₀ annual mean results (µg/m³)

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R1	508156	179589	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R2	508149	179561	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R3	508159	179522	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R4	508162	179486	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R5	508177	179460	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R6	508138	179482	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R7	508100	179481	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R8	508064	179491	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R9	508039	179473	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R10	508034	179414	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R11	508018	179363	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R12	508020	179311	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R13	508092	179352	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R14	508089	179420	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R15	508149	179401	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R16	508190	179416	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R17	508236	179419	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R18	508224	179476	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R19	508202	179525	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R20	508228	179560	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R21	508194	179627	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R22	508266	179594	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R23	508365	179567	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R24	508298	179503	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R25	508295	179464	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R26	508097	179237	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R27	508130	179303	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R28	508196	179342	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R29	508303	179407	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R30	508407	179375	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R31	508438	179423	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R32	508442	179464	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R33	508302	179343	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R35	508128	179002	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R36	508235	179077	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R37	508252	179297	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R38	508390	179110	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R39	508964	179113	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R40	508586	178796	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R41	508329	179210	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R42	508498	178826	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R43	507561	179800	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R44	507475	179859	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R45	507432	180016	16.1	2019	<0.01	<0.01%	16.1	40%	Insignificant
R46	508085	180491	16.4	2022	<0.01	<0.01%	16.4	41%	Insignificant
R47	508435	180152	16.4	2020	<0.01	<0.01%	16.4	41%	Insignificant
R48	508381	179255	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R49	508471	179199	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R50	508559	179329	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R51	508596	179251	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R52	508552	179168	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R53	508524	179095	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R54	508547	179498	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R55	508431	179294	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R56	508590	179416	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R57	508649	179348	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R58	508672	179473	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R59	508756	179416	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R60	508911	179342	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R61	508929	179457	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R62	508727	179241	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R63	508943	179238	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R64	508803	179321	17.0	2022	<0.01	<0.01%	17.0	42%	Insignificant
R65	508720	179149	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R66	508639	179056	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R67	508786	179050	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R68	508758	178981	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R69	508710	178847	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R70	509054	178994	18.2	2022	<0.01	<0.01%	18.2	46%	Insignificant

Receptor	X	Y	Long term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R72	508976	178882	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R73	508895	178793	17.9	2021	<0.01	<0.01%	17.9	45%	Insignificant
R74	507592	179687	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R75	507417	179752	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R76	507350	179651	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R77	507459	179616	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R78	507284	179777	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R79	507222	179696	17.5	2020	<0.01	<0.01%	17.5	44%	Insignificant
R80	507135	179553	17.5	2021	<0.01	<0.01%	17.5	44%	Insignificant
R81	507183	179850	17.5	2019	<0.01	<0.01%	17.5	44%	Insignificant
R82	507347	179533	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R83	508590	180658	16.4	2019	<0.01	<0.01%	16.4	41%	Insignificant
R84	508802	180708	16.4	2019	<0.01	<0.01%	16.4	41%	Insignificant
R85	509485	180185	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R86	509286	180317	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R87	509148	180577	16.5	2020	<0.01	<0.01%	16.5	41%	Insignificant
R88	507275	179381	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R89	507256	179220	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R90	507061	179406	17.5	2021	<0.01	<0.01%	17.5	44%	Insignificant
R91	507191	179297	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R92	507076	179216	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R93	507232	179053	17.5	2018	<0.01	<0.01%	17.5	44%	Insignificant
R94	508095	179455	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R95	508124	179457	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
R96	508070	179461	17.0	2021	<0.01	<0.01%	17.0	42%	Insignificant
AQS: 40µg/m ³ *Results are to 2d.p.									

Table 45 PM₁₀ daily mean results (µg/m³)

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R1	508156	179589	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R2	508149	179561	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R3	508159	179522	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R4	508162	179486	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R5	508177	179460	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R6	508138	179482	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R7	508100	179481	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R8	508064	179491	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R9	508039	179473	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R10	508034	179414	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R11	508018	179363	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R12	508020	179311	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R13	508092	179352	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R14	508089	179420	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R15	508149	179401	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R16	508190	179416	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R17	508236	179419	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R18	508224	179476	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R19	508202	179525	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R20	508228	179560	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R21	508194	179627	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R22	508266	179594	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
R23	508365	179567	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R24	508298	179503	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R25	508295	179464	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R26	508097	179237	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R27	508130	179303	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R28	508196	179342	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R29	508303	179407	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R30	508407	179375	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R31	508438	179423	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R32	508442	179464	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R33	508302	179343	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R34	508188	179197	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R35	508128	179002	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R36	508235	179077	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R37	508252	179297	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R38	508390	179110	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R39	508964	179113	34.0	2022	<0.01	<0.01%	34.0	68%	Insignificant
R40	508586	178796	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R41	508329	179210	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R42	508498	178826	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R43	507561	179800	35.0	2021	0.01	0.02%	35.0	70%	Insignificant
R44	507475	179859	35.0	2019	0.01	0.02%	35.0	70%	Insignificant
R45	507432	180016	32.3	2019	0.01	0.02%	32.3	65%	Insignificant
R46	508085	180491	32.7	2020	0.01	0.03%	32.7	65%	Insignificant
R47	508435	180152	32.7	2020	0.02	0.04%	32.7	65%	Insignificant
R48	508381	179255	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R49	508471	179199	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R50	508559	179329	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R51	508596	179251	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R52	508552	179168	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R53	508524	179095	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R54	508547	179498	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R55	508431	179294	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R56	508590	179416	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R57	508649	179348	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R58	508672	179473	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R59	508756	179416	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R60	508911	179342	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R61	508929	179457	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R62	508727	179241	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R63	508943	179238	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R64	508803	179321	34.0	2022	<0.01	0.01%	34.0	68%	Insignificant
R65	508720	179149	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R66	508639	179056	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R67	508786	179050	34.0	2021	<0.01	0.01%	34.0	68%	Insignificant
R68	508758	178981	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R69	508710	178847	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R70	509054	178994	36.4	2022	<0.01	<0.01%	36.4	73%	Insignificant
R71	508547	178932	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R72	508976	178882	35.8	2022	<0.01	<0.01%	35.8	72%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R73	508895	178793	35.8	2021	<0.01	<0.01%	35.8	72%	Insignificant
R74	507592	179687	35.0	2018	0.01	0.03%	35.1	70%	Insignificant
R75	507417	179752	35.0	2020	0.01	0.01%	35.0	70%	Insignificant
R76	507350	179651	35.0	2021	0.01	0.01%	35.0	70%	Insignificant
R77	507459	179616	35.0	2018	0.01	0.02%	35.0	70%	Insignificant
R78	507284	179777	35.0	2020	0.01	0.01%	35.0	70%	Insignificant
R79	507222	179696	35.0	2020	0.01	0.01%	35.0	70%	Insignificant
R80	507135	179553	35.0	2021	<0.01	0.01%	35.0	70%	Insignificant
R81	507183	179850	35.0	2019	<0.01	0.01%	35.0	70%	Insignificant
R82	507347	179533	35.0	2018	0.01	0.01%	35.0	70%	Insignificant
R83	508590	180658	32.7	2019	0.01	0.01%	32.7	65%	Insignificant
R84	508802	180708	32.7	2019	<0.01	0.01%	32.7	65%	Insignificant
R85	509485	180185	33.0	2020	<0.01	0.01%	33.0	66%	Insignificant
R86	509286	180317	33.0	2020	<0.01	0.01%	33.0	66%	Insignificant
R87	509148	180577	33.0	2020	<0.01	0.01%	33.0	66%	Insignificant
R88	507275	179381	35.0	2018	0.01	0.01%	35.0	70%	Insignificant
R89	507256	179220	35.0	2018	0.01	0.01%	35.0	70%	Insignificant
R90	507061	179406	35.0	2021	<0.01	0.01%	35.0	70%	Insignificant
R91	507191	179297	35.0	2018	0.01	0.01%	35.0	70%	Insignificant
R92	507076	179216	35.0	2018	<0.01	0.01%	35.0	70%	Insignificant
R93	507232	179053	35.0	2018	<0.01	0.01%	35.0	70%	Insignificant
R94	508095	179455	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R95	508124	179457	34.0	2021	0.01	0.01%	34.0	68%	Insignificant
R96	508070	179461	34.0	2021	0.01	0.02%	34.0	68%	Insignificant
AQS: 50µg/m ³ *Results are to 2d.p.									

D.2.3 PM_{2.5} results for Testing Scenario 2

Table 46 PM_{2.5} annual mean results (µg/m³)

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R1	508156	179589	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R2	508149	179561	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R3	508159	179522	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R4	508162	179486	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R5	508177	179460	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R6	508138	179482	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R7	508100	179481	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R8	508064	179491	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R9	508039	179473	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R10	508034	179414	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R11	508018	179363	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R12	508020	179311	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R13	508092	179352	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R14	508089	179420	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R15	508149	179401	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R16	508190	179416	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R17	508236	179419	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R18	508224	179476	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R19	508202	179525	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R20	508228	179560	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R21	508194	179627	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R22	508266	179594	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R23	508365	179567	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R24	508298	179503	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R25	508295	179464	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R26	508097	179237	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R27	508130	179303	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R28	508196	179342	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R29	508303	179407	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R30	508407	179375	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R31	508438	179423	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R32	508442	179464	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R33	508302	179343	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R35	508128	179002	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R36	508235	179077	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R37	508252	179297	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R38	508390	179110	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R39	508964	179113	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R40	508586	178796	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R41	508329	179210	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R42	508498	178826	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R43	507561	179800	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R44	507475	179859	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R45	507432	180016	11.0	2019	<0.01	<0.01%	11.0	91%	Insignificant
R46	508085	180491	11.1	2022	<0.01	<0.01%	11.1	93%	Insignificant
R47	508435	180152	11.1	2020	<0.01	<0.01%	11.1	93%	Insignificant
R48	508381	179255	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R49	508471	179199	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R50	508559	179329	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R51	508596	179251	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R52	508552	179168	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R53	508524	179095	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R54	508547	179498	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R55	508431	179294	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R56	508590	179416	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R57	508649	179348	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R58	508672	179473	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R59	508756	179416	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R60	508911	179342	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R61	508929	179457	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R62	508727	179241	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R63	508943	179238	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R64	508803	179321	11.5	2022	<0.01	<0.01%	11.5	95%	Insignificant
R65	508720	179149	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R66	508639	179056	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R67	508786	179050	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R68	508758	178981	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R69	508710	178847	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R70	509054	178994	12.2	2022	<0.01	<0.01%	12.2	101%	Insignificant

Receptor	X	Y	Long term PM _{2.5} background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R72	508976	178882	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R73	508895	178793	11.9	2021	<0.01	<0.01%	11.9	99%	Insignificant
R74	507592	179687	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R75	507417	179752	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R76	507350	179651	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R77	507459	179616	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R78	507284	179777	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R79	507222	179696	12.0	2020	<0.01	<0.01%	12.0	100%	Insignificant
R80	507135	179553	12.0	2021	<0.01	<0.01%	12.0	100%	Insignificant
R81	507183	179850	12.0	2019	<0.01	<0.01%	12.0	100%	Insignificant
R82	507347	179533	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R83	508590	180658	11.1	2019	<0.01	<0.01%	11.1	93%	Insignificant
R84	508802	180708	11.1	2019	<0.01	<0.01%	11.1	93%	Insignificant
R85	509485	180185	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R86	509286	180317	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R87	509148	180577	11.2	2020	<0.01	<0.01%	11.2	93%	Insignificant
R88	507275	179381	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R89	507256	179220	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R90	507061	179406	12.0	2021	<0.01	<0.01%	12.0	100%	Insignificant
R91	507191	179297	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R92	507076	179216	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R93	507232	179053	12.0	2018	<0.01	<0.01%	12.0	100%	Insignificant
R94	508095	179455	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R95	508124	179457	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant
R96	508070	179461	11.5	2021	<0.01	<0.01%	11.5	95%	Insignificant

AQS: 12µg/m³

*Results are to 2d.p.

D.2.4 CO results for Testing Scenario 2

Table 47 CO 8-hour rolling mean ($\mu\text{g}/\text{m}^3$)

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	198	2021	0.08	<0.01%	397	4%	Insignificant
R1	508156	179589	198	2021	0.07	<0.01%	397	4%	Insignificant
R2	508149	179561	198	2021	0.07	<0.01%	397	4%	Insignificant
R3	508159	179522	198	2021	0.07	<0.01%	397	4%	Insignificant
R4	508162	179486	198	2021	0.06	<0.01%	397	4%	Insignificant
R5	508177	179460	198	2021	0.05	<0.01%	397	4%	Insignificant
R6	508138	179482	198	2021	0.06	<0.01%	397	4%	Insignificant
R7	508100	179481	198	2021	0.06	<0.01%	397	4%	Insignificant
R8	508064	179491	198	2021	0.07	<0.01%	397	4%	Insignificant
R9	508039	179473	198	2021	0.08	<0.01%	397	4%	Insignificant
R10	508034	179414	198	2021	0.07	<0.01%	397	4%	Insignificant
R11	508018	179363	198	2021	0.05	<0.01%	397	4%	Insignificant
R12	508020	179311	198	2021	0.05	<0.01%	397	4%	Insignificant
R13	508092	179352	198	2021	0.05	<0.01%	397	4%	Insignificant
R14	508089	179420	198	2021	0.05	<0.01%	397	4%	Insignificant
R15	508149	179401	198	2021	0.05	<0.01%	397	4%	Insignificant
R16	508190	179416	198	2021	0.05	<0.01%	397	4%	Insignificant
R17	508236	179419	198	2021	0.05	<0.01%	397	4%	Insignificant
R18	508224	179476	198	2021	0.05	<0.01%	397	4%	Insignificant
R19	508202	179525	198	2021	0.06	<0.01%	397	4%	Insignificant
R20	508228	179560	198	2021	0.07	<0.01%	397	4%	Insignificant
R21	508194	179627	198	2021	0.08	<0.01%	397	4%	Insignificant
R22	508266	179594	198	2021	0.07	<0.01%	397	4%	Insignificant
R23	508365	179567	198	2021	0.06	<0.01%	397	4%	Insignificant
R24	508298	179503	198	2021	0.05	<0.01%	397	4%	Insignificant
R25	508295	179464	198	2021	0.05	<0.01%	397	4%	Insignificant
R26	508097	179237	198	2021	0.04	<0.01%	397	4%	Insignificant
R27	508130	179303	198	2021	0.04	<0.01%	397	4%	Insignificant
R28	508196	179342	198	2021	0.04	<0.01%	397	4%	Insignificant
R29	508303	179407	198	2021	0.04	<0.01%	397	4%	Insignificant
R30	508407	179375	198	2021	0.04	<0.01%	397	4%	Insignificant
R31	508438	179423	198	2021	0.04	<0.01%	397	4%	Insignificant
R32	508442	179464	198	2021	0.04	<0.01%	397	4%	Insignificant
R33	508302	179343	198	2021	0.04	<0.01%	397	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	198	2021	0.03	<0.01%	397	4%	Insignificant
R35	508128	179002	198	2021	0.03	<0.01%	397	4%	Insignificant
R36	508235	179077	198	2021	0.03	<0.01%	397	4%	Insignificant
R37	508252	179297	198	2021	0.04	<0.01%	397	4%	Insignificant
R38	508390	179110	198	2021	0.03	<0.01%	397	4%	Insignificant
R39	508964	179113	198	2022	0.02	<0.01%	397	4%	Insignificant
R40	508586	178796	207	2021	0.02	<0.01%	414	4%	Insignificant
R41	508329	179210	198	2021	0.03	<0.01%	397	4%	Insignificant
R42	508498	178826	207	2021	0.02	<0.01%	414	4%	Insignificant
R43	507561	179800	193	2018	0.10	<0.01%	386	4%	Insignificant
R44	507475	179859	193	2018	0.07	<0.01%	386	4%	Insignificant
R45	507432	180016	193	2019	0.07	<0.01%	386	4%	Insignificant
R46	508085	180491	198	2022	0.15	<0.01%	396	4%	Insignificant
R47	508435	180152	198	2020	0.22	<0.01%	396	4%	Insignificant
R48	508381	179255	198	2021	0.03	<0.01%	397	4%	Insignificant
R49	508471	179199	198	2021	0.03	<0.01%	397	4%	Insignificant
R50	508559	179329	198	2021	0.03	<0.01%	397	4%	Insignificant
R51	508596	179251	198	2021	0.03	<0.01%	397	4%	Insignificant
R52	508552	179168	198	2021	0.03	<0.01%	397	4%	Insignificant
R53	508524	179095	198	2021	0.03	<0.01%	397	4%	Insignificant
R54	508547	179498	198	2021	0.04	<0.01%	397	4%	Insignificant
R55	508431	179294	198	2021	0.03	<0.01%	397	4%	Insignificant
R56	508590	179416	198	2021	0.04	<0.01%	397	4%	Insignificant
R57	508649	179348	198	2021	0.03	<0.01%	397	4%	Insignificant
R58	508672	179473	198	2022	0.04	<0.01%	397	4%	Insignificant
R59	508756	179416	198	2022	0.03	<0.01%	397	4%	Insignificant
R60	508911	179342	198	2022	0.03	<0.01%	397	4%	Insignificant
R61	508929	179457	198	2022	0.03	<0.01%	397	4%	Insignificant
R62	508727	179241	198	2021	0.03	<0.01%	397	4%	Insignificant
R63	508943	179238	198	2022	0.03	<0.01%	397	4%	Insignificant
R64	508803	179321	198	2022	0.03	<0.01%	397	4%	Insignificant
R65	508720	179149	198	2021	0.03	<0.01%	397	4%	Insignificant
R66	508639	179056	198	2021	0.03	<0.01%	397	4%	Insignificant
R67	508786	179050	198	2021	0.02	<0.01%	397	4%	Insignificant
R68	508758	178981	207	2021	0.02	<0.01%	414	4%	Insignificant
R69	508710	178847	207	2021	0.02	<0.01%	414	4%	Insignificant
R70	509054	178994	207	2022	0.02	<0.01%	414	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	207	2021	0.02	<0.01%	414	4%	Insignificant
R72	508976	178882	207	2021	0.02	<0.01%	414	4%	Insignificant
R73	508895	178793	207	2021	0.02	<0.01%	414	4%	Insignificant
R74	507592	179687	193	2018	0.13	<0.01%	386	4%	Insignificant
R75	507417	179752	193	2020	0.06	<0.01%	386	4%	Insignificant
R76	507350	179651	193	2018	0.05	<0.01%	385	4%	Insignificant
R77	507459	179616	193	2018	0.08	<0.01%	386	4%	Insignificant
R78	507284	179777	193	2020	0.04	<0.01%	385	4%	Insignificant
R79	507222	179696	193	2020	0.04	<0.01%	385	4%	Insignificant
R80	507135	179553	193	2021	0.04	<0.01%	385	4%	Insignificant
R81	507183	179850	193	2019	0.04	<0.01%	385	4%	Insignificant
R82	507347	179533	193	2018	0.06	<0.01%	385	4%	Insignificant
R83	508590	180658	198	2019	0.08	<0.01%	396	4%	Insignificant
R84	508802	180708	198	2019	0.06	<0.01%	396	4%	Insignificant
R85	509485	180185	202	2020	0.04	<0.01%	403	4%	Insignificant
R86	509286	180317	202	2020	0.04	<0.01%	403	4%	Insignificant
R87	509148	180577	202	2020	0.04	<0.01%	403	4%	Insignificant
R88	507275	179381	193	2018	0.05	<0.01%	385	4%	Insignificant
R89	507256	179220	193	2018	0.05	<0.01%	385	4%	Insignificant
R90	507061	179406	193	2021	0.03	<0.01%	385	4%	Insignificant
R91	507191	179297	193	2018	0.04	<0.01%	385	4%	Insignificant
R92	507076	179216	193	2018	0.04	<0.01%	385	4%	Insignificant
R93	507232	179053	193	2018	0.04	<0.01%	385	4%	Insignificant
R94	508095	179455	198	2021	0.06	<0.01%	397	4%	Insignificant
R95	508124	179457	198	2021	0.05	<0.01%	397	4%	Insignificant
R96	508070	179461	198	2021	0.07	<0.01%	397	4%	Insignificant
AQS: 10,000µg/m ³ *Results are to 2d.p.									

D.2.5 NH₃ results for Testing Scenario 2

Table 48 NH₃ annual mean results (µg/m³)

Receptor	X	Y	Long term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R1	508156	179589	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R2	508149	179561	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R3	508159	179522	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R4	508162	179486	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R5	508177	179460	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R6	508138	179482	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R7	508100	179481	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R8	508064	179491	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R9	508039	179473	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R10	508034	179414	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R11	508018	179363	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R12	508020	179311	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R13	508092	179352	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R14	508089	179420	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R15	508149	179401	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R16	508190	179416	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R17	508236	179419	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R18	508224	179476	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R19	508202	179525	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R20	508228	179560	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R21	508194	179627	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R22	508266	179594	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R23	508365	179567	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R24	508298	179503	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R25	508295	179464	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R26	508097	179237	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R27	508130	179303	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R28	508196	179342	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R29	508303	179407	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R30	508407	179375	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R31	508438	179423	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R32	508442	179464	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R33	508302	179343	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant

Receptor	X	Y	Long term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R35	508128	179002	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R36	508235	179077	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R37	508252	179297	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R38	508390	179110	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R39	508964	179113	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R40	508586	178796	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R41	508329	179210	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R42	508498	178826	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R43	507561	179800	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R44	507475	179859	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R45	507432	180016	0.77	2019	<0.01	<0.01%	0.77	0.43%	Insignificant
R46	508085	180491	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R47	508435	180152	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R48	508381	179255	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R49	508471	179199	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R50	508559	179329	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R51	508596	179251	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R52	508552	179168	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R53	508524	179095	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R54	508547	179498	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R55	508431	179294	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R56	508590	179416	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R57	508649	179348	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R58	508672	179473	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R59	508756	179416	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R60	508911	179342	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R61	508929	179457	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R62	508727	179241	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R63	508943	179238	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R64	508803	179321	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant
R65	508720	179149	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R66	508639	179056	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R67	508786	179050	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R68	508758	178981	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R69	508710	178847	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R70	509054	178994	0.77	2022	<0.01	<0.01%	0.77	0.43%	Insignificant

Receptor	X	Y	Long term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R72	508976	178882	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R73	508895	178793	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R74	507592	179687	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R75	507417	179752	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R76	507350	179651	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R77	507459	179616	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R78	507284	179777	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R79	507222	179696	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R80	507135	179553	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R81	507183	179850	0.77	2019	<0.01	<0.01%	0.77	0.43%	Insignificant
R82	507347	179533	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R83	508590	180658	0.77	2019	<0.01	<0.01%	0.77	0.43%	Insignificant
R84	508802	180708	0.77	2019	<0.01	<0.01%	0.77	0.43%	Insignificant
R85	509485	180185	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R86	509286	180317	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R87	509148	180577	0.77	2020	<0.01	<0.01%	0.77	0.43%	Insignificant
R88	507275	179381	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R89	507256	179220	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R90	507061	179406	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R91	507191	179297	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R92	507076	179216	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R93	507232	179053	0.77	2018	<0.01	<0.01%	0.77	0.43%	Insignificant
R94	508095	179455	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R95	508124	179457	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant
R96	508070	179461	0.77	2021	<0.01	<0.01%	0.77	0.43%	Insignificant

AQS: 180µg/m³

*Results are to 2d.p.

Table 49 NH₃ hourly mean results (µg/m³)

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	0.77	2022	0.28	0.01%	1.82	0.07%	Insignificant
R1	508156	179589	0.77	2018	0.18	<0.01%	1.72	0.07%	Insignificant
R2	508149	179561	0.77	2022	0.35	0.01%	1.89	0.08%	Insignificant
R3	508159	179522	0.77	2022	0.34	0.01%	1.88	0.08%	Insignificant
R4	508162	179486	0.77	2022	0.16	<0.01%	1.70	0.07%	Insignificant
R5	508177	179460	0.77	2022	0.12	<0.01%	1.66	0.07%	Insignificant
R6	508138	179482	0.77	2018	0.17	<0.01%	1.71	0.07%	Insignificant
R7	508100	179481	0.77	2022	0.34	0.01%	1.88	0.08%	Insignificant
R8	508064	179491	0.77	2021	0.35	0.01%	1.89	0.08%	Insignificant
R9	508039	179473	0.77	2018	0.30	0.01%	1.84	0.07%	Insignificant
R10	508034	179414	0.77	2018	0.29	0.01%	1.83	0.07%	Insignificant
R11	508018	179363	0.77	2021	0.14	<0.01%	1.68	0.07%	Insignificant
R12	508020	179311	0.77	2019	0.13	<0.01%	1.67	0.07%	Insignificant
R13	508092	179352	0.77	2021	0.12	<0.01%	1.66	0.07%	Insignificant
R14	508089	179420	0.77	2021	0.18	<0.01%	1.72	0.07%	Insignificant
R15	508149	179401	0.77	2018	0.11	<0.01%	1.65	0.07%	Insignificant
R16	508190	179416	0.77	2022	0.11	<0.01%	1.65	0.07%	Insignificant
R17	508236	179419	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R18	508224	179476	0.77	2022	0.11	<0.01%	1.65	0.07%	Insignificant
R19	508202	179525	0.77	2022	0.25	<0.01%	1.79	0.07%	Insignificant
R20	508228	179560	0.77	2022	0.14	<0.01%	1.68	0.07%	Insignificant
R21	508194	179627	0.77	2022	0.18	<0.01%	1.72	0.07%	Insignificant
R22	508266	179594	0.77	2018	0.13	<0.01%	1.67	0.07%	Insignificant
R23	508365	179567	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R24	508298	179503	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R25	508295	179464	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R26	508097	179237	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R27	508130	179303	0.77	2018	0.12	<0.01%	1.66	0.07%	Insignificant
R28	508196	179342	0.77	2018	0.09	<0.01%	1.63	0.07%	Insignificant
R29	508303	179407	0.77	2021	0.12	<0.01%	1.66	0.07%	Insignificant
R30	508407	179375	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R31	508438	179423	0.77	2019	0.09	<0.01%	1.63	0.07%	Insignificant
R32	508442	179464	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R33	508302	179343	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R34	508188	179197	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R35	508128	179002	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R36	508235	179077	0.77	2021	0.08	<0.01%	1.62	0.06%	Insignificant
R37	508252	179297	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R38	508390	179110	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R39	508964	179113	0.77	2019	0.07	<0.01%	1.61	0.06%	Insignificant
R40	508586	178796	0.77	2021	0.07	<0.01%	1.61	0.06%	Insignificant
R41	508329	179210	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R42	508498	178826	0.77	2021	0.07	<0.01%	1.61	0.06%	Insignificant
R43	507561	179800	0.77	2019	0.13	<0.01%	1.67	0.07%	Insignificant
R44	507475	179859	0.77	2022	0.11	<0.01%	1.65	0.07%	Insignificant
R45	507432	180016	0.77	2022	0.11	<0.01%	1.65	0.07%	Insignificant
R46	508085	180491	0.77	2021	0.21	<0.01%	1.75	0.07%	Insignificant
R47	508435	180152	0.77	2020	0.13	<0.01%	1.67	0.07%	Insignificant
R48	508381	179255	0.77	2021	0.11	<0.01%	1.65	0.07%	Insignificant
R49	508471	179199	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R50	508559	179329	0.77	2018	0.07	<0.01%	1.61	0.06%	Insignificant
R51	508596	179251	0.77	2022	0.07	<0.01%	1.61	0.06%	Insignificant
R52	508552	179168	0.77	2021	0.08	<0.01%	1.62	0.06%	Insignificant
R53	508524	179095	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R54	508547	179498	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R55	508431	179294	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R56	508590	179416	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R57	508649	179348	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R58	508672	179473	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R59	508756	179416	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R60	508911	179342	0.77	2022	0.08	<0.01%	1.62	0.06%	Insignificant
R61	508929	179457	0.77	2022	0.08	<0.01%	1.62	0.06%	Insignificant
R62	508727	179241	0.77	2018	0.08	<0.01%	1.62	0.06%	Insignificant
R63	508943	179238	0.77	2021	0.07	<0.01%	1.61	0.06%	Insignificant
R64	508803	179321	0.77	2021	0.08	<0.01%	1.62	0.06%	Insignificant
R65	508720	179149	0.77	2018	0.07	<0.01%	1.61	0.06%	Insignificant
R66	508639	179056	0.77	2022	0.07	<0.01%	1.61	0.06%	Insignificant
R67	508786	179050	0.77	2018	0.06	<0.01%	1.60	0.06%	Insignificant
R68	508758	178981	0.77	2022	0.06	<0.01%	1.60	0.06%	Insignificant
R69	508710	178847	0.77	2022	0.07	<0.01%	1.61	0.06%	Insignificant
R70	509054	178994	0.77	2019	0.07	<0.01%	1.61	0.06%	Insignificant
R71	508547	178932	0.77	2021	0.08	<0.01%	1.62	0.06%	Insignificant
R72	508976	178882	0.77	2020	0.06	<0.01%	1.60	0.06%	Insignificant

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R73	508895	178793	0.77	2019	0.06	<0.01%	1.60	0.06%	Insignificant
R74	507592	179687	0.77	2020	0.32	0.01%	1.86	0.07%	Insignificant
R75	507417	179752	0.77	2019	0.09	<0.01%	1.63	0.07%	Insignificant
R76	507350	179651	0.77	2018	0.10	<0.01%	1.64	0.07%	Insignificant
R77	507459	179616	0.77	2018	0.10	<0.01%	1.64	0.07%	Insignificant
R78	507284	179777	0.77	2022	0.09	<0.01%	1.63	0.07%	Insignificant
R79	507222	179696	0.77	2022	0.10	<0.01%	1.64	0.07%	Insignificant
R80	507135	179553	0.77	2022	0.09	<0.01%	1.63	0.07%	Insignificant
R81	507183	179850	0.77	2019	0.11	<0.01%	1.65	0.07%	Insignificant
R82	507347	179533	0.77	2018	0.10	<0.01%	1.64	0.07%	Insignificant
R83	508590	180658	0.77	2022	0.10	<0.01%	1.64	0.07%	Insignificant
R84	508802	180708	0.77	2021	0.08	<0.01%	1.62	0.06%	Insignificant
R85	509485	180185	0.77	2020	0.06	<0.01%	1.60	0.06%	Insignificant
R86	509286	180317	0.77	2020	0.07	<0.01%	1.61	0.06%	Insignificant
R87	509148	180577	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R88	507275	179381	0.77	2018	0.10	<0.01%	1.64	0.07%	Insignificant
R89	507256	179220	0.77	2021	0.10	<0.01%	1.64	0.07%	Insignificant
R90	507061	179406	0.77	2018	0.08	<0.01%	1.62	0.06%	Insignificant
R91	507191	179297	0.77	2018	0.09	<0.01%	1.63	0.07%	Insignificant
R92	507076	179216	0.77	2018	0.08	<0.01%	1.62	0.06%	Insignificant
R93	507232	179053	0.77	2021	0.09	<0.01%	1.63	0.07%	Insignificant
R94	508095	179455	0.77	2021	0.19	<0.01%	1.73	0.07%	Insignificant
R95	508124	179457	0.77	2018	0.15	<0.01%	1.69	0.07%	Insignificant
R96	508070	179461	0.77	2018	0.28	0.01%	1.82	0.07%	Insignificant
AQS: 2500µg/m ³ *Results are to 2d.p.									

D.2.6 Ecological results for Testing Scenario 2

Table 50 NO_x daily mean results (µg/m³)

Receptor	X	Y	Short term NO _x background	Maximum Year	Maximum modelled PC	% of standard	PEC	% of standard	Significance
ER01	503052	175537	102.7	2022	0.04	0.01%	102.8	137%	Insignificant ¹
ER02	504576	174211	68.3	2021	0.04	0.1%	68.3	91%	Insignificant ¹
ER03	505304	174124	111.2	2021	0.05	0.1%	111.3	148%	Insignificant ¹
ER04	500573	175085	43.5	2021	0.02	0.01%	43.5	58%	Insignificant ¹
ER05	501398	174145	42.1	2022	0.03	0.01%	42.1	56%	Insignificant ¹
ER06	511637	170978	49.6	2021	0.02	0.01%	49.6	66%	Insignificant ¹
ER07	511968	170433	49.6	2021	0.02	0.01%	49.6	66%	Insignificant ¹
ER08	507957	179720	81.8	2021	2.02	2.7%	83.8	112%	Insignificant ¹
ER09	507553	179346	81.8	2020	0.51	0.7%	82.3	110%	Insignificant ¹
ER10	508104	179827	82.9	2020	3.00	4.0%	85.9	115%	Insignificant ¹
ER11	508088	179855	82.9	2020	3.73	5.0%	86.6	116%	Insignificant ¹
ER12	507609	179825	81.8	2021	1.12	1.5%	82.9	111%	Insignificant ¹
ER13	507617	179862	81.8	2021	1.17	1.6%	82.9	111%	Insignificant ¹
ER14	508099	180033	67.5	2022	7.73	10.3%	75.2	100%	Insignificant ¹
ER15	508737	180243	67.5	2020	0.47	0.6%	67.9	91%	Insignificant ¹
ER16	508875	180060	67.5	2022	0.42	0.6%	67.9	91%	Insignificant ¹
ER17	508045	178454	94.1	2019	0.18	0.2%	94.3	126%	Insignificant ¹
ER18	509422	178303	95.2	2020	0.15	0.2%	95.4	127%	Insignificant ¹
ER19	509435	178074	95.2	2020	0.12	0.2%	95.3	127%	Insignificant ¹
ER20	509498	178265	95.2	2020	0.15	0.2%	95.3	127%	Insignificant ¹
ER21	507244	180526	65.9	2020	0.32	0.4%	66.2	88%	Insignificant ¹

Critical level: 75µg/m³

¹Whilst the PEC compared to the air quality standard is above the critical level, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant.

Table 51 NO_x annual mean results (µg/m³)

Receptor	X	Y	Long term NO _x background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
ER01	503052	175537	51.4	2021	<0.01	<0.01%	51.4	51.4	Insignificant ¹
ER02	504576	174211	34.1	2021	<0.01	<0.01%	34.1	34.1	Insignificant ¹
ER03	505304	174124	55.6	2021	<0.01	<0.01%	55.6	55.6	Insignificant ¹
ER04	500573	175085	21.7	2021	<0.01	<0.01%	21.7	21.7	Insignificant ¹
ER05	501398	174145	21.0	2021	<0.01	<0.01%	21.0	21.0	Insignificant ¹
ER06	511637	170978	24.8	2021	<0.01	<0.01%	24.8	24.8	Insignificant ¹
ER07	511968	170433	24.8	2021	<0.01	<0.01%	24.8	24.8	Insignificant ¹
ER08	507957	179720	40.9	2021	<0.01	<0.01%	40.9	40.9	Insignificant ¹
ER09	507553	179346	40.9	2018	<0.01	<0.01%	40.9	40.9	Insignificant ¹
ER10	508104	179827	41.5	2021	<0.01	<0.01%	41.5	41.5	Insignificant ¹
ER11	508088	179855	41.5	2021	<0.01	<0.01%	41.5	41.5	Insignificant ¹
ER12	507609	179825	40.9	2018	<0.01	<0.01%	40.9	40.9	Insignificant ¹
ER13	507617	179862	40.9	2018	<0.01	<0.01%	40.9	40.9	Insignificant ¹
ER14	508099	180033	33.7	2020	<0.01	0.01%	33.7	33.7	Insignificant ¹
ER15	508737	180243	33.7	2020	<0.01	<0.01%	33.7	33.7	Insignificant ¹
ER16	508875	180060	33.7	2018	<0.01	<0.01%	33.7	33.7	Insignificant ¹
ER17	508045	178454	47.0	2021	<0.01	<0.01%	47.0	47.0	Insignificant ¹
ER18	509422	178303	47.6	2021	<0.01	<0.01%	47.6	47.6	Insignificant ¹
ER19	509435	178074	47.6	2021	<0.01	<0.01%	47.6	47.6	Insignificant ¹
ER20	509498	178265	47.6	2022	<0.01	<0.01%	47.6	47.6	Insignificant ¹
ER21	507244	180526	33.0	2022	<0.01	<0.01%	33.0	33.0	Insignificant ¹

Critical level: 30µg/m³
 *Results are to 2d.p.
¹Whilst the PEC compared to the air quality standard is above the critical level, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant.

Table 52 Nutrient nitrogen deposition results

Ecological receptor ID	Critical load min	Background Nitrogen deposition	Annual mean NO ₂ PC (µg/m ³)	N Dry deposition (kg N/ha/yr)	NH ₃ Dry deposition (kg N/ha/yr)	Proportion of PC to CL (%) Min	Total N dry deposition + Background (kg N/ha/yr)	Proportion of PEC to CL (%) Min
ER01	10	14.0	<0.01	<0.01	<0.01	<0.01	14.02	140
ER02	10	13.9	<0.01	<0.01	<0.01	<0.01	13.88	139
ER03	10	14.0	<0.01	<0.01	<0.01	<0.01	14.04	140
ER04	10	14.4	<0.01	<0.01	<0.01	<0.01	14.43	144
ER05	10	13.5	<0.01	<0.01	<0.01	<0.01	13.47	135
ER06	10	13.3	<0.01	<0.01	<0.01	<0.01	13.28	133
ER07	10	13.3	<0.01	<0.01	<0.01	<0.01	13.28	133
ER08	10	15.5	<0.01	<0.01	<0.01	<0.01	15.48	155
ER09	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER10	10	15.5	<0.01	<0.01	<0.01	<0.01	15.45	155
ER11	10	27.4	<0.01	<0.01	<0.01	<0.01	27.44	274
ER12	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER13	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER14	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER15	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER16	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER17	10	27.6	<0.01	<0.01	<0.01	<0.01	27.60	276
ER18	10	27.5	<0.01	<0.01	<0.01	<0.01	27.53	275
ER19	10	15.5	<0.01	<0.01	<0.01	<0.01	15.47	155
ER20	10	15.5	<0.01	<0.01	<0.01	<0.01	15.47	155
ER21	10	27.2	<0.01	<0.01	<0.01	<0.01	27.16	272

Table 53 Acid deposition results

Ecological receptor ID	Critical Load min Nitrogen (kg N/ha/yr)	Critical Load max Nitrogen (kg N/ha/yr)	Background Nitrogen deposition (kg N/ha/yr)	NO ₂ dry deposition (keq N/ha/yr)	NH ₃ dry deposition (keq N/ha/yr)	Acid dry deposition (keq N/ha/yr)	Exceedance
ER01	0.856	4.856	1.15	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER02	0.856	4.856	1.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER03	0.856	4.856	1.16	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER04	0.856	4.856	1.08	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER05	0.856	4.856	1.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER06	0.856	4.856	1.05	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER07	0.856	4.856	1.05	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER08	0.856	4.856	1.3	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER09	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER10	0.856	4.856	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER11	0.142	1.723	2.18	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER12	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER13	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER14	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER15	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER16	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER17	0.142	1.721	2.22	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER18	0.357	2.055	2.19	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER19	1.071	5.071	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER20	1.071	5.071	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER21	0.357	1.688	2.15	<0.01	<0.01	<0.01	PC < CL, No exceedance

Table 54 Annual NH₃ results for ecological receptors

Ecological receptor ID	Critical Load NH ₃ (µg/m ³)	Background NH ₃ deposition (µg/m ³)	PC NH ₃ (µg/m ³)	% of Critical level	Exceedance
ER01	3	1.33	<0.01	<0.01	PC < CL, No exceedance
ER02	3	1.36	<0.01	<0.01	PC < CL, No exceedance
ER03	3	1.37	<0.01	<0.01	PC < CL, No exceedance
ER04	3	1.36	<0.01	<0.01	PC < CL, No exceedance
ER05	3	1.30	<0.01	<0.01	PC < CL, No exceedance
ER06	3	1.48	<0.01	<0.01	PC < CL, No exceedance
ER07	3	1.48	<0.01	<0.01	PC < CL, No exceedance
ER08	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER09	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER10	3	1.57	<0.01	<0.01	PC < CL, No exceedance
ER11	3	1.57	<0.01	<0.01	PC < CL, No exceedance
ER12	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER13	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER14	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER15	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER16	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER17	3	1.52	<0.01	<0.01	PC < CL, No exceedance
ER18	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER19	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER20	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER21	3	1.57	<0.01	<0.01	PC < CL, No exceedance

D.3 Emergency Scenario

D.3.1 NO₂ results for Emergency Scenario

Table 55 NO₂ 99.79th percentile hourly mean results (µg/m³)

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	508162	73.2	2022	17.79	9%	91.0	35%	Insignificant
R1	508156	508156	73.2	2022	9.85	5%	83.0	31%	Insignificant
R2	508149	508149	73.2	2022	10.75	5%	84.0	32%	Insignificant
R3	508159	508159	73.2	2022	11.42	6%	84.6	32%	Insignificant
R4	508162	508162	73.2	2022	8.00	4%	81.2	31%	Insignificant
R5	508177	508177	73.2	2022	7.32	4%	80.5	30%	Insignificant
R6	508138	508138	73.2	2022	7.84	4%	81.0	30%	Insignificant
R7	508100	508100	73.2	2021	8.12	4%	81.3	31%	Insignificant
R8	508064	508064	73.2	2022	18.01	9%	91.2	36%	Insignificant
R9	508039	508039	73.2	2018	16.22	8%	89.4	35%	Insignificant
R10	508034	508034	73.2	2018	15.63	8%	88.8	34%	Insignificant
R11	508018	508018	73.2	2018	6.49	3%	79.7	30%	Insignificant
R12	508020	508020	73.2	2018	5.98	3%	79.2	29%	Insignificant
R13	508092	508092	73.2	2022	6.73	3%	79.9	30%	Insignificant
R14	508089	508089	73.2	2022	7.11	4%	80.3	30%	Insignificant
R15	508149	508149	73.2	2022	6.61	3%	79.8	30%	Insignificant
R16	508190	508190	73.2	2021	6.52	3%	79.7	30%	Insignificant
R17	508236	508236	73.2	2022	6.49	3%	79.7	30%	Insignificant
R18	508224	508224	73.2	2022	7.38	4%	80.6	30%	Insignificant
R19	508202	508202	73.2	2022	15.49	8%	88.7	34%	Insignificant
R20	508228	508228	73.2	2022	9.02	5%	82.2	31%	Insignificant
R21	508194	508194	73.2	2022	12.23	6%	85.4	33%	Insignificant
R22	508266	508266	73.2	2022	9.42	5%	82.6	31%	Insignificant
R23	508365	508365	73.2	2018	7.22	4%	80.4	30%	Insignificant
R24	508298	508298	73.2	2022	7.49	4%	80.7	30%	Insignificant
R25	508295	508295	73.2	2022	6.95	3%	80.2	30%	Insignificant
R26	508097	508097	73.2	2022	5.13	3%	78.3	29%	Insignificant
R27	508130	508130	73.2	2022	5.60	3%	78.8	29%	Insignificant
R28	508196	508196	73.2	2021	5.69	3%	78.9	29%	Insignificant
R29	508303	508303	73.2	2022	6.09	3%	79.3	30%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R30	508407	508407	73.2	2018	5.41	3%	78.6	29%	Insignificant
R31	508438	508438	73.2	2018	5.64	3%	78.8	29%	Insignificant
R32	508442	508442	73.2	2021	5.76	3%	79.0	29%	Insignificant
R33	508302	508302	73.2	2022	5.43	3%	78.6	29%	Insignificant
R34	508188	508188	73.2	2022	4.90	2%	78.1	29%	Insignificant
R35	508128	508128	73.2	2022	4.13	2%	77.3	29%	Insignificant
R36	508235	508235	73.2	2022	4.55	2%	77.8	29%	Insignificant
R37	508252	508252	73.2	2022	5.42	3%	78.6	29%	Insignificant
R38	508390	508390	73.2	2022	4.69	2%	77.9	29%	Insignificant
R39	508964	508964	73.2	2019	3.96	2%	77.2	28%	Insignificant
R40	508586	508586	73.2	2021	3.98	2%	77.2	32%	Insignificant
R41	508329	508329	73.2	2022	4.77	2%	78.0	29%	Insignificant
R42	508498	508498	73.2	2021	4.03	2%	77.2	32%	Insignificant
R43	507561	507561	73.2	2020	9.22	5%	82.4	31%	Insignificant
R44	507475	507475	73.2	2020	7.89	4%	81.1	30%	Insignificant
R45	507432	507432	73.2	2021	7.69	4%	80.9	26%	Insignificant
R46	508085	508085	73.2	2021	8.49	4%	81.7	27%	Insignificant
R47	508435	508435	73.2	2019	9.77	5%	83.0	28%	Insignificant
R48	508381	508381	73.2	2022	4.83	2%	78.0	29%	Insignificant
R49	508471	508471	73.2	2018	4.53	2%	77.7	29%	Insignificant
R50	508559	508559	73.2	2021	4.81	2%	78.0	29%	Insignificant
R51	508596	508596	73.2	2018	4.72	2%	77.9	29%	Insignificant
R52	508552	508552	73.2	2018	4.31	2%	77.5	29%	Insignificant
R53	508524	508524	73.2	2018	4.12	2%	77.3	29%	Insignificant
R54	508547	508547	73.2	2021	5.25	3%	78.5	29%	Insignificant
R55	508431	508431	73.2	2018	4.98	2%	78.2	29%	Insignificant
R56	508590	508590	73.2	2021	4.85	2%	78.0	29%	Insignificant
R57	508649	508649	73.2	2021	4.62	2%	77.8	29%	Insignificant
R58	508672	508672	73.2	2022	4.87	2%	78.1	29%	Insignificant
R59	508756	508756	73.2	2022	4.65	2%	77.9	29%	Insignificant
R60	508911	508911	73.2	2022	4.30	2%	77.5	29%	Insignificant
R61	508929	508929	73.2	2022	4.58	2%	77.8	29%	Insignificant
R62	508727	508727	73.2	2021	4.51	2%	77.7	29%	Insignificant
R63	508943	508943	73.2	2022	4.20	2%	77.4	29%	Insignificant
R64	508803	508803	73.2	2022	4.45	2%	77.7	29%	Insignificant
R65	508720	508720	73.2	2021	4.59	2%	77.8	29%	Insignificant
R66	508639	508639	73.2	2022	4.26	2%	77.5	29%	Insignificant

Receptor	X	Y	Short term NO ₂ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R67	508786	508786	73.2	2021	4.48	2%	77.7	29%	Insignificant
R68	508758	508758	73.2	2021	4.14	2%	77.3	32%	Insignificant
R69	508710	508710	73.2	2022	3.98	2%	77.2	32%	Insignificant
R70	509054	509054	73.2	2019	3.73	2%	76.9	32%	Insignificant
R71	508547	508547	73.2	2022	4.13	2%	77.3	32%	Insignificant
R72	508976	508976	73.2	2021	3.93	2%	77.1	32%	Insignificant
R73	508895	508895	73.2	2018	3.76	2%	77.0	31%	Insignificant
R74	507592	507592	73.2	2018	21.49	11%	94.7	37%	Insignificant
R75	507417	507417	73.2	2020	6.66	3%	79.9	30%	Insignificant
R76	507350	507350	73.2	2020	6.15	3%	79.4	29%	Insignificant
R77	507459	507459	73.2	2018	6.78	3%	80.0	30%	Insignificant
R78	507284	507284	73.2	2020	5.42	3%	78.6	29%	Insignificant
R79	507222	507222	73.2	2020	4.88	2%	78.1	29%	Insignificant
R80	507135	507135	73.2	2020	4.78	2%	78.0	29%	Insignificant
R81	507183	507183	73.2	2019	4.96	2%	78.2	29%	Insignificant
R82	507347	507347	73.2	2020	5.34	3%	78.5	29%	Insignificant
R83	508590	508590	73.2	2021	5.10	3%	78.3	25%	Insignificant
R84	508802	508802	73.2	2019	4.26	2%	77.5	25%	Insignificant
R85	509485	509485	73.2	2022	3.59	2%	76.8	24%	Insignificant
R86	509286	509286	73.2	2020	3.94	2%	77.1	24%	Insignificant
R87	509148	509148	73.2	2021	3.56	2%	76.8	24%	Insignificant
R88	507275	507275	73.2	2021	4.79	2%	78.0	29%	Insignificant
R89	507256	507256	73.2	2018	4.84	2%	78.0	29%	Insignificant
R90	507061	507061	73.2	2018	4.34	2%	77.5	28%	Insignificant
R91	507191	507191	73.2	2021	4.55	2%	77.7	28%	Insignificant
R92	507076	507076	73.2	2021	4.22	2%	77.4	28%	Insignificant
R93	507232	507232	73.2	2020	4.51	2%	77.7	28%	Insignificant
R94	508095	508095	73.2	2021	7.66	4%	80.9	30%	Insignificant
R95	508124	508124	73.2	2022	7.53	4%	80.7	30%	Insignificant
R96	508070	508070	73.2	2022	16.14	8%	89.3	35%	Insignificant
AQS: 200µg/m ³ *Results are to 2d.p.									

Table 56 NO₂ hourly mean hypergeometric distribution analysis (71 hours)

Receptor	N	P	Likelihood of exceedance
R0	72	<0.01%	Highly unlikely
R1	72	<0.01%	Highly unlikely
R2	72	<0.01%	Highly unlikely
R3	72	<0.01%	Highly unlikely
R4	72	<0.01%	Highly unlikely
R5	72	<0.01%	Highly unlikely
R6	72	<0.01%	Highly unlikely
R7	72	<0.01%	Highly unlikely
R8	72	<0.01%	Highly unlikely
R9	72	<0.01%	Highly unlikely
R10	72	<0.01%	Highly unlikely
R11	72	<0.01%	Highly unlikely
R12	72	<0.01%	Highly unlikely
R13	72	<0.01%	Highly unlikely
R14	72	<0.01%	Highly unlikely
R15	72	<0.01%	Highly unlikely
R16	72	<0.01%	Highly unlikely
R17	72	<0.01%	Highly unlikely
R18	72	<0.01%	Highly unlikely
R19	72	<0.01%	Highly unlikely
R20	72	<0.01%	Highly unlikely
R21	72	<0.01%	Highly unlikely
R22	72	<0.01%	Highly unlikely
R23	72	<0.01%	Highly unlikely
R24	72	<0.01%	Highly unlikely
R25	72	<0.01%	Highly unlikely
R26	72	<0.01%	Highly unlikely
R27	72	<0.01%	Highly unlikely
R28	72	<0.01%	Highly unlikely
R29	72	<0.01%	Highly unlikely
R30	72	<0.01%	Highly unlikely
R31	72	<0.01%	Highly unlikely
R32	72	<0.01%	Highly unlikely
R33	72	<0.01%	Highly unlikely
R34	72	<0.01%	Highly unlikely
R35	72	<0.01%	Highly unlikely
R36	72	<0.01%	Highly unlikely

Receptor	N	P	Likelihood of exceedance
R37	72	<0.01%	Highly unlikely
R38	72	<0.01%	Highly unlikely
R39	72	<0.01%	Highly unlikely
R40	72	<0.01%	Highly unlikely
R41	72	<0.01%	Highly unlikely
R42	72	<0.01%	Highly unlikely
R43	72	0.05%	Highly unlikely
R44	72	0.10%	Highly unlikely
R45	72	<0.01%	Highly unlikely
R46	72	<0.01%	Highly unlikely
R47	72	<0.01%	Highly unlikely
R48	72	<0.01%	Highly unlikely
R49	72	<0.01%	Highly unlikely
R50	72	<0.01%	Highly unlikely
R51	72	<0.01%	Highly unlikely
R52	72	<0.01%	Highly unlikely
R53	72	<0.01%	Highly unlikely
R54	72	<0.01%	Highly unlikely
R55	72	<0.01%	Highly unlikely
R56	72	<0.01%	Highly unlikely
R57	72	<0.01%	Highly unlikely
R58	72	<0.01%	Highly unlikely
R59	72	<0.01%	Highly unlikely
R60	72	<0.01%	Highly unlikely
R61	72	<0.01%	Highly unlikely
R62	72	<0.01%	Highly unlikely
R63	72	<0.01%	Highly unlikely
R64	72	<0.01%	Highly unlikely
R65	72	<0.01%	Highly unlikely
R66	72	<0.01%	Highly unlikely
R67	72	<0.01%	Highly unlikely
R68	72	<0.01%	Highly unlikely
R69	72	<0.01%	Highly unlikely
R70	72	<0.01%	Highly unlikely
R71	72	<0.01%	Highly unlikely
R72	72	<0.01%	Highly unlikely
R73	72	<0.01%	Highly unlikely
R74	72	<0.01%	Highly unlikely

Receptor	N	P	Likelihood of exceedance
R75	72	<0.01%	Highly unlikely
R76	72	<0.01%	Highly unlikely
R77	72	<0.01%	Highly unlikely
R78	72	<0.01%	Highly unlikely
R79	72	<0.01%	Highly unlikely
R80	72	<0.01%	Highly unlikely
R81	72	<0.01%	Highly unlikely
R82	72	<0.01%	Highly unlikely
R83	72	<0.01%	Highly unlikely
R84	72	<0.01%	Highly unlikely
R85	72	<0.01%	Highly unlikely
R86	72	<0.01%	Highly unlikely
R87	72	<0.01%	Highly unlikely
R88	72	<0.01%	Highly unlikely
R89	72	<0.01%	Highly unlikely
R90	72	<0.01%	Highly unlikely
R91	72	<0.01%	Highly unlikely
R92	72	<0.01%	Highly unlikely
R93	72	<0.01%	Highly unlikely
R94	72	<0.01%	Highly unlikely
R95	72	<0.01%	Highly unlikely
R96	72	<0.01%	Highly unlikely
ER01	72	<0.01%	Highly unlikely
ER02	72	<0.01%	Highly unlikely
ER03	72	<0.01%	Highly unlikely
ER04	72	<0.01%	Highly unlikely
ER05	72	<0.01%	Highly unlikely
ER06	72	<0.01%	Highly unlikely
ER07	72	<0.01%	Highly unlikely
ER08	72	<0.01%	Highly unlikely
ER09	72	<0.01%	Highly unlikely
ER10	72	<0.01%	Highly unlikely
ER11	72	<0.01%	Highly unlikely
ER12	72	<0.01%	Highly unlikely
ER13	72	<0.01%	Highly unlikely
ER14	72	<0.01%	Highly unlikely
ER15	72	<0.01%	Highly unlikely
ER16	72	<0.01%	Highly unlikely

Receptor	N	P	Likelihood of exceedance
ER17	72	<0.01%	Highly unlikely
ER18	72	<0.01%	Highly unlikely
ER19	72	<0.01%	Highly unlikely
ER20	72	<0.01%	Highly unlikely
ER21	72	<0.01%	Highly unlikely
N= operating hours per year; P = Probability of exceedance of the standard.			

Table 57 NO₂ 10-minute mean results (AEGLs) (µg/m³)

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R0	508162	508162	2018	71.1	24.9	2.60%	0.07%	0.04%
R1	508156	508156	2018	48.7	17.0	1.78%	0.04%	0.03%
R2	508149	508149	2022	108.9	38.1	3.99%	0.10%	0.06%
R3	508159	508159	2022	105.3	36.9	3.86%	0.10%	0.06%
R4	508162	508162	2019	51.1	17.9	1.87%	0.05%	0.03%
R5	508177	508177	2022	39.9	14.0	1.46%	0.04%	0.02%
R6	508138	508138	2018	50.6	17.7	1.85%	0.05%	0.03%
R7	508100	508100	2022	108.1	37.8	3.96%	0.10%	0.06%
R8	508064	508064	2021	109.3	38.2	4.00%	0.10%	0.06%
R9	508039	508039	2018	94.6	33.1	3.46%	0.09%	0.05%
R10	508034	508034	2018	93.0	32.5	3.40%	0.09%	0.05%
R11	508018	508018	2021	50.2	17.6	1.84%	0.05%	0.03%
R12	508020	508020	2021	44.8	15.7	1.64%	0.04%	0.02%
R13	508092	508092	2021	41.3	14.5	1.51%	0.04%	0.02%
R14	508089	508089	2019	45.1	15.8	1.65%	0.04%	0.02%
R15	508149	508149	2018	34.3	12.0	1.25%	0.03%	0.02%
R16	508190	508190	2022	34.0	11.9	1.24%	0.03%	0.02%
R17	508236	508236	2021	35.8	12.5	1.31%	0.03%	0.02%
R18	508224	508224	2021	36.4	12.8	1.33%	0.03%	0.02%
R19	508202	508202	2018	60.7	21.2	2.22%	0.06%	0.03%
R20	508228	508228	2022	45.2	15.8	1.65%	0.04%	0.02%
R21	508194	508194	2022	54.6	19.1	2.00%	0.05%	0.03%
R22	508266	508266	2018	41.3	14.5	1.51%	0.04%	0.02%
R23	508365	508365	2021	31.6	11.1	1.16%	0.03%	0.02%
R24	508298	508298	2021	35.3	12.4	1.29%	0.03%	0.02%
R25	508295	508295	2021	39.8	13.9	1.46%	0.04%	0.02%
R26	508097	508097	2021	40.3	14.1	1.48%	0.04%	0.02%
R27	508130	508130	2021	34.7	12.1	1.27%	0.03%	0.02%
R28	508196	508196	2021	30.9	10.8	1.13%	0.03%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R29	508303	508303	2021	42.2	14.8	1.54%	0.04%	0.02%
R30	508407	508407	2022	32.1	11.2	1.18%	0.03%	0.02%
R31	508438	508438	2019	27.7	9.7	1.02%	0.03%	0.01%
R32	508442	508442	2019	28.0	9.8	1.03%	0.03%	0.02%
R33	508302	508302	2021	41.3	14.5	1.51%	0.04%	0.02%
R34	508188	508188	2022	30.2	10.6	1.11%	0.03%	0.02%
R35	508128	508128	2021	37.5	13.1	1.37%	0.03%	0.02%
R36	508235	508235	2022	30.3	10.6	1.11%	0.03%	0.02%
R37	508252	508252	2021	34.4	12.1	1.26%	0.03%	0.02%
R38	508390	508390	2021	35.9	12.5	1.31%	0.03%	0.02%
R39	508964	508964	2018	27.0	9.5	0.99%	0.02%	0.01%
R40	508586	508586	2021	29.6	10.4	1.08%	0.03%	0.02%
R41	508329	508329	2021	36.1	12.6	1.32%	0.03%	0.02%
R42	508498	508498	2021	27.3	9.6	1.00%	0.02%	0.01%
R43	507561	507561	2019	36.8	12.9	1.35%	0.03%	0.02%
R44	507475	507475	2022	33.4	11.7	1.22%	0.03%	0.02%
R45	507432	507432	2022	32.8	11.5	1.20%	0.03%	0.02%
R46	508085	508085	2021	64.3	22.5	2.35%	0.06%	0.03%
R47	508435	508435	2022	37.3	13.0	1.36%	0.03%	0.02%
R48	508381	508381	2021	41.5	14.5	1.52%	0.04%	0.02%
R49	508471	508471	2021	35.2	12.3	1.29%	0.03%	0.02%
R50	508559	508559	2018	27.8	9.7	1.02%	0.03%	0.01%
R51	508596	508596	2018	27.1	9.5	0.99%	0.02%	0.01%
R52	508552	508552	2018	31.4	11.0	1.15%	0.03%	0.02%
R53	508524	508524	2022	33.5	11.7	1.23%	0.03%	0.02%
R54	508547	508547	2021	37.2	13.0	1.36%	0.03%	0.02%
R55	508431	508431	2021	34.8	12.2	1.28%	0.03%	0.02%
R56	508590	508590	2021	31.8	11.1	1.16%	0.03%	0.02%
R57	508649	508649	2018	31.1	10.9	1.14%	0.03%	0.02%
R58	508672	508672	2021	36.4	12.7	1.33%	0.03%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R59	508756	508756	2022	34.3	12.0	1.25%	0.03%	0.02%
R60	508911	508911	2022	31.0	10.8	1.13%	0.03%	0.02%
R61	508929	508929	2022	30.5	10.7	1.12%	0.03%	0.02%
R62	508727	508727	2021	29.4	10.3	1.08%	0.03%	0.02%
R63	508943	508943	2021	28.8	10.1	1.06%	0.03%	0.02%
R64	508803	508803	2021	32.9	11.5	1.21%	0.03%	0.02%
R65	508720	508720	2018	28.0	9.8	1.03%	0.03%	0.02%
R66	508639	508639	2018	29.5	10.3	1.08%	0.03%	0.02%
R67	508786	508786	2018	26.7	9.3	0.98%	0.02%	0.01%
R68	508758	508758	2021	26.8	9.4	0.98%	0.02%	0.01%
R69	508710	508710	2022	27.5	9.6	1.00%	0.03%	0.01%
R70	509054	509054	2019	26.6	9.3	0.97%	0.02%	0.01%
R71	508547	508547	2021	32.9	11.5	1.21%	0.03%	0.02%
R72	508976	508976	2018	22.5	7.9	0.82%	0.02%	0.01%
R73	508895	508895	2021	24.6	8.6	0.90%	0.02%	0.01%
R74	507592	507592	2018	76.6	26.8	2.80%	0.07%	0.04%
R75	507417	507417	2022	38.4	13.4	1.41%	0.04%	0.02%
R76	507350	507350	2018	37.0	12.9	1.35%	0.03%	0.02%
R77	507459	507459	2018	33.9	11.9	1.24%	0.03%	0.02%
R78	507284	507284	2022	26.3	9.2	0.96%	0.02%	0.01%
R79	507222	507222	2022	42.9	15.0	1.57%	0.04%	0.02%
R80	507135	507135	2022	34.9	12.2	1.28%	0.03%	0.02%
R81	507183	507183	2019	37.5	13.1	1.37%	0.03%	0.02%
R82	507347	507347	2018	34.5	12.1	1.26%	0.03%	0.02%
R83	508590	508590	2022	34.7	12.1	1.27%	0.03%	0.02%
R84	508802	508802	2021	31.6	11.1	1.16%	0.03%	0.02%
R85	509485	509485	2020	27.6	9.7	1.01%	0.03%	0.01%
R86	509286	509286	2020	28.6	10.0	1.05%	0.03%	0.02%
R87	509148	509148	2021	33.2	11.6	1.22%	0.03%	0.02%
R88	507275	507275	2018	38.1	13.3	1.39%	0.03%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R89	507256	507256	2021	39.5	13.8	1.45%	0.04%	0.02%
R90	507061	507061	2018	30.1	10.5	1.10%	0.03%	0.02%
R91	507191	507191	2018	35.2	12.3	1.29%	0.03%	0.02%
R92	507076	507076	2018	32.3	11.3	1.18%	0.03%	0.02%
R93	507232	507232	2021	42.1	14.7	1.54%	0.04%	0.02%
R94	508095	508095	2022	50.5	17.7	1.85%	0.05%	0.03%
R95	508124	508124	2018	45.8	16.0	1.68%	0.04%	0.02%
R96	508070	508070	2021	82.0	28.7	3.00%	0.08%	0.04%

Table 58 NO₂ 30-minute mean results (AEGLs) (µg/m³)

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R0	508162	508162	2018	71.3	24.9	2.61%	0.09%	0.05%
R1	508156	508156	2018	47.2	16.5	1.73%	0.06%	0.03%
R2	508149	508149	2022	98.6	34.5	3.61%	0.12%	0.07%
R3	508159	508159	2022	95.2	33.3	3.49%	0.12%	0.07%
R4	508162	508162	2019	46.7	16.3	1.71%	0.06%	0.03%
R5	508177	508177	2022	35.6	12.5	1.30%	0.04%	0.03%
R6	508138	508138	2018	45.6	15.9	1.67%	0.06%	0.03%
R7	508100	508100	2022	95.4	33.4	3.49%	0.12%	0.07%
R8	508064	508064	2021	98.5	34.5	3.60%	0.12%	0.07%
R9	508039	508039	2018	83.6	29.3	3.06%	0.10%	0.06%
R10	508034	508034	2018	81.9	28.7	3.00%	0.10%	0.06%
R11	508018	508018	2021	42.0	14.7	1.54%	0.05%	0.03%
R12	508020	508020	2019	37.3	13.1	1.37%	0.05%	0.03%
R13	508092	508092	2021	34.5	12.1	1.26%	0.04%	0.03%
R14	508089	508089	2019	43.3	15.2	1.59%	0.05%	0.03%
R15	508149	508149	2018	30.4	10.7	1.11%	0.04%	0.02%
R16	508190	508190	2022	30.2	10.6	1.10%	0.04%	0.02%
R17	508236	508236	2021	31.1	10.9	1.14%	0.04%	0.02%
R18	508224	508224	2021	31.3	10.9	1.14%	0.04%	0.02%
R19	508202	508202	2018	61.8	21.6	2.26%	0.08%	0.05%
R20	508228	508228	2022	40.5	14.2	1.48%	0.05%	0.03%
R21	508194	508194	2022	49.7	17.4	1.82%	0.06%	0.04%
R22	508266	508266	2018	37.6	13.2	1.38%	0.05%	0.03%
R23	508365	508365	2021	28.1	9.8	1.03%	0.03%	0.02%
R24	508298	508298	2021	30.6	10.7	1.12%	0.04%	0.02%
R25	508295	508295	2021	33.4	11.7	1.22%	0.04%	0.02%
R26	508097	508097	2021	33.1	11.6	1.21%	0.04%	0.02%
R27	508130	508130	2018	30.9	10.8	1.13%	0.04%	0.02%
R28	508196	508196	2021	26.3	9.2	0.96%	0.03%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R29	508303	508303	2021	34.8	12.2	1.28%	0.04%	0.03%
R30	508407	508407	2021	28.2	9.9	1.03%	0.03%	0.02%
R31	508438	508438	2019	24.5	8.6	0.90%	0.03%	0.02%
R32	508442	508442	2021	24.4	8.5	0.89%	0.03%	0.02%
R33	508302	508302	2021	34.2	12.0	1.25%	0.04%	0.03%
R34	508188	508188	2021	25.7	9.0	0.94%	0.03%	0.02%
R35	508128	508128	2021	30.1	10.5	1.10%	0.04%	0.02%
R36	508235	508235	2022	23.3	8.2	0.85%	0.03%	0.02%
R37	508252	508252	2021	28.3	9.9	1.04%	0.03%	0.02%
R38	508390	508390	2021	29.5	10.3	1.08%	0.04%	0.02%
R39	508964	508964	2018	21.5	7.5	0.79%	0.03%	0.02%
R40	508586	508586	2021	23.0	8.1	0.84%	0.03%	0.02%
R41	508329	508329	2021	30.6	10.7	1.12%	0.04%	0.02%
R42	508498	508498	2021	22.5	7.9	0.82%	0.03%	0.02%
R43	507561	507561	2019	34.4	12.1	1.26%	0.04%	0.03%
R44	507475	507475	2022	30.0	10.5	1.10%	0.04%	0.02%
R45	507432	507432	2022	29.4	10.3	1.08%	0.04%	0.02%
R46	508085	508085	2021	58.1	20.3	2.13%	0.07%	0.04%
R47	508435	508435	2022	35.0	12.2	1.28%	0.04%	0.03%
R48	508381	508381	2021	33.6	11.8	1.23%	0.04%	0.02%
R49	508471	508471	2021	29.5	10.3	1.08%	0.04%	0.02%
R50	508559	508559	2018	21.2	7.4	0.77%	0.03%	0.02%
R51	508596	508596	2018	20.9	7.3	0.77%	0.03%	0.02%
R52	508552	508552	2022	25.5	8.9	0.93%	0.03%	0.02%
R53	508524	508524	2021	27.5	9.6	1.01%	0.03%	0.02%
R54	508547	508547	2021	31.0	10.8	1.13%	0.04%	0.02%
R55	508431	508431	2021	30.1	10.5	1.10%	0.04%	0.02%
R56	508590	508590	2021	27.4	9.6	1.00%	0.03%	0.02%
R57	508649	508649	2018	25.7	9.0	0.94%	0.03%	0.02%
R58	508672	508672	2021	29.8	10.4	1.09%	0.04%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R59	508756	508756	2022	27.6	9.6	1.01%	0.03%	0.02%
R60	508911	508911	2022	24.5	8.6	0.90%	0.03%	0.02%
R61	508929	508929	2022	24.2	8.5	0.88%	0.03%	0.02%
R62	508727	508727	2018	23.9	8.4	0.88%	0.03%	0.02%
R63	508943	508943	2021	22.7	8.0	0.83%	0.03%	0.02%
R64	508803	508803	2021	26.2	9.2	0.96%	0.03%	0.02%
R65	508720	508720	2018	20.9	7.3	0.77%	0.03%	0.02%
R66	508639	508639	2022	23.0	8.0	0.84%	0.03%	0.02%
R67	508786	508786	2018	19.7	6.9	0.72%	0.02%	0.01%
R68	508758	508758	2022	19.4	6.8	0.71%	0.02%	0.01%
R69	508710	508710	2022	21.6	7.5	0.79%	0.03%	0.02%
R70	509054	509054	2019	20.7	7.3	0.76%	0.03%	0.02%
R71	508547	508547	2021	25.9	9.1	0.95%	0.03%	0.02%
R72	508976	508976	2019	17.2	6.0	0.63%	0.02%	0.01%
R73	508895	508895	2019	17.4	6.1	0.64%	0.02%	0.01%
R74	507592	507592	2019	79.8	27.9	2.92%	0.10%	0.06%
R75	507417	507417	2022	28.9	10.1	1.06%	0.04%	0.02%
R76	507350	507350	2018	30.6	10.7	1.12%	0.04%	0.02%
R77	507459	507459	2018	29.5	10.3	1.08%	0.04%	0.02%
R78	507284	507284	2022	24.6	8.6	0.90%	0.03%	0.02%
R79	507222	507222	2022	32.4	11.3	1.19%	0.04%	0.02%
R80	507135	507135	2022	28.5	10.0	1.04%	0.03%	0.02%
R81	507183	507183	2019	31.6	11.1	1.16%	0.04%	0.02%
R82	507347	507347	2018	29.6	10.4	1.08%	0.04%	0.02%
R83	508590	508590	2022	30.1	10.5	1.10%	0.04%	0.02%
R84	508802	508802	2021	25.5	8.9	0.94%	0.03%	0.02%
R85	509485	509485	2020	20.4	7.1	0.75%	0.02%	0.01%
R86	509286	509286	2020	22.5	7.9	0.82%	0.03%	0.02%
R87	509148	509148	2021	26.9	9.4	0.98%	0.03%	0.02%
R88	507275	507275	2018	30.5	10.7	1.12%	0.04%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R89	507256	507256	2021	31.0	10.9	1.14%	0.04%	0.02%
R90	507061	507061	2018	24.2	8.5	0.89%	0.03%	0.02%
R91	507191	507191	2018	28.0	9.8	1.03%	0.03%	0.02%
R92	507076	507076	2018	25.3	8.9	0.93%	0.03%	0.02%
R93	507232	507232	2021	29.7	10.4	1.09%	0.04%	0.02%
R94	508095	508095	2019	44.6	15.6	1.63%	0.05%	0.03%
R95	508124	508124	2018	40.8	14.3	1.49%	0.05%	0.03%
R96	508070	508070	2022	72.0	25.2	2.63%	0.09%	0.05%

Table 59 NO₂ 1-hour mean results (AEGLs) (µg/m³)

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R0	508162	508162	2022	70.3	24.6	2.57%	0.11%	0.06%
R1	508156	508156	2018	45.2	15.8	1.66%	0.07%	0.04%
R2	508149	508149	2022	87.4	30.6	3.20%	0.13%	0.08%
R3	508159	508159	2022	84.3	29.5	3.09%	0.13%	0.08%
R4	508162	508162	2022	39.6	13.9	1.45%	0.06%	0.04%
R5	508177	508177	2022	31.1	10.9	1.14%	0.05%	0.03%
R6	508138	508138	2018	40.9	14.3	1.50%	0.06%	0.04%
R7	508100	508100	2022	82.6	28.9	3.02%	0.13%	0.08%
R8	508064	508064	2021	87.0	30.4	3.18%	0.13%	0.08%
R9	508039	508039	2018	72.5	25.4	2.65%	0.11%	0.07%
R10	508034	508034	2018	70.9	24.8	2.59%	0.11%	0.06%
R11	508018	508018	2021	34.8	12.2	1.27%	0.05%	0.03%
R12	508020	508020	2019	31.1	10.9	1.14%	0.05%	0.03%
R13	508092	508092	2021	28.6	10.0	1.05%	0.04%	0.03%
R14	508089	508089	2021	45.7	16.0	1.67%	0.07%	0.04%
R15	508149	508149	2018	26.6	9.3	0.97%	0.04%	0.02%
R16	508190	508190	2022	26.2	9.2	0.96%	0.04%	0.02%
R17	508236	508236	2021	26.8	9.4	0.98%	0.04%	0.02%
R18	508224	508224	2022	27.2	9.5	1.00%	0.04%	0.02%
R19	508202	508202	2022	62.0	21.7	2.27%	0.09%	0.06%
R20	508228	508228	2022	35.6	12.5	1.30%	0.05%	0.03%
R21	508194	508194	2022	44.2	15.5	1.62%	0.07%	0.04%
R22	508266	508266	2018	33.5	11.7	1.22%	0.05%	0.03%
R23	508365	508365	2022	24.8	8.7	0.91%	0.04%	0.02%
R24	508298	508298	2021	26.4	9.3	0.97%	0.04%	0.02%
R25	508295	508295	2021	28.1	9.8	1.03%	0.04%	0.03%
R26	508097	508097	2021	27.0	9.5	0.99%	0.04%	0.02%
R27	508130	508130	2018	29.1	10.2	1.07%	0.04%	0.03%
R28	508196	508196	2021	22.1	7.7	0.81%	0.03%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R29	508303	508303	2021	28.9	10.1	1.06%	0.04%	0.03%
R30	508407	508407	2021	24.8	8.7	0.91%	0.04%	0.02%
R31	508438	508438	2019	21.2	7.4	0.77%	0.03%	0.02%
R32	508442	508442	2021	21.0	7.4	0.77%	0.03%	0.02%
R33	508302	508302	2021	28.4	9.9	1.04%	0.04%	0.03%
R34	508188	508188	2021	22.6	7.9	0.83%	0.03%	0.02%
R35	508128	508128	2021	24.2	8.5	0.89%	0.04%	0.02%
R36	508235	508235	2021	20.3	7.1	0.74%	0.03%	0.02%
R37	508252	508252	2021	24.2	8.5	0.89%	0.04%	0.02%
R38	508390	508390	2021	24.2	8.5	0.89%	0.04%	0.02%
R39	508964	508964	2018	17.3	6.0	0.63%	0.03%	0.02%
R40	508586	508586	2021	18.2	6.4	0.67%	0.03%	0.02%
R41	508329	508329	2021	25.6	9.0	0.94%	0.04%	0.02%
R42	508498	508498	2021	18.4	6.4	0.67%	0.03%	0.02%
R43	507561	507561	2019	31.7	11.1	1.16%	0.05%	0.03%
R44	507475	507475	2022	26.5	9.3	0.97%	0.04%	0.02%
R45	507432	507432	2022	25.9	9.1	0.95%	0.04%	0.02%
R46	508085	508085	2021	51.5	18.0	1.89%	0.08%	0.05%
R47	508435	508435	2022	32.2	11.3	1.18%	0.05%	0.03%
R48	508381	508381	2021	27.4	9.6	1.00%	0.04%	0.03%
R49	508471	508471	2021	24.5	8.6	0.90%	0.04%	0.02%
R50	508559	508559	2018	18.5	6.5	0.68%	0.03%	0.02%
R51	508596	508596	2022	17.4	6.1	0.64%	0.03%	0.02%
R52	508552	508552	2022	21.1	7.4	0.77%	0.03%	0.02%
R53	508524	508524	2021	22.6	7.9	0.83%	0.03%	0.02%
R54	508547	508547	2021	25.6	9.0	0.94%	0.04%	0.02%
R55	508431	508431	2021	25.5	8.9	0.93%	0.04%	0.02%
R56	508590	508590	2021	23.2	8.1	0.85%	0.04%	0.02%
R57	508649	508649	2021	21.4	7.5	0.78%	0.03%	0.02%
R58	508672	508672	2021	24.3	8.5	0.89%	0.04%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R59	508756	508756	2021	22.4	7.8	0.82%	0.03%	0.02%
R60	508911	508911	2022	19.6	6.9	0.72%	0.03%	0.02%
R61	508929	508929	2022	19.6	6.8	0.72%	0.03%	0.02%
R62	508727	508727	2018	19.8	6.9	0.72%	0.03%	0.02%
R63	508943	508943	2021	18.1	6.3	0.66%	0.03%	0.02%
R64	508803	508803	2021	21.0	7.4	0.77%	0.03%	0.02%
R65	508720	508720	2018	17.0	6.0	0.62%	0.03%	0.02%
R66	508639	508639	2022	19.0	6.7	0.70%	0.03%	0.02%
R67	508786	508786	2018	15.3	5.4	0.56%	0.02%	0.01%
R68	508758	508758	2022	15.7	5.5	0.57%	0.02%	0.01%
R69	508710	508710	2022	17.2	6.0	0.63%	0.03%	0.02%
R70	509054	509054	2019	16.5	5.8	0.61%	0.03%	0.02%
R71	508547	508547	2021	20.6	7.2	0.75%	0.03%	0.02%
R72	508976	508976	2018	13.7	4.8	0.50%	0.02%	0.01%
R73	508895	508895	2019	13.7	4.8	0.50%	0.02%	0.01%
R74	507592	507592	2020	78.4	27.4	2.87%	0.12%	0.07%
R75	507417	507417	2019	23.0	8.0	0.84%	0.04%	0.02%
R76	507350	507350	2018	25.1	8.8	0.92%	0.04%	0.02%
R77	507459	507459	2018	25.2	8.8	0.92%	0.04%	0.02%
R78	507284	507284	2022	21.3	7.4	0.78%	0.03%	0.02%
R79	507222	507222	2022	25.2	8.8	0.92%	0.04%	0.02%
R80	507135	507135	2022	23.0	8.0	0.84%	0.04%	0.02%
R81	507183	507183	2019	26.4	9.2	0.96%	0.04%	0.02%
R82	507347	507347	2018	25.0	8.7	0.91%	0.04%	0.02%
R83	508590	508590	2022	25.0	8.7	0.91%	0.04%	0.02%
R84	508802	508802	2021	20.7	7.2	0.76%	0.03%	0.02%
R85	509485	509485	2020	15.7	5.5	0.57%	0.02%	0.01%
R86	509286	509286	2020	17.7	6.2	0.65%	0.03%	0.02%
R87	509148	509148	2021	21.8	7.6	0.80%	0.03%	0.02%
R88	507275	507275	2018	24.6	8.6	0.90%	0.04%	0.02%

Receptor	X	Y	Year of Max PC	Max NO _x PC	Max NO ₂ PC	AEGL 1 (% of standard)	AEGL 2 (% of standard)	AEGL 3 (% of standard)
R89	507256	507256	2021	24.6	8.6	0.90%	0.04%	0.02%
R90	507061	507061	2018	19.6	6.8	0.72%	0.03%	0.02%
R91	507191	507191	2018	22.5	7.9	0.82%	0.03%	0.02%
R92	507076	507076	2018	20.1	7.0	0.74%	0.03%	0.02%
R93	507232	507232	2021	22.5	7.9	0.82%	0.03%	0.02%
R94	508095	508095	2021	47.3	16.6	1.73%	0.07%	0.04%
R95	508124	508124	2018	36.1	12.6	1.32%	0.06%	0.03%
R96	508070	508070	2018	71.1	24.9	2.60%	0.11%	0.07%

D.3.2 PM₁₀ results for Emergency Scenario

Table 60 PM₁₀ 90.41st percentile daily mean results (µg/m³)

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	34.0	2021	1.92	3.84%	35.9	72%	Insignificant
R1	508156	179589	34.0	2021	1.60	3.20%	35.6	71%	Insignificant
R2	508149	179561	34.0	2021	1.56	3.11%	35.5	71%	Insignificant
R3	508159	179522	34.0	2021	1.35	2.71%	35.3	71%	Insignificant
R4	508162	179486	34.0	2021	1.23	2.47%	35.2	70%	Insignificant
R5	508177	179460	34.0	2021	1.12	2.25%	35.1	70%	Insignificant
R6	508138	179482	34.0	2021	1.23	2.46%	35.2	70%	Insignificant
R7	508100	179481	34.0	2021	1.33	2.67%	35.3	71%	Insignificant
R8	508064	179491	34.0	2021	1.65	3.31%	35.6	71%	Insignificant
R9	508039	179473	34.0	2021	1.68	3.37%	35.7	71%	Insignificant
R10	508034	179414	34.0	2021	1.44	2.88%	35.4	71%	Insignificant
R11	508018	179363	34.0	2021	1.18	2.36%	35.1	70%	Insignificant
R12	508020	179311	34.0	2021	1.08	2.16%	35.0	70%	Insignificant
R13	508092	179352	34.0	2021	1.03	2.07%	35.0	70%	Insignificant
R14	508089	179420	34.0	2021	1.18	2.35%	35.1	70%	Insignificant
R15	508149	179401	34.0	2021	1.00	2.00%	35.0	70%	Insignificant
R16	508190	179416	34.0	2021	0.99	1.98%	35.0	70%	Insignificant
R17	508236	179419	34.0	2021	0.96	1.92%	34.9	70%	Insignificant
R18	508224	179476	34.0	2021	1.13	2.27%	35.1	70%	Insignificant
R19	508202	179525	34.0	2021	1.37	2.74%	35.3	71%	Insignificant
R20	508228	179560	34.0	2021	1.34	2.68%	35.3	71%	Insignificant
R21	508194	179627	34.0	2021	1.75	3.49%	35.7	71%	Insignificant
R22	508266	179594	34.0	2021	1.49	2.99%	35.5	71%	Insignificant
R23	508365	179567	34.0	2021	1.17	2.35%	35.1	70%	Insignificant
R24	508298	179503	34.0	2021	1.16	2.32%	35.1	70%	Insignificant
R25	508295	179464	34.0	2021	1.02	2.04%	35.0	70%	Insignificant
R26	508097	179237	34.0	2021	0.88	1.76%	34.8	70%	Insignificant
R27	508130	179303	34.0	2021	0.81	1.63%	34.8	70%	Insignificant
R28	508196	179342	34.0	2021	0.85	1.71%	34.8	70%	Insignificant
R29	508303	179407	34.0	2021	0.84	1.68%	34.8	70%	Insignificant
R30	508407	179375	34.0	2021	0.82	1.64%	34.8	70%	Insignificant
R31	508438	179423	34.0	2021	0.88	1.77%	34.8	70%	Insignificant
R32	508442	179464	34.0	2021	0.88	1.76%	34.8	70%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R33	508302	179343	34.0	2021	0.78	1.56%	34.7	69%	Insignificant
R34	508188	179197	34.0	2021	0.64	1.28%	34.6	69%	Insignificant
R35	508128	179002	34.0	2021	0.61	1.22%	34.6	69%	Insignificant
R36	508235	179077	34.0	2021	0.52	1.04%	34.5	69%	Insignificant
R37	508252	179297	34.0	2021	0.73	1.46%	34.7	69%	Insignificant
R38	508390	179110	34.0	2021	0.54	1.07%	34.5	69%	Insignificant
R39	508964	179113	34.0	2022	0.49	0.98%	34.5	69%	Insignificant
R40	508586	178796	35.8	2021	0.40	0.79%	36.2	72%	Insignificant
R41	508329	179210	34.0	2021	0.65	1.31%	34.6	69%	Insignificant
R42	508498	178826	35.8	2021	0.40	0.80%	36.2	72%	Insignificant
R43	507561	179800	35.0	2020	2.24	4.48%	37.3	75%	Insignificant
R44	507475	179859	35.0	2019	1.79	3.58%	36.8	74%	Insignificant
R45	507432	180016	32.3	2019	1.63	3.26%	33.9	68%	Insignificant
R46	508085	180491	32.7	2020	2.77	5.55%	35.5	71%	Insignificant
R47	508435	180152	32.7	2020	3.78	7.55%	36.5	73%	Insignificant
R48	508381	179255	34.0	2021	0.63	1.26%	34.6	69%	Insignificant
R49	508471	179199	34.0	2021	0.61	1.21%	34.6	69%	Insignificant
R50	508559	179329	34.0	2021	0.67	1.33%	34.6	69%	Insignificant
R51	508596	179251	34.0	2021	0.61	1.22%	34.6	69%	Insignificant
R52	508552	179168	34.0	2021	0.63	1.25%	34.6	69%	Insignificant
R53	508524	179095	34.0	2021	0.52	1.04%	34.5	69%	Insignificant
R54	508547	179498	34.0	2021	0.80	1.59%	34.8	70%	Insignificant
R55	508431	179294	34.0	2021	0.75	1.50%	34.7	69%	Insignificant
R56	508590	179416	34.0	2021	0.74	1.48%	34.7	69%	Insignificant
R57	508649	179348	34.0	2021	0.66	1.31%	34.6	69%	Insignificant
R58	508672	179473	34.0	2022	0.75	1.51%	34.7	69%	Insignificant
R59	508756	179416	34.0	2022	0.67	1.33%	34.6	69%	Insignificant
R60	508911	179342	34.0	2022	0.60	1.20%	34.6	69%	Insignificant
R61	508929	179457	34.0	2022	0.63	1.25%	34.6	69%	Insignificant
R62	508727	179241	34.0	2021	0.59	1.18%	34.6	69%	Insignificant
R63	508943	179238	34.0	2022	0.54	1.07%	34.5	69%	Insignificant
R64	508803	179321	34.0	2022	0.58	1.16%	34.5	69%	Insignificant
R65	508720	179149	34.0	2021	0.55	1.10%	34.5	69%	Insignificant
R66	508639	179056	34.0	2021	0.56	1.11%	34.5	69%	Insignificant
R67	508786	179050	34.0	2021	0.50	1.00%	34.5	69%	Insignificant
R68	508758	178981	35.8	2021	0.48	0.96%	36.3	73%	Insignificant
R69	508710	178847	35.8	2021	0.43	0.86%	36.2	72%	Insignificant

Receptor	X	Y	Short term PM ₁₀ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R70	509054	178994	36.4	2022	0.44	0.89%	36.9	74%	Insignificant
R71	508547	178932	35.8	2021	0.44	0.89%	36.2	72%	Insignificant
R72	508976	178882	35.8	2022	0.42	0.83%	36.2	72%	Insignificant
R73	508895	178793	35.8	2021	0.44	0.87%	36.2	72%	Insignificant
R74	507592	179687	35.0	2018	2.87	5.75%	37.9	76%	Insignificant
R75	507417	179752	35.0	2020	1.49	2.97%	36.5	73%	Insignificant
R76	507350	179651	35.0	2021	1.36	2.72%	36.4	73%	Insignificant
R77	507459	179616	35.0	2018	1.67	3.34%	36.7	73%	Insignificant
R78	507284	179777	35.0	2020	1.14	2.29%	36.2	72%	Insignificant
R79	507222	179696	35.0	2020	1.01	2.02%	36.0	72%	Insignificant
R80	507135	179553	35.0	2021	0.84	1.68%	35.9	72%	Insignificant
R81	507183	179850	35.0	2019	0.98	1.96%	36.0	72%	Insignificant
R82	507347	179533	35.0	2018	1.26	2.53%	36.3	73%	Insignificant
R83	508590	180658	32.7	2019	1.23	2.46%	33.9	68%	Insignificant
R84	508802	180708	32.7	2019	0.87	1.75%	33.6	67%	Insignificant
R85	509485	180185	33.0	2020	0.64	1.28%	33.6	67%	Insignificant
R86	509286	180317	33.0	2020	0.73	1.47%	33.7	67%	Insignificant
R87	509148	180577	33.0	2020	0.63	1.25%	33.6	67%	Insignificant
R88	507275	179381	35.0	2018	1.18	2.35%	36.2	72%	Insignificant
R89	507256	179220	35.0	2018	1.14	2.28%	36.2	72%	Insignificant
R90	507061	179406	35.0	2021	0.86	1.71%	35.9	72%	Insignificant
R91	507191	179297	35.0	2018	1.00	2.01%	36.0	72%	Insignificant
R92	507076	179216	35.0	2018	0.82	1.64%	35.9	72%	Insignificant
R93	507232	179053	35.0	2018	0.91	1.83%	35.9	72%	Insignificant
R94	508095	179455	34.0	2021	1.26	2.52%	35.2	70%	Insignificant
R95	508124	179457	34.0	2021	1.21	2.43%	35.2	70%	Insignificant
R96	508070	179461	34.0	2021	1.50	3.01%	35.5	71%	Insignificant
AQS: 50µg/m ³ *Results are to 2d.p.									

D.3.3 CO results for Emergency Scenario

Table 61 CO 8-hour rolling mean ($\mu\text{g}/\text{m}^3$)

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	198	2021	5.25	0.05%	402	4%	Insignificant
R1	508156	179589	198	2021	4.61	0.05%	401	4%	Insignificant
R2	508149	179561	198	2021	4.56	0.05%	401	4%	Insignificant
R3	508159	179522	198	2021	4.10	0.04%	401	4%	Insignificant
R4	508162	179486	198	2021	3.51	0.04%	400	4%	Insignificant
R5	508177	179460	198	2021	3.22	0.03%	400	4%	Insignificant
R6	508138	179482	198	2021	3.53	0.04%	400	4%	Insignificant
R7	508100	179481	198	2021	3.97	0.04%	401	4%	Insignificant
R8	508064	179491	198	2021	4.65	0.05%	402	4%	Insignificant
R9	508039	179473	198	2021	4.86	0.05%	402	4%	Insignificant
R10	508034	179414	198	2021	4.35	0.04%	401	4%	Insignificant
R11	508018	179363	198	2021	3.43	0.03%	400	4%	Insignificant
R12	508020	179311	198	2021	3.07	0.03%	400	4%	Insignificant
R13	508092	179352	198	2021	2.89	0.03%	400	4%	Insignificant
R14	508089	179420	198	2021	3.39	0.03%	400	4%	Insignificant
R15	508149	179401	198	2021	2.88	0.03%	400	4%	Insignificant
R16	508190	179416	198	2021	2.88	0.03%	400	4%	Insignificant
R17	508236	179419	198	2021	2.83	0.03%	400	4%	Insignificant
R18	508224	179476	198	2021	3.26	0.03%	400	4%	Insignificant
R19	508202	179525	198	2021	3.89	0.04%	401	4%	Insignificant
R20	508228	179560	198	2021	4.07	0.04%	401	4%	Insignificant
R21	508194	179627	198	2021	5.20	0.05%	402	4%	Insignificant
R22	508266	179594	198	2021	4.37	0.04%	401	4%	Insignificant
R23	508365	179567	198	2021	3.62	0.04%	400	4%	Insignificant
R24	508298	179503	198	2021	3.36	0.03%	400	4%	Insignificant
R25	508295	179464	198	2021	3.08	0.03%	400	4%	Insignificant
R26	508097	179237	198	2021	2.35	0.02%	399	4%	Insignificant
R27	508130	179303	198	2021	2.46	0.02%	399	4%	Insignificant
R28	508196	179342	198	2021	2.46	0.02%	399	4%	Insignificant
R29	508303	179407	198	2021	2.71	0.03%	400	4%	Insignificant
R30	508407	179375	198	2021	2.46	0.02%	399	4%	Insignificant
R31	508438	179423	198	2021	2.60	0.03%	399	4%	Insignificant
R32	508442	179464	198	2021	2.76	0.03%	400	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R33	508302	179343	198	2021	2.38	0.02%	399	4%	Insignificant
R34	508188	179197	198	2021	1.95	0.02%	399	4%	Insignificant
R35	508128	179002	198	2021	1.68	0.02%	399	4%	Insignificant
R36	508235	179077	198	2021	1.64	0.02%	398	4%	Insignificant
R37	508252	179297	198	2021	2.21	0.02%	399	4%	Insignificant
R38	508390	179110	198	2021	1.69	0.02%	399	4%	Insignificant
R39	508964	179113	198	2022	1.44	0.01%	398	4%	Insignificant
R40	508586	178796	207	2021	1.26	0.01%	416	4%	Insignificant
R41	508329	179210	198	2021	1.91	0.02%	399	4%	Insignificant
R42	508498	178826	207	2021	1.28	0.01%	416	4%	Insignificant
R43	507561	179800	193	2018	6.03	0.06%	391	4%	Insignificant
R44	507475	179859	193	2018	4.52	0.05%	390	4%	Insignificant
R45	507432	180016	193	2019	4.31	0.04%	390	4%	Insignificant
R46	508085	180491	198	2022	9.68	0.10%	406	4%	Insignificant
R47	508435	180152	198	2020	14.14	0.14%	410	4%	Insignificant
R48	508381	179255	198	2021	2.05	0.02%	399	4%	Insignificant
R49	508471	179199	198	2021	1.90	0.02%	399	4%	Insignificant
R50	508559	179329	198	2021	2.12	0.02%	399	4%	Insignificant
R51	508596	179251	198	2021	1.93	0.02%	399	4%	Insignificant
R52	508552	179168	198	2021	1.82	0.02%	399	4%	Insignificant
R53	508524	179095	198	2021	1.69	0.02%	399	4%	Insignificant
R54	508547	179498	198	2021	2.56	0.03%	399	4%	Insignificant
R55	508431	179294	198	2021	2.16	0.02%	399	4%	Insignificant
R56	508590	179416	198	2021	2.23	0.02%	399	4%	Insignificant
R57	508649	179348	198	2021	1.98	0.02%	399	4%	Insignificant
R58	508672	179473	198	2022	2.22	0.02%	399	4%	Insignificant
R59	508756	179416	198	2022	2.01	0.02%	399	4%	Insignificant
R60	508911	179342	198	2022	1.78	0.02%	399	4%	Insignificant
R61	508929	179457	198	2022	1.96	0.02%	399	4%	Insignificant
R62	508727	179241	198	2021	1.74	0.02%	399	4%	Insignificant
R63	508943	179238	198	2022	1.61	0.02%	398	4%	Insignificant
R64	508803	179321	198	2022	1.79	0.02%	399	4%	Insignificant
R65	508720	179149	198	2021	1.66	0.02%	399	4%	Insignificant
R66	508639	179056	198	2021	1.61	0.02%	398	4%	Insignificant
R67	508786	179050	198	2021	1.51	0.02%	398	4%	Insignificant
R68	508758	178981	207	2021	1.47	0.01%	416	4%	Insignificant
R69	508710	178847	207	2021	1.33	0.01%	416	4%	Insignificant

Receptor	X	Y	Short term CO background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R70	509054	178994	207	2022	1.29	0.01%	416	4%	Insignificant
R71	508547	178932	207	2021	1.43	0.01%	416	4%	Insignificant
R72	508976	178882	207	2021	1.23	0.01%	416	4%	Insignificant
R73	508895	178793	207	2021	1.23	0.01%	416	4%	Insignificant
R74	507592	179687	193	2018	8.02	0.08%	393	4%	Insignificant
R75	507417	179752	193	2020	3.89	0.04%	389	4%	Insignificant
R76	507350	179651	193	2018	3.40	0.03%	389	4%	Insignificant
R77	507459	179616	193	2018	4.71	0.05%	390	4%	Insignificant
R78	507284	179777	193	2020	2.80	0.03%	388	4%	Insignificant
R79	507222	179696	193	2020	2.52	0.03%	388	4%	Insignificant
R80	507135	179553	193	2021	2.25	0.02%	388	4%	Insignificant
R81	507183	179850	193	2019	2.48	0.02%	388	4%	Insignificant
R82	507347	179533	193	2018	3.57	0.04%	389	4%	Insignificant
R83	508590	180658	198	2019	5.05	0.05%	401	4%	Insignificant
R84	508802	180708	198	2019	3.59	0.04%	400	4%	Insignificant
R85	509485	180185	202	2020	2.33	0.02%	405	4%	Insignificant
R86	509286	180317	202	2020	2.84	0.03%	406	4%	Insignificant
R87	509148	180577	202	2020	2.57	0.03%	406	4%	Insignificant
R88	507275	179381	193	2018	3.13	0.03%	389	4%	Insignificant
R89	507256	179220	193	2018	2.94	0.03%	388	4%	Insignificant
R90	507061	179406	193	2021	2.12	0.02%	388	4%	Insignificant
R91	507191	179297	193	2018	2.70	0.03%	388	4%	Insignificant
R92	507076	179216	193	2018	2.27	0.02%	388	4%	Insignificant
R93	507232	179053	193	2018	2.62	0.03%	388	4%	Insignificant
R94	508095	179455	198	2021	3.64	0.04%	400	4%	Insignificant
R95	508124	179457	198	2021	3.38	0.03%	400	4%	Insignificant
R96	508070	179461	198	2021	4.24	0.04%	401	4%	Insignificant
AQS: 10,000µg/m ³ *Results are to 2d.p.									

D.3.4 NH₃ results for Emergency Scenario

Table 62 NH₃ hourly mean results (µg/m³)

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R0	508162	179620	0.77	2022	4.42	0.01%	6.0	0.24%	Insignificant
R1	508156	179589	0.77	2018	2.84	<0.01%	4.4	0.18%	Insignificant
R2	508149	179561	0.77	2022	5.50	0.01%	7.0	0.28%	Insignificant
R3	508159	179522	0.77	2022	5.30	0.01%	6.8	0.27%	Insignificant
R4	508162	179486	0.77	2022	2.49	<0.01%	4.0	0.16%	Insignificant
R5	508177	179460	0.77	2022	1.95	<0.01%	3.5	0.14%	Insignificant
R6	508138	179482	0.77	2018	2.57	<0.01%	4.1	0.16%	Insignificant
R7	508100	179481	0.77	2022	5.19	0.01%	6.7	0.27%	Insignificant
R8	508064	179491	0.77	2021	5.47	0.01%	7.0	0.28%	Insignificant
R9	508039	179473	0.77	2018	4.56	0.01%	6.1	0.24%	Insignificant
R10	508034	179414	0.77	2018	4.46	0.01%	6.0	0.24%	Insignificant
R11	508018	179363	0.77	2021	2.19	<0.01%	3.7	0.15%	Insignificant
R12	508020	179311	0.77	2019	1.96	<0.01%	3.5	0.14%	Insignificant
R13	508092	179352	0.77	2021	1.80	<0.01%	3.3	0.13%	Insignificant
R14	508089	179420	0.77	2021	2.87	<0.01%	4.4	0.18%	Insignificant
R15	508149	179401	0.77	2018	1.67	<0.01%	3.2	0.13%	Insignificant
R16	508190	179416	0.77	2022	1.65	<0.01%	3.2	0.13%	Insignificant
R17	508236	179419	0.77	2021	1.68	<0.01%	3.2	0.13%	Insignificant
R18	508224	179476	0.77	2022	1.71	<0.01%	3.3	0.13%	Insignificant
R19	508202	179525	0.77	2022	3.90	<0.01%	5.4	0.22%	Insignificant
R20	508228	179560	0.77	2022	2.24	<0.01%	3.8	0.15%	Insignificant
R21	508194	179627	0.77	2022	2.78	<0.01%	4.3	0.17%	Insignificant
R22	508266	179594	0.77	2018	2.10	<0.01%	3.6	0.15%	Insignificant
R23	508365	179567	0.77	2022	1.56	<0.01%	3.1	0.12%	Insignificant
R24	508298	179503	0.77	2021	1.66	<0.01%	3.2	0.13%	Insignificant
R25	508295	179464	0.77	2021	1.77	<0.01%	3.3	0.13%	Insignificant
R26	508097	179237	0.77	2021	1.70	<0.01%	3.2	0.13%	Insignificant
R27	508130	179303	0.77	2018	1.83	<0.01%	3.4	0.13%	Insignificant
R28	508196	179342	0.77	2021	1.39	<0.01%	2.9	0.12%	Insignificant
R29	508303	179407	0.77	2021	1.82	<0.01%	3.4	0.13%	Insignificant
R30	508407	179375	0.77	2021	1.56	<0.01%	3.1	0.12%	Insignificant
R31	508438	179423	0.77	2019	1.33	<0.01%	2.9	0.11%	Insignificant
R32	508442	179464	0.77	2021	1.32	<0.01%	2.9	0.11%	Insignificant
R33	508302	179343	0.77	2021	1.78	<0.01%	3.3	0.13%	Insignificant

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R34	508188	179197	0.77	2021	1.42	<0.01%	3.0	0.12%	Insignificant
R35	508128	179002	0.77	2021	1.52	<0.01%	3.1	0.12%	Insignificant
R36	508235	179077	0.77	2021	1.28	<0.01%	2.8	0.11%	Insignificant
R37	508252	179297	0.77	2021	1.52	<0.01%	3.1	0.12%	Insignificant
R38	508390	179110	0.77	2021	1.52	<0.01%	3.1	0.12%	Insignificant
R39	508964	179113	0.77	2018	1.09	<0.01%	2.6	0.11%	Insignificant
R40	508586	178796	0.77	2021	1.15	<0.01%	2.7	0.11%	Insignificant
R41	508329	179210	0.77	2021	1.61	<0.01%	3.1	0.13%	Insignificant
R42	508498	178826	0.77	2021	1.15	<0.01%	2.7	0.11%	Insignificant
R43	507561	179800	0.77	2019	1.99	<0.01%	3.5	0.14%	Insignificant
R44	507475	179859	0.77	2022	1.66	<0.01%	3.2	0.13%	Insignificant
R45	507432	180016	0.77	2022	1.63	<0.01%	3.2	0.13%	Insignificant
R46	508085	180491	0.77	2021	3.24	<0.01%	4.8	0.19%	Insignificant
R47	508435	180152	0.77	2022	2.02	<0.01%	3.6	0.14%	Insignificant
R48	508381	179255	0.77	2021	1.72	<0.01%	3.3	0.13%	Insignificant
R49	508471	179199	0.77	2021	1.54	<0.01%	3.1	0.12%	Insignificant
R50	508559	179329	0.77	2018	1.16	<0.01%	2.7	0.11%	Insignificant
R51	508596	179251	0.77	2022	1.09	<0.01%	2.6	0.11%	Insignificant
R52	508552	179168	0.77	2022	1.33	<0.01%	2.9	0.11%	Insignificant
R53	508524	179095	0.77	2021	1.42	<0.01%	3.0	0.12%	Insignificant
R54	508547	179498	0.77	2021	1.61	<0.01%	3.1	0.13%	Insignificant
R55	508431	179294	0.77	2021	1.60	<0.01%	3.1	0.13%	Insignificant
R56	508590	179416	0.77	2021	1.46	<0.01%	3.0	0.12%	Insignificant
R57	508649	179348	0.77	2021	1.34	<0.01%	2.9	0.12%	Insignificant
R58	508672	179473	0.77	2021	1.53	<0.01%	3.1	0.12%	Insignificant
R59	508756	179416	0.77	2021	1.41	<0.01%	2.9	0.12%	Insignificant
R60	508911	179342	0.77	2022	1.23	<0.01%	2.8	0.11%	Insignificant
R61	508929	179457	0.77	2022	1.23	<0.01%	2.8	0.11%	Insignificant
R62	508727	179241	0.77	2018	1.24	<0.01%	2.8	0.11%	Insignificant
R63	508943	179238	0.77	2021	1.14	<0.01%	2.7	0.11%	Insignificant
R64	508803	179321	0.77	2021	1.32	<0.01%	2.9	0.11%	Insignificant
R65	508720	179149	0.77	2018	1.07	<0.01%	2.6	0.10%	Insignificant
R66	508639	179056	0.77	2022	1.20	<0.01%	2.7	0.11%	Insignificant
R67	508786	179050	0.77	2018	0.96	<0.01%	2.5	0.10%	Insignificant
R68	508758	178981	0.77	2022	0.99	<0.01%	2.5	0.10%	Insignificant
R69	508710	178847	0.77	2022	1.08	<0.01%	2.6	0.10%	Insignificant
R70	509054	178994	0.77	2019	1.04	<0.01%	2.6	0.10%	Insignificant

Receptor	X	Y	Short term NH ₃ background	Maximum Year	Maximum modelled PC*	% of standard	PEC	% of standard	Significance
R71	508547	178932	0.77	2021	1.29	<0.01%	2.8	0.11%	Insignificant
R72	508976	178882	0.77	2018	0.86	<0.01%	2.4	0.10%	Insignificant
R73	508895	178793	0.77	2019	0.86	<0.01%	2.4	0.10%	Insignificant
R74	507592	179687	0.77	2020	4.93	0.01%	6.5	0.26%	Insignificant
R75	507417	179752	0.77	2019	1.44	<0.01%	3.0	0.12%	Insignificant
R76	507350	179651	0.77	2018	1.58	<0.01%	3.1	0.12%	Insignificant
R77	507459	179616	0.77	2018	1.58	<0.01%	3.1	0.12%	Insignificant
R78	507284	179777	0.77	2022	1.34	<0.01%	2.9	0.12%	Insignificant
R79	507222	179696	0.77	2022	1.58	<0.01%	3.1	0.12%	Insignificant
R80	507135	179553	0.77	2022	1.44	<0.01%	3.0	0.12%	Insignificant
R81	507183	179850	0.77	2019	1.66	<0.01%	3.2	0.13%	Insignificant
R82	507347	179533	0.77	2018	1.57	<0.01%	3.1	0.12%	Insignificant
R83	508590	180658	0.77	2022	1.57	<0.01%	3.1	0.12%	Insignificant
R84	508802	180708	0.77	2021	1.30	<0.01%	2.8	0.11%	Insignificant
R85	509485	180185	0.77	2020	0.99	<0.01%	2.5	0.10%	Insignificant
R86	509286	180317	0.77	2020	1.12	<0.01%	2.7	0.11%	Insignificant
R87	509148	180577	0.77	2021	1.37	<0.01%	2.9	0.12%	Insignificant
R88	507275	179381	0.77	2018	1.55	<0.01%	3.1	0.12%	Insignificant
R89	507256	179220	0.77	2021	1.54	<0.01%	3.1	0.12%	Insignificant
R90	507061	179406	0.77	2018	1.23	<0.01%	2.8	0.11%	Insignificant
R91	507191	179297	0.77	2018	1.41	<0.01%	3.0	0.12%	Insignificant
R92	507076	179216	0.77	2018	1.27	<0.01%	2.8	0.11%	Insignificant
R93	507232	179053	0.77	2021	1.41	<0.01%	3.0	0.12%	Insignificant
R94	508095	179455	0.77	2021	2.98	<0.01%	4.5	0.18%	Insignificant
R95	508124	179457	0.77	2018	2.27	<0.01%	3.8	0.15%	Insignificant
R96	508070	179461	0.77	2018	4.47	0.01%	6.0	0.24%	Insignificant

AQS: 2500µg/m³

*Results are to 2d.p.

D.3.5 Ecological results for Emergency Scenario

Table 63 NO_x daily mean results (µg/m³)

Receptor	X	Y	Short term NO _x background	Maximum Year	Maximum modelled PC	% of standard	PEC	% of standard	Significance
ER01	503052	175537	102.7	2020	0.70	0.94%	103.43	138%	Insignificant ¹
ER02	504576	174211	68.3	2021	0.80	1.07%	69.06	92%	Insignificant ¹
ER03	505304	174124	111.2	2021	0.96	1.28%	112.19	150%	Insignificant ¹
ER04	500573	175085	43.5	2021	0.41	0.55%	43.87	58%	Insignificant ¹
ER05	501398	174145	42.1	2020	0.49	0.66%	42.57	57%	Insignificant ¹
ER06	511637	170978	49.6	2021	0.44	0.58%	50.03	67%	Insignificant ¹
ER07	511968	170433	49.6	2021	0.40	0.53%	49.99	67%	Insignificant ¹
ER08	507957	179720	81.8	2021	39.20	52.27%	120.97	161%	Insignificant ¹
ER09	507553	179346	81.8	2020	9.86	13.15%	91.63	122%	Insignificant ¹
ER10	508104	179827	82.9	2020	58.20	77.60%	141.11	188%	Insignificant ¹
ER11	508088	179855	82.9	2020	72.03	96.04%	154.94	207%	Insignificant ¹
ER12	507609	179825	81.8	2021	21.64	28.85%	103.41	138%	Insignificant ¹
ER13	507617	179862	81.8	2021	22.68	30.24%	104.45	139%	Insignificant ¹
ER14	508099	180033	67.5	2018	140.48	187.30%	207.96	277%	Insignificant ^{1,2}
ER15	508737	180243	67.5	2020	9.12	12.16%	76.60	102%	Insignificant ¹
ER16	508875	180060	67.5	2019	7.76	10.35%	75.24	100%	Insignificant ¹
ER17	508045	178454	94.1	2019	3.51	4.68%	97.59	130%	Insignificant ¹
ER18	509422	178303	95.2	2020	2.92	3.90%	98.12	131%	Insignificant ¹
ER19	509435	178074	95.2	2020	2.38	3.18%	97.59	130%	Insignificant ¹
ER20	509498	178265	95.2	2020	2.83	3.77%	98.03	131%	Insignificant ¹
ER21	507244	180526	65.9	2020	6.19	8.25%	72.12	96%	Insignificant ¹

Critical level: 75µg/m³

¹Whilst the PEC compared to the air quality standard is above the critical level, the exceedance is due to a high background NO_x concentration, which is already over the critical level and the process contribution can be considered insignificant.

²Whilst the impacts on the NO_x daily mean from the back-up generators during the emergency scenario are potentially significant, it should be noted that the chances of this scenario occurring are considered to be unlikely, based on the reliability of the electrical distribution network and the inbuilt design resilience.

Table 64 Nutrient nitrogen deposition results

Ecological receptor ID	Critical load min	Background Nitrogen deposition	Annual mean NO ₂ PC (µg/m ³)	N Dry deposition (kg N/ha/yr)	NH ₃ Dry deposition (kg N/ha/yr)	Proportion of PC to CL (%) Min	Total N dry deposition + Background (kg N/ha/yr)	Proportion of PEC to CL (%) Min
ER01	10	14.0	<0.01	<0.01	<0.01	<0.01	14.02	140
ER02	10	13.9	<0.01	<0.01	<0.01	<0.01	13.88	139
ER03	10	14.0	<0.01	<0.01	<0.01	<0.01	14.04	140
ER04	10	14.4	<0.01	<0.01	<0.01	<0.01	14.43	144
ER05	10	13.5	<0.01	<0.01	<0.01	<0.01	13.47	135
ER06	10	13.3	<0.01	<0.01	<0.01	<0.01	13.28	133
ER07	10	13.3	<0.01	<0.01	<0.01	<0.01	13.28	133
ER08	10	15.5	<0.01	<0.01	<0.01	<0.01	15.48	155
ER09	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER10	10	15.5	<0.01	<0.01	<0.01	<0.01	15.45	155
ER11	10	27.4	<0.01	<0.01	<0.01	<0.01	27.44	274
ER12	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER13	10	27.4	<0.01	<0.01	<0.01	<0.01	27.42	274
ER14	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER15	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER16	10	27.3	<0.01	<0.01	<0.01	<0.01	27.28	273
ER17	10	27.6	<0.01	<0.01	<0.01	<0.01	27.60	276
ER18	10	27.5	<0.01	<0.01	<0.01	<0.01	27.53	275
ER19	10	15.5	<0.01	<0.01	<0.01	<0.01	15.47	155
ER20	10	15.5	<0.01	<0.01	<0.01	<0.01	15.47	155
ER21	10	27.2	<0.01	<0.01	<0.01	<0.01	27.16	272

Table 65 Acid deposition results

Ecological receptor ID	Critical Load min Nitrogen (kg N/ha/yr)	Critical Load max Nitrogen (kg N/ha/yr)	Background Nitrogen deposition (kg N/ha/yr)	NO ₂ dry deposition (keq N/ha/yr)	NH ₃ dry deposition (keq N/ha/yr)	Acid dry deposition (keq N/ha/yr)	Exceedance
ER01	0.856	4.856	1.15	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER02	0.856	4.856	1.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER03	0.856	4.856	1.16	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER04	0.856	4.856	1.08	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER05	0.856	4.856	1.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER06	0.856	4.856	1.05	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER07	0.856	4.856	1.05	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER08	0.856	4.856	1.3	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER09	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER10	0.856	4.856	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER11	0.142	1.723	2.18	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER12	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER13	0.142	1.724	2.2	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER14	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER15	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER16	0.142	1.709	2.14	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER17	0.142	1.721	2.22	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER18	0.357	2.055	2.19	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER19	1.071	5.071	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER20	1.071	5.071	1.28	<0.01	<0.01	<0.01	PC < CL, No exceedance
ER21	0.357	1.688	2.15	<0.01	<0.01	<0.01	PC < CL, No exceedance

Table 66 Annual NH₃ results for ecological receptors

Ecological receptor ID	Critical Load NH ₃ (µg/m ³)	Background NH ₃ deposition (µg/m ³)	PC NH ₃ (µg/m ³)	% of Critical level	Exceedance
ER01	3	1.33	<0.01	<0.01	PC < CL, No exceedance
ER02	3	1.36	<0.01	<0.01	PC < CL, No exceedance
ER03	3	1.37	<0.01	<0.01	PC < CL, No exceedance
ER04	3	1.36	<0.01	<0.01	PC < CL, No exceedance
ER05	3	1.30	<0.01	<0.01	PC < CL, No exceedance
ER06	3	1.48	<0.01	<0.01	PC < CL, No exceedance
ER07	3	1.48	<0.01	<0.01	PC < CL, No exceedance
ER08	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER09	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER10	3	1.57	<0.01	<0.01	PC < CL, No exceedance
ER11	3	1.57	<0.01	<0.01	PC < CL, No exceedance
ER12	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER13	3	1.55	<0.01	<0.01	PC < CL, No exceedance
ER14	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER15	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER16	3	1.59	<0.01	<0.01	PC < CL, No exceedance
ER17	3	1.52	<0.01	<0.01	PC < CL, No exceedance
ER18	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER19	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER20	3	1.56	<0.01	<0.01	PC < CL, No exceedance
ER21	3	1.57	<0.01	<0.01	PC < CL, No exceedance

Appendix E Contour Plots

E.1 Emergency Scenario Contour Plots

Figure 9 Contour plot of NO_x daily concentrations in Emergency Scenario, using 2021 meteorological data (worst case year)

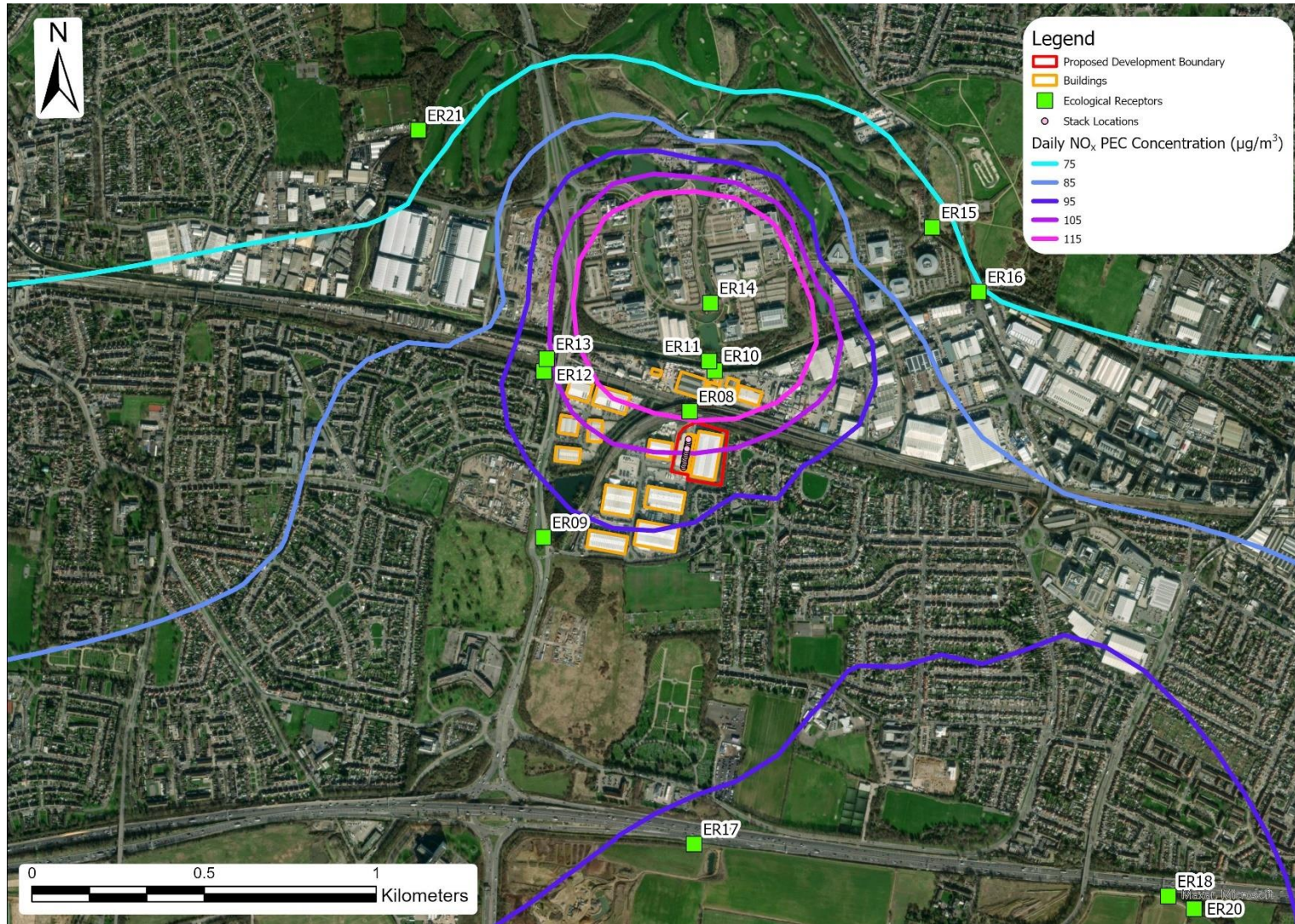


Figure 10 Contour plot of NO₂ hourly concentrations in Emergency Scenario, using 2021 meteorological data (worst case year)

