

Contents

Introduction.....	8-3
Background	8-3
Scope of Work	8-3
Consultations / Consultees	8-4
Contributors / Author(s)	8-4
Limitations / Difficulties Encountered	8-4
Regulatory Background	8-4
Legislation	8-5
Air Quality Standards	8-5
Nuisance (Dust Deposition).....	8-6
Planning Policy and Development Control	8-7
National Spatial Strategy (NSS) / National Planning Framework – Project Ireland 2040	8-7
Local Planning Policy: Roscommon County Development Plan 2022 – 2028.....	8-7
Assessment Guidance.....	8-7
Receiving Environment.....	8-8
Study Area.....	8-8
Sources of Information.....	8-8
Desk Top Studies	8-8
Baseline Dust Monitoring	8-8
Background Air Quality	8-9
Local Air Quality Monitoring	8-9
Local Mapped Background Concentrations.....	8-10
Dust Deposition Monitoring	8-11
Meteorology: Dispersion of Emissions	8-14
Local Wind Speed and Direction Data	8-14
Rainfall Data	8-15
Sensitive Receptors.....	8-15
Ecological Receptors	8-15
Human Receptors	8-16
Impact Assessment Methodology	17
Road Traffic Emissions Assessment.....	8-17
Impacts on Human Receptors.....	8-17
Air Quality Impacts on Ecological Sites	8-18
Dust Impact Assessment	8-18
Deposited Dust.....	8-19
Suspended Dust (PM ₁₀)	8-20

RECEIVED 05/12/2025

Assessment of Impacts - Dust	8-20
Current & Permitted Site Operations.....	8-20
Development Permitted but not commenced	8-21
Proposed Site Operations.....	8-21
Screening Assessment.....	8-21
Deposited Dust Assessment.....	8-21
Residual Source Emission (RSE) Magnitude	8-22
Summary of Pathway Effectiveness.....	8-25
Suspended Dust Assessment.....	8-26
Assessment of Impacts – Traffic Emissions	8-26
Mitigation and Management	8-26
Unplanned Events (i.e., Accidents)	8-26
Cumulative / Synergistic Impacts	8-27
Interaction with Other Impacts	8-27
Mitigation Measures	8-28
Monitoring	8-29
Residual Impact Assessment	8-30
Conclusion	8-30
Appendices	
Appendix 8-A: Dust Monitoring Results: 2022 - 2025.....	

Tables

Table 8-1: Applied Air Quality Assessment Levels (AQALs).....	8-5
Table 8-2: Relevant Public Exposure	8-6
Table 8-3: Monitoring data at Roscommon Town (2023)	8-10
Table 8-4: Monitoring data at Birr (2023).....	8-10
Table 8-5: Monitoring data at Carrick-on-Shannon (2023).....	8-10
Table 8-6: EPA Background Modelled Data (2023)	8-11
Table 8-7: Dust Deposition Monitoring Results.....	8-13
Table 8-8: Sensitive Receptors within 1 km.....	8-16
Table 8-9: IAQM Determination of Magnitude of Effect	8-19
Table 8-10: Receptors Identified for Assessment of Deposited Dust	8-22
Table 8-11: Summary of Residual Source Emission (RSE) Magnitudes.....	8-23
Table 8-12: Determination of Pathway Effectiveness	8-25
Table 8-13: Summary of Dust Impact Risk and Magnitude of Effects	8-25
Table 8-14: Summary of Designed in Mitigation Measures.....	8-28
Table 8- 15: Summary of Recommended Mitigation Measures	8-29

Figures

Figure 8-1 Site Setting & Receptor Locations
Figure 8-2 Site Layout & Dust Monitoring Locations

Introduction

Background

- 8.1 This Chapter of the Environmental Impact Assessment Report (EIAR), prepared by SLR Consulting Ireland, addresses the potential effects of the proposed continued use of Cam Quarry on air quality. The existing quarry is located at Curry and Cloonacaltry townlands, Brideswell, Co. Roscommon.
- 8.2 The proposed development will have the potential to generate fugitive dust emissions and particulates (PM₁₀), which may result in impacts on local air quality. Combustion emissions (primary PM₁₀, and oxides of nitrogen) from vehicle emissions associated with the transportation of materials also have the potential to impact on local air pollution.
- 8.3 Full details on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIAR.
- 8.4 The main elements of the the proposed development with respect to air quality are:
- Permission for continued use of the existing quarry development currently permitted by P. Ref. 04/1479 and ABP PL20.215417 for a further period of 25 years, within an application area of c. 66.3 hectares, with an extraction area of c. 17.1 hectares and permanent overburden storage area of c. 3.9 hectares;
 - Permission for continued use of the permitted facilities consisting of: ESB substation (26m²), portacabin office facilities including canteen and washroom facilities (91m²), bunded fuel storage, vehicle circulation/access including wheelwash and weighbridge, settlement tanks/hydrocarbon interceptors for treatment of water, construction of overburden and screening mounds, all other associated site works and ancillary activities;
 - Permission for continued extraction of limestone using conventional blasting techniques and processing of rock using crushing and screening plant;
 - Upgrade of the existing WWTS and percolation area to new Secondary WWTS and constructed soil polishing filter area;
 - Provision of the permitted concrete block making facility and concrete batching plant, truck washdown facility with wash water recycled via a closed settlement tank system, the storage of aggregates; and workshop including storage room, canteen and washroom facilities (485m²); and
 - Restoration of the overall application site to a natural habitat including a permanent waterbody.

Scope of Work

- 8.5 This chapter of the EIA Report assess the effects of the proposed development on air quality, comprising fugitive emissions of dust and emissions from vehicles on the public road network.
- 8.6 This assessment has been informed by the Environmental Protection Agency's (EPAs) 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (the 'EIAR guidance').
- 8.7 With respect to the potential for air quality impacts, the key objective at the application site is to manage activities to ensure that emissions to air are prevented where possible, and the effects of any residual releases minimised.

Consultations / Consultees

- 8.8 An online pre-planning consultation meeting was held between officials of Roscommon County Council and the Applicant. In addition, a pre-planning consultation document was issued to statutory consultees (see Chapter 1 for a list of consultees and responses received). There were no consultee responses with regard to the scope or methodology of the assessment of air quality impacts.
- 8.9 Feedback of most relevance to the assessment of air quality was received from the HSE Environmental Health Services.
- 8.10 The HSE comments were made in relation to environmental health protection and it noted that *“In considering the measures to be employed by the developer to minimise the potential impacts of the proposed development to human health, reference was made by the EHS to the EPA’s ‘Environmental Management Guidelines on the Environmental Management in the Extractive Industry (Non-Scheduled Minerals) 2006’*
- It is recommended that an Environmental Management System (EMS) is put in place, with training of all site staff. There should be on-going review of the effectiveness of the EMS. The EMS should be devised in accordance with international standards such as ISO 14001 2015 and EU EMAS (1993)”.*
- 8.11 Following this, and a review of published development plans / site surveys, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of air quality for the purposes of this assessment. There was however significant consultation with other specialist contributors to this EIAR.

Contributors / Author(s)

- 8.12 The air quality impact assessment presented in this Chapter was prepared by SLR Consulting Ireland. The lead consultant for the study was Rachel McHale (Principal Air Quality Consultant) with support from Matthew Mitchell (Principal Air Quality Consultant). Both consultants are Members of the Institute of Air Quality Management (MIAQM).

Limitations / Difficulties Encountered

- 8.13 This assessment is compiled based on published regional and local data, guidance documents, and site-specific field surveys.
- 8.14 The dust assessment is primarily a tool to identify the proportionate level of mitigation required.
- 8.15 Resultant effects ultimately depend on the effective application of the recommended mitigation. Therefore, there can be uncertainty on the representativity of the assessment procedure and associated post-mitigated outcomes if appropriate mitigation is not secured.
- 8.16 It is assumed that mitigation measures set out within the assessment would be secured should planning consent be granted.

Regulatory Background

- 8.17 The following sections describe the main legislative policy requirements in respect of air quality associated with the proposed development.

Legislation

Air Quality Standards

- 8.18 The Ambient Air Quality Standards Regulations (AAQSR) 2022¹ in Ireland set out the framework for monitoring and managing air quality in accordance with European Ambient Air Quality Directive (2008/50/EC) and its daughter directives, which aim to protect human health and the environment.
- 8.19 The AAQSR sets out a framework for reducing hazards to health from air pollution and ensuring that international commitments are met in Ireland.
- 8.20 The AAQSR sets standards and objectives for ten priority pollutants. Standards establish concentrations of pollutants in the atmosphere which can broadly be taken to provide a certain level of environmental quality. Objectives are policy targets, often expressed as maximum concentrations, not to be exceeded (either without exception, or with a limited number of exceedances within a specified timescale).
- 8.21 Monitoring stations across the country assess air quality, ensuring compliance with EU directives and providing public access to data.
- 8.22 The relevant standards applied in this assessment for the protection of human health are provided in **Table 8-1**, these are collectively termed Air Quality Assessment Levels (AQALs) throughout this report.

Table 8-1: Applied Air Quality Assessment Levels (AQALs)

Pollutant	Limit, Target Value or Objective			
	Averaging Period	Value	Maximum Number of Allowed Occurrences	Source
Nitrogen Dioxide (NO ₂)	1-hour	200 µg/m ³	18	AAQSR
	Annual	40 µg/m ³	0	AAQSR
Particulate matter with aerodynamic diameter of less than 10 µm (PM ₁₀)	24-hour	50 µg/m ³	35	AAQSR
	Annual	40 µg/m ³	0	AAQSR
Particulate matter with aerodynamic diameter of less than 2.5 µm (PM ₁₀)	Annual	20 µg/m ³	-	AAQSR

- 8.23 The AQALs for human health should be assessed at locations where members of the public are likely to be regularly present and are likely to be exposed for a period appropriate to the averaging period of the AQAL. Thus, short-term standards, such as the 1-hour mean standard, should only apply to footpaths and other areas which may be regularly frequented by the public. Longer term standards, such as annual means, should apply at houses or other locations which the public can be expected to occupy on a continuous basis (examples are presented in **Table 8-2**).

¹ <https://www.irishstatutebook.ie/eli/2022/si/739/made/en/print>

Table 8-2: Relevant Public Exposure

Averaging Period	Relevant Locations	Standards should apply at:	Standards don't apply at:
Annual mean	Where individuals are exposed for a cumulative period of six months in a year	Building facades of residential properties, schools, hospitals etc.	Facades of offices Hotels Gardens of residences Kerbside sites
24-hour mean	Where individuals may be exposed for eight hours or more in a day	As above together with hotels and gardens of residential properties	Kerbside sites where public exposure is expected to be short term
1-hour mean	Where individuals might reasonably be expected to spend one hour or longer	As above together with kerbside sites of regular access, car parks, bus stations etc.	Kerbside sites where public would not be expected to have regular access
15-minute mean	Where individuals might reasonably be expected to spend 15-minutes or longer	All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer.	-

8.24 Regarding ecological receptors sites of nature conservation importance at a European, national and local level are provided environmental protection with respect to air quality. EPA guidance² on consideration of designated ecological sites defers to methodology outlined in the UK publication "AQTAG06 – Technical Guidance on Detailed Modelling Approach For An Appropriate Assessment For Emissions To Air". Standards for the protection of ecological receptors are known as Critical Levels (Cle) for airborne concentrations and Critical Loads (Clo) for deposition to land from air.

Nuisance (Dust Deposition)

- 8.25 There are currently no Irish, European Union (EU) or World Health Organisation (WHO) statutory standards or limits appropriate for the assessment of deposited dust and its propensity to generate a nuisance.
- 8.26 When the rate of accumulation of the coarser fraction of dust (referred to as deposited dust) is sufficiently rapid to cause fouling or discolouration, then it is generally considered to introduce a nuisance. The point at which an individual perceives dust deposition as a nuisance is highly subjective.
- 8.27 A range of monitoring techniques exists for dust deposition rates and the assessment of the associated impact (i.e., Bergerhoff and Frisbee gauges).
- 8.28 In lieu of statutory limits, guidelines do exist as industry standard criteria levels for the gravimetric assessment of dust deposition from the extractive industry in Ireland as set out in the DoEHLG (2004) planning guidelines for the extractive industry, the ICF Guidelines (2005) and EPA (2006) Environmental Management Guidelines. Each of these Guidelines recommend the use of the Bergerhoff method for measuring dust deposition. In line with this approach, the guidelines recommend the dust deposition limit value of 350 mg/m²/day (total dust deposition averaged over a 30-day period), measured at site boundaries.

² Environmental Protection Agency Office of Environmental Enforcement (OEE) (2019) Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)

Planning Policy and Development Control

National Spatial Strategy (NSS) / National Planning Framework – Project Ireland 2040

8.29 The National Planning Framework 2040 (published in February 2018) is a national planning framework for Ireland. The framework provides the policies for all regional and local plans.

8.30 Air Quality is referenced in National Policy Objective 64 where it is stated:

“Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions”

8.31 The air quality objectives assessed according to industry accepted methodology for EIA are identified in **Table 8-1**.

Local Planning Policy: Roscommon County Development Plan 2022 – 2028

8.32 The current Roscommon County Development Plan (CDP) sets out their overarching planning principles in relation to management of air pollution:

“Proposals for development will be assessed in terms of potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where proposed developments would be likely to have a significant adverse effect on the amenities of the area through pollution by noise, fumes, odours, dust, grit or vibration, or cause pollution of air, water and/or soil, mitigation measures should be included in order to eliminate adverse environmental impacts or reduce them to an acceptable operating level.”

8.33 The CDP contains the following policy objectives in relation to air quality:

- CAEE 8.2 “Support the National Climate Change Strategy by actively seeking to implement the policy objectives throughout this Plan which contribute to positive climate actions, including those related to renewable energy, sustainable transport, air quality, flooding and the promotion of urban and rural green initiatives”.
- ED 6.31 “Ensure that development proposals in the vicinity of walking routes and cycleways, including those identified in Table 6.1, do not hinder the use and general amenity value of the routes”.

Assessment Guidance

8.34 The air quality assessment has been carried out with reference to the principles contained within the following guidance documents:

- Air Quality Assessment of Proposed National Roads – Standard (Transport Infrastructure Ireland TII Publications);
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG, 2010);
- Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Environmental Assessment Techniques (UK Highway Agency, 2019);
- Environmental Code 2nd Edition (Irish Concrete Federation, 2005);
- Environmental Management in the Extractive Industry (Non-Scheduled Minerals). (EPA, 2006);

- Guidelines for Assessment of Ecological Impacts of National Road Schemes (Transport Infrastructure Ireland, 2009);
- Guidelines for the Treatment of Air Quality during the Planning and Construction of National Road Schemes (NRA, 2011);
- Guidance on the Assessment of Mineral Dust Impacts for Planning (IAQM, 2016); and
- Quarries & Ancillary Activities – Guidelines for Planning Authorities (DoEHLG, 2004).

Receiving Environment

Study Area

- 8.35 The lands surrounding and within the application site predominantly comprise improved agricultural fields interspersed with unimproved pasture, scrub and boulder strewn fields similar to the application site.
- 8.36 There are isolated private residential properties and agriculture farms located throughout the surrounding rural landscape, predominantly along the local road network.
- 8.37 The R363 Regional Road network bounds the application site to the north, from which access to the site is gained via the existing permitted access point.
- 8.38 The application site is not subject to any statutory or non-statutory nature conservation designations. The closest Natura site is Ballynamona Bog and Corkip Lough Special Area of Conservation (SAC) [002339], c. 2km southeast of the site.
- 8.39 There are few residences in the immediate vicinity of the site, as presented in **Figure 8-1**. There are c. 8 residences within a 500m radius and c. 44 within a 1km radius. Most residences comprise isolated farm dwellings and owner-occupied residences. There are no large residential settlements close to the site.

Sources of Information

Desk Top Studies

- 8.40 A desk study was carried out to examine all relevant information relating to air quality conditions around the application site. Met Eireann, the National Meteorological Service, was consulted in relation to the climate / weather data in respect of the study area ([Ballinsloe synoptic weather station 2004–2024 averages \(met.ie\)](http://www.met.ie)). The EPA website was examined to note information on baseline air monitoring data around the application site (<http://www.epa.ie/air/quality/data/>).
- 8.41 Information published on its website by the National Parks and Wildlife Service (NPWS) (<http://webgis.npws.ie/npwsvviewer/>), (part of the Department of the Environment, Community and Local Government, DoECLG), in respect of designated ecological sites, protected habitats and species was also reviewed, together with Ordnance Survey maps and aerial photography (<http://map.geohive.ie/mapviewer.html>).

Baseline Dust Monitoring

- 8.42 In accordance with Condition 13 of the existing permitted development (P. Ref 04/1479 and ABP PL20.215417), monitoring of fugitive dust emissions is undertaken on site as part of the existing operations. Condition 13 infers the use of the industry standard criteria for dust deposition rate which states:

“Total dust emissions arising from the on-site operations shall not exceed 350 milligrams per metre squared per day averaged over a continuous period of 30 days when measured as deposition of insoluble and soluble particulate matter at any position along the boundary of the facility. An adequate hose capacity shall be maintained in the quarry area to dampen down stockpiles, waste piles, and equipment during periods of dry windy weather to prevent the emission of fugitive dust.”

Reason: *In the interest of protecting the amenities of the area.*

8.43 Monitoring of dust deposition is undertaken by an independent third-party at four monitoring points within the planning application boundary, as shown in **Figure 8-2** and summarised below:

- D1 – located at the north-eastern site boundary;
- D2 – located adjacent (to the east of) the overburden storage area;
- D3 –located at the western site boundary; and
- D4 –located at the north-western site boundary.

8.44 The monitoring method utilised is the ‘Bergerhoff method’ referred to in the ‘TA Luft Air Quality Standard’. The ‘Bergerhoff’ dust deposition gauge used in the survey comprises a plastic collection bottle with protective basket, mounted on a post and set at 1500 mm above ground level. The deposition of airborne particulate material into the collection bottle takes place over a pre-determined measurement period (usually one month) by exposing it to the environment. The total dust collected in the bottle is expressed as deposition of total particulate matter (mg/m²/day) arising from human activity in the area surrounding the application site.

8.45 The dust deposition monitoring has been undertaken on a continuous basis since the commencement of permitted operations; dust results therefore represent the routine operations associated with site preparation, progressive restoration, extraction, handling, processing and haulage.

Background Air Quality

8.46 A desk study has been carried out to examine all relevant information relating to air quality conditions around the application site.

8.47 The EPA website was examined to note information on baseline air monitoring data around the application site. The EPA co-ordinates and manages a nationwide network of over 110 monitoring stations which measures the levels of air pollutants and delivers this information to the public as part of the National Ambient Air Quality Monitoring Programme (AAMP), which involved a greatly expanded national monitoring network providing enhanced real-time information to the public, as well as an increased local authority capacity to conduct indicative air monitoring. The results of the monitoring are compared to limit values set out in EU and national legislation on ambient air quality.

8.48 The application site and surrounding area fall into Air Quality Zone D, categorised as rural Ireland by the EPA.

Local Air Quality Monitoring

8.49 A desk study has been carried out to examine all relevant information relating to air quality conditions around the application site. The EPA website was examined to note information on baseline air monitoring data around the application site. The EPA co-ordinates and manages a nationwide network of over 110 monitoring stations which measures the levels of air pollutants and delivers this information to the public as part of the National Ambient Air

Quality Monitoring Programme (AAMP), which involved a greatly expanded national monitoring network providing enhanced real-time information to the public, as well as an increased local authority capacity to conduct indicative air monitoring. The results of the monitoring are compared to limit values set out in EU and national legislation on ambient air quality.

- 8.50 The closest national air quality monitoring location to the application site in a similar Zone D area is located in 'Roscommon Town' on Saint Ciaran's Street c. 19 km east of the Site. This site monitors levels of PM₁₀ and PM_{2.5} only.
- 8.51 The closest national air quality monitoring locations in a similar Zone D area that monitors for NO₂ is Birr (Zone D) and Carrick-on-Shannon (Zone D), c. 43 km and 55 km south south-east and north, respectively.
- 8.52 Recent annual mean concentrations monitored at Roscommon Town, Birr and Carrick-on-Shannon (published on the EPA website³) are presented in **Table 8-3**, **Table 8-4** and **Table 8-5**.

Table 8-3: Monitoring data at Roscommon Town (2023)

Monitoring Station	Annual Mean PM ₁₀ Concentration (µg/m ³)	Number of Days PM ₁₀ >50µg/m ³	Annual Mean PM _{2.5} Concentration (µg/m ³)
Roscommon Town	9.7	0	6.4

Table 8-4: Monitoring data at Birr (2023)

Monitoring Station	Annual Mean NO ₂ Concentration (µg/m ³)	Number of Hours NO ₂ >200µg/m ³	Annual Mean NO _x Concentration (µg/m ³)
Birr	11.3	0	26.4

Table 8-5: Monitoring data at Carrick-on-Shannon (2023)

Monitoring Station	Annual Mean NO ₂ Concentration (µg/m ³)	Number of Hours NO ₂ >200µg/m ³	Annual Mean NO _x Concentration (µg/m ³)
Carrick-on-Shannon	10.0	0	21.0

- 8.53 The tables above indicate that NO₂ and PM₁₀ concentrations monitored are below the annual mean AQALs and there are no exceedances of the 1-hour NO₂ or the 24-hour PM₁₀ limits. For rural areas, such as those surrounding the application site, it is anticipated that background concentrations would be no greater than the measured data presented.

Local Mapped Background Concentrations

- 8.54 A Regional-to-local (street) scale air pollutant concentration modelling for Ireland has been undertaken for 2018 and 2019. These models have been subsequently updated and now provide daily forecast, hourly updated and annual high-resolution maps for air quality in Ireland. Datasets from the latest EPA report⁴ (2024) have been sourced and presented in **Table 8-6**.

³ <https://www.epa.ie/environment-and-you/air/0>

⁴ Environmental Protection Agency (2024) Air Quality in Ireland Report 2023

Table 8-6: EPA Background Modelled Data (2023)

Pollutant	Mapped Background Concentration within Study Area ($\mu\text{g}/\text{m}^3$)
NO ₂	< 5
PM ₁₀	7 – 10
PM _{2.5}	6 – 8

Dust Deposition Monitoring

8.55 The results of the dust deposition monitoring undertaken at the 4 no. locations around the site boundary during the calendar year of 2024 and 2025 are presented in

8.56 **Table 8-7**, with a summary of the previous 3 years presented in **Appendix 8-A**.

RECEIVED: 05/12/2025

Table 8-7: Dust Deposition Monitoring Results

Date	D1			D2			D3			D4			Limit mg/m ² /day
	Total (mg/m ² /day)	Inorganic (mg/m ² /day)	Organic (mg/m ² /day)	Total (mg/m ² /day)	Inorganic (mg/m ² /day)	Organic (mg/m ² /day)	Total (mg/m ² /day)	Inorganic (mg/m ² /day)	Organic (mg/m ² /day)	Total (mg/m ² /day)	Inorganic (mg/m ² /day)	Organic (mg/m ² /day)	
January 2024	S	S	S	90	43	47	S	S	S	S	S	S	350
February 2024	152	76	76	85	27	58	103	53	50	160	87	73	350
March 2024	85	39	46	66	56	10	59	49	10	146	55	91	350
April 2024	138	34	104	98	21	77	74	35	39	473	110	363	350
May 2024	263	89	174	55	13	42	72	32	40	2119	734	1385	350
June 2024	228	56	172	70	9	61	75	10	65	2519	456	2063	350
July 2024	72	14	58	115	19	96	81	14	67	96	24	72	350
August 2024	243	12	231	192	20	172	177	23	154	305	39	266	350
September 2024	50	21	29	74	47	27	87	55	32	104	67	37	350
October 2024	92	53	39	74	22	52	80	32	48	127	68	59	350
November 2024	342	71	271	78	33	45	64	16	48	406	119	287	350
December 2024	48	13	35	146	53	93	173	59	114	S	S	S	350
January 2025	83	44	39	84	38	46	89	45	44	S	S	S	350
February 2025	364	258	106	298	208	90	496	358	138	386	238	148	350
March 2025	278	109	169	128	105	23	214	174	40	218	51	167	350
April 2025	57	34	23	105	78	27	78	52	26	80	49	31	350
May 2025	55	26	29	154	48	106	88	35	53	551	113	438	350

Table Notes:

S = sample jars smashed and could not be analysed

Bold = value greater than the limit of 350mg/m²/day

Exceedances recorded during April and November in 2024 resulted from high organic matter from nearby vegetation (i.e. agricultural activities offsite), as stipulated to the Planning Authority.

Exceedances recorded during May / June in 2024 resulted from a combination of onsite activities (soil stripping and overburden removal) and high organic matter from nearby vegetation (i.e. agricultural activities offsite), as stipulated to the Planning Authority.

- 8.57 There have been no complaints received by the site operators with regard to dust deposition in the local area; demonstrating that dust deposition beyond the site boundary at locations of exposure are considered to be acceptable.

Meteorology: Dispersion of Emissions

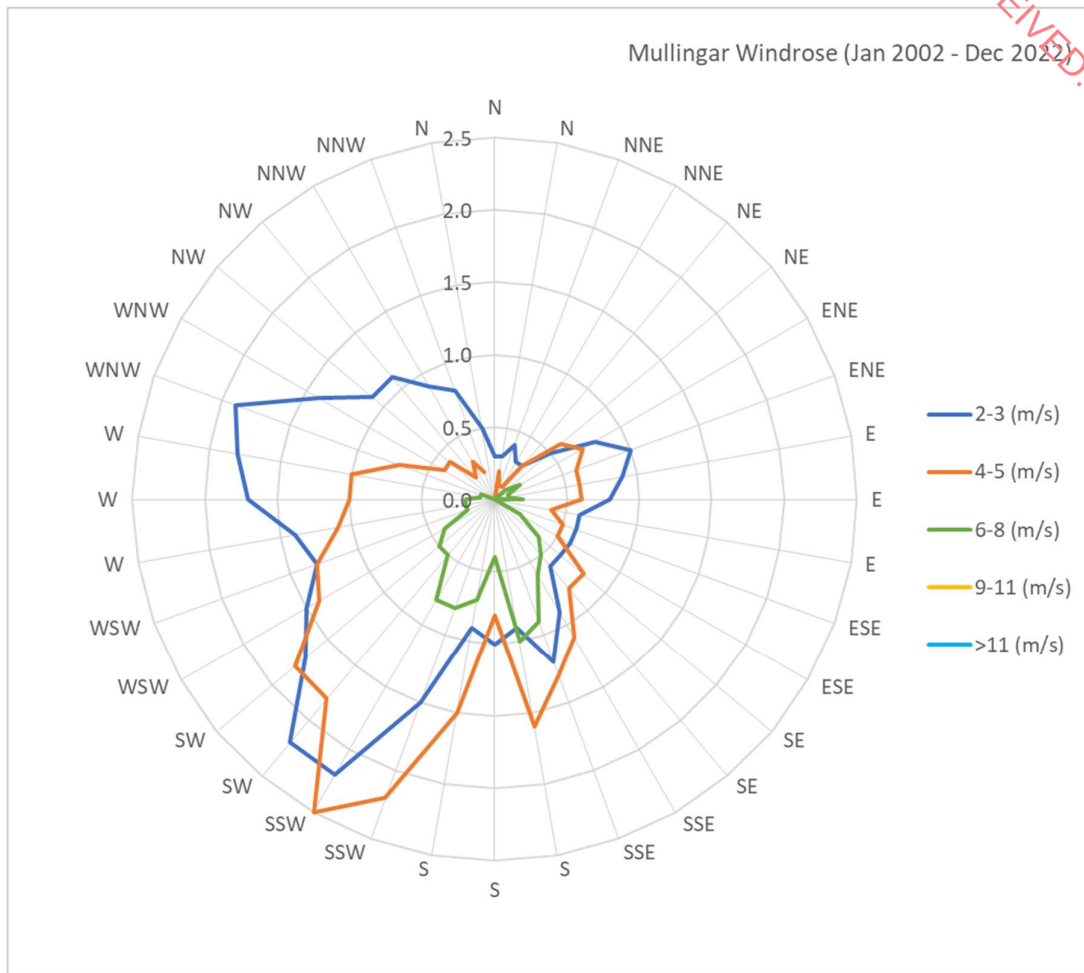
- 8.58 The most important climatological parameters governing the atmospheric dispersion of particles are as follows:
- **wind direction** determines the broad transport of the emission and the sector of the compass into which the emission is dispersed; and
 - **wind speed** will affect ground level emissions by increasing the initial dilution of particles in the emission. It will also affect the potential for dust entrainment.
- 8.59 Rainfall is also an important climatological parameter in the generation of dust; enough rainfall can suppress dust at the source and eliminate the pathway to the receptor. According to Arup (1995)⁵, rainfall greater than 0.2mm per day is sufficient to suppress dust emissions.

Local Wind Speed and Direction Data

- 8.60 An appropriate weather station with sufficient records of wind direction and wind speed considered representative of typical conditions experienced at the application site is Mullingar Meteorological Station (c. 55km east). A wind rose for the average conditions recorded at Mullingar over a 20-year period (2002-2022) is presented in **Plate 8-1**. The predominant wind direction is from the south-western quadrant.

⁵ Arup Environmental, Ove Arup and Partners (1995) The Environmental Effects of Dust from Surface Mineral Workings, HMSO, London (ISBN 11 75 3186 3)

Plate 8-1: Windrose for Mullingar Meteorology Station



Rainfall Data

8.61 Relevant rainfall data applicable to the site has been obtained from the Irish Meteorological Service website for the Ballinasloe station (2004 – 2024)⁶ c. 15 km south of the application site and is considered representative of typical conditions experienced at the application site. The annual average days with rainfall greater than 0.2mm are 223 days per year. Natural dust suppression (from rainfall) is therefore considered to be effective for 61% of the year.

Sensitive Receptors

Ecological Receptors

8.62 Mapping data published by the National Parks and Wildlife Service (NPWS) and the Air Pollution information System (APIS) has been utilised to identify designated ecological sites and protected habitats within the site locale.

⁶ Historical Data - Met Éireann - The Irish Meteorological Service

- 8.63 The application site is not subject to any statutory or non-statutory nature conservation designations. The closest designated site is the Ballynamona Bog and Corkip Lough SAC located c. 2km to the southeast.
- 8.64 As such any interaction between the site operations and ecological designations are 'insignificant' and not considered further.

Human Receptors

- 8.64 Sensitive locations are those where people may be exposed to emissions to air from the proposed development. Receptors have been identified within a 1km distance of the application site boundary at Cam quarry, as illustrated in **Figure 8-1**. The receptors identified up to 1km from the application site boundary are presented in **Table 8-8**.

Table 8-8: Sensitive Receptors within 1 km

Receptor reference	Receptor Type	Approx. Distance and Direction to:	
		Planning Red Line Boundary	Extraction Boundary
R1	Residential	60 (N)	150 (N)
R2	Residential	60 (N)	150 (N)
R3	Residential	30 (N)	125 (N)
R4	Residential	105 (NW)	205 (NW)
R5	Residential	260 (NW)	350 (NW)
R6	Residential	435 (NW)	510 (NW)
R7	Residential	470 (NW)	540 (NW)
R8	Residential	515 (NW)	585 (NW)
R9	Residential	545 (NW)	615 (NW)
R10	Residential	555 (NW)	620 (NW)
R11	Residential	590 (NW)	655 (NW)
R12	Residential	635 (NW)	705 (NW)
R13	Residential	745 (NW)	815 (NW)
R14	Residential	690 (NE)	910 (NE)
R15	Residential	620 (NE)	800 (NE)
R16	Residential	625 (NE)	765 (NE)
R17	Residential	600 (S)	1245 (S)
R18	Residential	670 (S)	1335 (S)
R19	Residential	700 (S)	1350 (S)
R20	Residential	760 (S)	1415 (S)
R21	Residential	790 (S)	1440 (S)
R22	Residential	790 (S)	1435 (S)
R23	Residential	835 (S)	1465 (S)
R24	Residential	920 (S)	1560 (S)
R25	Residential	970 (S)	1600 (S)

R26	Residential	725 (S)	1370 (SE)
R27	Residential	905 (E)	980 (E)
R28	Residential	750 (E)	875 (E)
R29	Residential	855 (E)	985 (E)
R30	Residential	950 (E)	1110 (E)
R31	Residential	860 (E)	1060 (E)
R32	Residential	865 (E)	1085 (E)
R33	Residential	865 (NE)	1120 (NE)
R34	Residential	865 (NE)	1150 (NE)
R35	Residential	875 (NE)	1170 (NE)
R36	Residential	880 (NE)	1190 (NE)
R37	Residential	1000 (NE)	1330 (NE)
R38	Residential	970 (NE)	1280 (NE)
R39	Residential	955 (NE)	1250 (NE)
R40	Residential	850 (N)	1040 (N)
R41	Residential	960 (N)	1145 (N)
R42	Residential	975 (N)	1130 (N)
R43	Residential	1000 (N)	1140 (N)
R44	Residential	850 (NE)	915 (NE)

Impact Assessment Methodology

8.65 The assessment approach has been informed by both national and local planning policy and guidance and established best practice and experience. The methodology used is presented in the sub-sections below.

Road Traffic Emissions Assessment

8.66 Atmospheric emissions related to site proposals are primarily associated with the exhaust emissions from heavy duty vehicles (HDVs also termed heavy goods vehicles HGV's).

Impacts on Human Receptors

8.67 The following traffic screening criteria used to determine whether the air quality impacts of a project can be scoped out or require a detailed assessment is based on the changes between the do something traffic (with the project) compared to the do minimum traffic (without the project) in the opening year.

8.68 Relevant screening applicable to the affected local road network is:

- Annual average daily traffic (AADT) flows will change by 1,000 or more; or
- Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or
- a change in speed band; or
- a change in carriageway alignment by ≥ 5 m.

- 8.69 If the traffic is not found to exceed any of the screening criteria presented, then effects are considered to be *not significant* and can be screened out of further consideration.
- 8.70 If the screening criteria is exceeded, human and ecological receptors within 200m of affected roads would be assessed, where necessary. If an ecological and/ or human receptor is located >200m from an affected road link, further consideration is not required.
- 8.71 The 200m distance screening threshold is supported in various guidance documents including the TII guidance and is therefore considered appropriate.
- 8.72 The assessment of air quality effects in relation to traffic generated during operational phase of the Proposed Development has been screened in accordance with Transport Infrastructure Ireland (TII) guidance and the DMRB guidance to identify whether further assessment is required the outcome of which is detailed in paragraphs 8.123.

Air Quality Impacts on Ecological Sites

- 8.73 Transport Infrastructure Ireland's Guidance for the Assessment of Ecological Impacts of National Road Schemes (2009) and Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010) provides details regarding the legal protection of designated conservation areas.
- 8.74 If both of the following criteria are met, an assessment of the potential for impact due to nitrogen deposition should be conducted:
- A designated area of conservation is located within 200 m of the proposed development; and
 - A significant change in AADT flows (>5%) will occur.
- 8.75 The Proposed Development has been screened against the criteria detailed in the Transport Infrastructure Ireland's Guidance for the Assessment of Ecological Impacts of National Road Schemes (2009) and Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010), the outcome of which is detailed in 8.123.

Dust Impact Assessment

- 8.76 The assessment has been undertaken in accordance with the IAQM's *Guidance on the Assessment of Mineral Dust Impacts for Planning* document. The methodology is summarised below and available to download on the IAQM website⁷ and therefore not reproduced in full here.
- 8.77 This guidance uses a simple qualitative distance-based screening process to identify those operations where the dust impacts are unlikely to be significant and therefore require no further assessment. Where more detailed assessment is required, a basic assessment framework is presented which employs the Source-Pathway-Receptor approach to evaluate risk of impacts and effects.
- 8.78 The IAQM guidance uses a distance-based screening criteria for both suspended dust (PM₁₀) and deposited dust, stating that adverse impacts from hard rock sites are uncommon beyond 400m and 1km for deposited dust and suspended dust respectively⁸ measured from the nearest dust generating activity.
- 8.79 The IAQM assessment methodology for deposited (disamenity) dust and suspended dust (health effects) are stipulated below.

⁷ <https://iaqm.co.uk/guidance/>

⁸ measured from the nearest dust generating activity.

Deposited Dust

- 8.80 Where there are sensitive receptors within the screening distance of 400m, the assessment would progress onto a risk-based approach based on the source-pathway-receptor conceptual model, i.e. the hypothetical relationship between the source (S) of the pollutant, the pathway (P) by which exposure might occur, and the receptor (R) that could be adversely affected.
- 8.81 The key steps are:
- assess the application site characteristics and baseline conditions: Incorporates a review of baseline conditions including PM₁₀ background; a description of activities to inform the source term; and characterisation of the application site setting in terms of the location and sensitivity of representative receptors, and meteorological conditions (wind patterns and rainfall);
 - estimate dust impact risk: the dust impact risk for each representative receptor is determined from the source term (residual dust risk after embedded mitigation) and pathway. The 'pathway effectiveness' is based upon the distance of the receptor from the dust source and the frequency at which it is down-wind from the source (factoring out the frequency of wet days). The assessment of impact considers emissions from the application site as a whole; and
 - estimate likely magnitude of effect: The risk predicted at each representative receptor is considered together with the sensitivity of that receptor, to give the likely magnitude of the effect that will be experienced.
- 8.82 The IAQM minerals dust assessment methodology provides a framework to establish the unmitigated risk of dust impacts associated with a development at both human and ecological receptors, whilst taking into account existing and designed-in control measures.
- 8.83 The IAQM assessment methodology predicts the likely magnitude of effect using a number of factors, including the receptor sensitivity and the risk of impact. The risk of impact is determined using the residual source magnitude of a dust generating activity and the pathway effectiveness. The determination of the magnitude of effect is presented below in **Table 8-9**.

Table 8-9: IAQM Determination of Magnitude of Effect

Risk of Impact	Receptor Sensitivity		
	Low	Medium	High
High Risk	Slight Adverse Effect	Moderate Adverse Effect	Substantial Adverse Effect
Medium Risk	Negligible	Slight Adverse Effect	Moderate Adverse Effect
Low Risk	Negligible	Negligible	Slight Adverse Effect
Negligible Risk	Negligible	Negligible	Negligible

- 8.84 Following determination of the separate degree of estimated effects for disamenity, ecological and health effects, a conclusion on the likely significance of air quality effects is reached.
- 8.85 The assessment takes into account controls that are incorporated into the scheme design. If the outcome of the assessment is that the air quality effect is not significant, then it is likely that these controls would be sufficient. If, on the other hand, the assessment predicts the

impacts and effects to be significant, then it is likely that additional mitigation will be required, to a proportionate degree to sufficiently reduce the impacts.

- 8.86 Following the results of the risk assessment, additional mitigation measures are detailed, as required, and the residual impact assessed.

Suspended Dust (PM₁₀)

- 8.87 In accordance with the IAQM distance-based screening methodology, if there are sensitive receptors within 1km of the application site then further assessment of potential impacts for suspended dust are required.
- 8.88 The IAQM guidance notes that “*Dust arising...can reduce amenity in the local community due to visible dust plumes and dust soiling. The generally coarser dust that leads to these effects may, therefore, be referred to as ‘disamenity dust’. The smaller dust particles can remain airborne longer, potentially increasing local ambient concentrations of suspended particulate matter (e.g. PM₁₀ and to a lesser extent PM_{2.5}), which is associated with a range of health effects*”.
- 8.89 The guidance further notes “*...the PM₁₀ fraction is relevant to health outcomes. For quarries most of this suspended dust will be in the coarse sub-fraction (PM_{2.5-10}), rather than in the fine (PM_{2.5}) fraction.*” It is on this basis that only PM₁₀ is considered further in this assessment.
- 8.90 With respect to PM₁₀ and in accordance with the IAQM minerals guidance, if backgrounds are less than 17µg/m³, it is considered there is little risk of the impacts from the proposed development to cause an exceedance of the annual mean AQAL. Where backgrounds are greater than 17µg/m³, the impact should be considered together with baseline conditions to assess the potential significance of effects on the surrounding receptors.

Assessment of Impacts - Dust

Current & Permitted Site Operations

- 8.91 The existing quarry operations comprise extraction of limestone up to 500,000 tonnes per annum using periodic blasting techniques with primary size reduction by mobile crushing and screening units. Aggregates generated from the crushing and screening plant are currently exported off site for road construction and site development works, and for use in concrete and asphalt manufacturing plants operated at other Roadstone sites.
- 8.92 Previously stripped soils and overburden have been used to construct perimeter screening berms, with additional screening berms currently being constructed along the northern boundary of the extraction footprint. The screening berms would remain as a permanent feature of the restoration plan.
- 8.93 The existing quarry extraction area occupies the central part of the site and currently consists of 2 no. working faces. The extraction area is currently c. 7 hectares within an overall permitted extraction area of c. 23.7 hectares.
- 8.94 Stockpiles of extracted and processed (crushed and screened) material are currently located at surface level within the northern area of the permitted footprint for extraction and on the quarry floor.
- 8.95 The southern portion of the site is in part covered with stripped overburden from the site (c. 2.7 hectares) with the remainder of the area still in its natural state of unmanaged grasslands, scrub and gorse. This southern area is a permanent storage area with no materials being disturbed or used for restoration purposes.

Development Permitted but not commenced

- 8.96 Development that is permitted but not operational at the site includes the concrete batching plant, concrete block making facility and truck washdown facility. The batching plant and block making facility is permitted to produce 50,000m³ concrete per annum and 5 million blocks, respectively.
- 8.97 The location of the permitted (but not constructed) Concrete Batching Plant and Concrete Block Making Facility is illustrated in **Figure 8-2** and would include external storage of input materials (aggregate and sand) adjacent to the east of the facilities.

Proposed Site Operations

- 8.98 The proposed operations are essentially a continuation of all previously permitted development, including the concrete batching / block making plant and workshop not constructed to date. The proposed operations would continue for an additional period of 25 years to allow for extraction of the in-situ reserves.
- 8.99 There will be no changes to any operational arrangements such as hours of working, extraction methods, extraction rates, and restoration plans. The proposed development would have a reduced extraction area, from the currently permitted footprint of 23.7 hectares to 17.1 hectares. The area omitted is illustrated in EIAR **Figure 1-3** and **Figure 2-1** due to the identification of Marsh Fritillary butterfly and associated suitable habitat.
- 8.100 Within the proposed extraction area there is an area of c. 8 hectares where soils and overburden are required to be stripped (over and above what has already been stripped). The total amount of overburden to be removed is estimated as 66,000m³ which will either be stored within the dedicated overburden storage area to the southwest of the extraction area or further used in screening berms.
- 8.101 All existing perimeter screening berms and the overburden storage area would remain as permanent features of the restoration plan.
- 8.102 The proposed application is in relation to the continuation of current operations; existing development traffic volumes will therefore not increase as a result of the proposed continuance of use.

Screening Assessment

- 8.103 In accordance with the adopted IAQM screening criteria, further assessment of deposited dust and suspended dust is required at dust sensitive receptors within 400m and 1km, respectively.
- 8.104 There are human receptors with a sensitivity to dust emissions within 400m of the site. There are no designated habitat sites within 400m of the Site. Further assessment for the potential impact of deposited and suspended dust on human receptors has therefore been undertaken.

Deposited Dust Assessment

- 8.105 Five human receptor locations (R1 to R5) have been identified within the screening distance for consideration in the assessment of dust deposition, as shown in **Table 8-10**, whilst their locations are illustrated in **Figure 8-1**.
- 8.106 The sensitivity of the receptors to dust deposition have been categorised in accordance with the IAQM guidance.

Table 8-10: Receptors Identified for Assessment of Deposited Dust

Receptor Ref	Description	Dust Sensitivity	Distance / Direction – Site Boundary	Distance / Direction – Dust Generating Activities
R1	Residence	High	60m North	150m North
R2	Residence	High	60m North	150m North
R3	Residence	High	30m North	125m North
R4	Residence	High	105m North-west	205m North-west
R5	Residence	High	260m North-west	350m North-west

8.107 The potential dust sources within 400m of the identified receptors and their potential for emission are considered below. From these, the determined residual source emissions are stated per activity or area, which in turn are based on general knowledge of the processes. The activities with the potential to generate dust and are therefore considered within the assessment below are as follows:

- Site preparation & restoration;
- Onsite transportation;
- Off-site transportation;
- Mineral extraction;
- Material handling; and
- Stockpiling.

Residual Source Emission (RSE) Magnitude

8.108 The residual source emissions (RSE) magnitude is the potential magnitude of dust emissions after embedded mitigation measures have been taken into account. This dust assessment identifies whether dust controls above the current baseline level of control is required to ensure the Proposed Development has an insignificant impact on local air quality.

Embedded Mitigation Measures

8.109 On the basis that the proposed development is a continuation of the existing, baseline scenario over an extended time period, the embedded mitigation measures are considered to include any operational measures or design measures that would continue to mitigate against dust emissions.

8.110 A number of dust controls are stipulated within the existing planning consent (P. Ref. 04/1479 and ABP PL20.215417) would continue to be implemented, these include the following:

- Condition 4: All existing and proposed screening berms shall be constructed and be landscaped and planted with trees and shrubs, as detailed [...]. All failures shall be replanted within one year;
- Condition 6. Prior to commencement of development, the developer shall submit to the planning authority for written agreement a proposal for an Environmental Management System (EMS). This shall include the following:
[...] proposals for the suppression of dust on site and on the access road [...].
- Condition 15: The wheels and undersides of all vehicles transporting aggregate from the site onto the public road shall, prior to the exit of such vehicles onto the public road, be

washed in a wheel washing facility which shall be constructed, installed and operated in accordance with the requirement of the planning authority.

8.111 Other dust control measures that have either been incorporated into the design or operate on a routine basis that would continue to be implemented throughout the proposed development include:

- Buffer distance of 100m (minimum) between off-site receptors and dust-generating activities;
- Permanent retention of established vegetated screening berms (see **Figure 8-2**), including screening berm currently in construction along northern boundary of the extraction footprint;
- Operation of the wheel wash, located between the hard paved access road and internal haulage routes;
- c. 220m of hard paved access road from the site access to the wheel wash;
- Fixed sprinklers along the paved haulage route;
- All internal haul roads made of compacted aggregate / hardcore;
- All drilling rigs fitted with dust filters;
- CBP would be fully clad and a dust control system to control fugitive emissions from the cement silos;
- Onsite mobile bowser for use at working face (extraction and site preparation / restoration), stockpiles and internal haulage routes;
- Site speed limit of 15kph on all internal haulage routes;
- Haulage routes designed to avoid steep inclines;
- Mechanical road sweeper for use on paved access road and local public road network;
- All loaded vehicles are wetted down with an overhead spray bar prior to exiting the site;
- All excavation activities occur below the natural lay of land due to the open pit nature of the workings, which acts as a barrier to dust emission dispersal; and
- Restoration will require low volumes of material handling / transfer. No material transfers made from the overburden storage area or vegetated screening berms, which shall be kept as a permanent restoration feature.

Summary of Residual Source Emission (RSE) Magnitude

8.112 The residual source emissions (RSE) magnitude (i.e. the potential magnitude of dust emission after embedded mitigation measures have been taken into account) for each required activity is presented in **Table 8-11**.

Table 8-11: Summary of Residual Source Emission (RSE) Magnitudes

Activity	RSE	Factors / Designed in Measures (for activities <400m of receptors)
Site preparation	Small - Medium	Preparation of hardstanding area for CBP / CBMF. Stripped soils / overburden stored at the permanent storage area to southwest of extraction area used to enhance screening berms Tractor and bowser for use during dust generating activities.

Activity	RSE	Factors / Designed in Measures (for activities <400m of receptors)
Site restoration	Small	Restoration with small volumes of soils required (restoration plan includes large permanent water body). Final restoration would be small amount of soils reinstated on yard and block yard area. All screening perms and overburden storage areas to remain intact and permanent features of restoration plan. Tractor and bowser for use during dust generating activities.
On-site transportation	Small	Designated haulage routes made of compacted aggregate. Speed limit onsite of 15 kph. Low number of movements required per working day. Road vehicles requiring access to the CBP / CBMF / stockpiles to traverse along internal routes of compacted aggregate. Tractor and bowser used during dry / windy conditions.
Off-site transportation	Small	c. 220m hard paved access road from site access. Effective vehicle cleaning facilities onsite (wheel wash) . Road sweeper for use on access road and public road network. All loaded vehicles securely sheeted. HGV movements of c. 166 per working day (see Chapter 14: Traffic). Road vehicles requiring access to unpaved areas of the Site traverse on haul roads of compacted aggregate.
Storage	Medium	As extraction progresses and the above area deepens, stockpiles will be protected by steep quarry faces. Stockpiles containing fine material sprayed with water during periods of working and during dry / windy weather. Tractor and bowser used on stockpiles, as required. All existing screening berms fully vegetated.
Excavation	Medium	Drilling / blasting undertaken on a campaign basis, with circa 40-50,000 tonnes per blast Active working areas of <20ha Minimum of 100m from off-site receptors All drill rigs fitted with dust suppression. Maximum extraction rate of 500,000 tpa.
Material Handling	Medium	As extraction progresses and quarry deepens, sheltering effect of steep quarry walls on material handling operations in the extraction footprint. Crushed / screened material of medium to high dust potential during dry / windy conditions. Water suppression for when stockpiles are worked.

Activity	RSE	Factors / Designed in Measures (for activities <400m of receptors)
Processing	Medium	Processing operations (within 400m of receptors) limited to mobile crushing and screening unit. Plant located on quarry void floor adjacent to working face, benefitting from sheltering effect of quarry walls. Incorporated water suppression into crushing and screening plant. Water suppression available, as required.

8.113 As a precautionary approach the highest activity classification, i.e. 'medium', has been applied in the risk assessment matrix.

Summary of Pathway Effectiveness

8.114 The site-specific factors considered to determine the effectiveness of the pathway are the distance and direction of receptors relative to the prevailing wind directions. The frequency of winds with the potential to carry dust from the operational areas to the respective receptors were calculated on the basis of the orientation and the meteorological conditions as detailed in **Plate 8-1**.

8.115 A summary of the pathway effectiveness, in accordance with the IAQM methodology is provided in **Table 8-12**.

Table 8-12: Determination of Pathway Effectiveness

Receptor	Distance from Operations (m) ^A	IAQM Distance Category	Wind Sectors Affecting Receptor	Frequency of Winds (%) >5m/s and Dry	Frequency Category	Pathway Effectiveness
R1	150m	Intermediate	E - WSW	3.1%	Infrequent	Ineffective
R2	150m	Intermediate	E- WSW	2.9%	Infrequent	Ineffective
R3	125m	Intermediate	ESE – S	1.4%	Infrequent	Ineffective
R4	205m	Distant	E – SSE	0.7%	Infrequent	Ineffective
R5	350m	Distant	E - ESE	0.1%	Infrequent	Ineffective

Summary of Dust Effects and Significance

8.116 The likely magnitude of dust effects has been determined by consideration of the residual source emission and the pathway effectiveness, in accordance with the IAQM methodology. The results are summarised in **Table 8-13**.

Table 8-13: Summary of Dust Impact Risk and Magnitude of Effects

Receptor (A)	Residual Source Emission	Pathway Effectiveness	Dust Impact Risk	Receptor Sensitivity	Magnitude of Dust Effects
R1	Medium	Ineffective	Negligible	High	Negligible

R2		Ineffective	Negligible	High	Negligible
R3		Ineffective	Negligible	High	Negligible
R4		Ineffective	Negligible	High	Negligible
R5		Ineffective	Negligible	High	Negligible

8.117 The likely dust effect is predicted to be 'negligible' at all considered receptors.

8.118 Based upon the consideration of the magnitude of effects at the individual receptors, the overall effect from dust emissions on disamenity is considered be 'not significant' for the Proposed Development with the embedded mitigation measures taken into account.

Suspended Dust Assessment

8.119 As previously stated, the IAQM minerals guidance states that if the annual mean PM₁₀ background concentration is less than 17µg/m³ it is considered unlikely that any process contribution from the additional activities proposed at the site would lead to an exceedance of the annual mean AQAL.

8.120 The existing air quality, in terms of annual PM₁₀, has been taken from the background maps to represent conditions at the site. The maximum background PM₁₀ concentration across the surrounding environment is 7-10µg/m³, representing approximately 18-25% of the corresponding AQAL for PM₁₀ and well below the criteria of 17µg/m³.

8.121 It is therefore considered that in the absence of additional mitigation above the embedded measures stipulated in paragraphs 8.110 and 8.111, the effect of the continuation of existing operations on human health as a result of emissions of suspended dust would be negligible.

Assessment of Impacts – Traffic Emissions

8.122 The currently permitted traffic movements are in line with the existing planning consent based upon the removal of 500,000 tonnes of limestone per year. On account of the proposed extraction rate remaining at 500,000 tonnes per year, traffic volumes will not increase as a result of the proposed development.

8.123 The change in trip generation is therefore below the criteria with regards to both human and ecological receptors. Road traffic impacts associated with the proposed development on air quality can be considered as having a negligible and therefore not significant effect on human receptors. No further assessment is therefore required.

Mitigation and Management

Unplanned Events (i.e., Accidents)

8.124 Accidents, malfunctions, and unplanned events refer to events or upset conditions that are not part of any activity or normal operation of the proposed development planned by the Applicant. Even with the best planning and the implementation of preventative measures, the potential exists for accidents, malfunctions, or unplanned events to occur during the proposed development operations.

8.125 Many accidents, malfunctions and unplanned events are, however, preventable and can be readily addressed or prevented by good planning, design, emergency response planning,

and mitigation. In terms of air quality impact, the following unplanned events could influence the local area:

- equipment malfunction;
- dry and windy weather conditions with dust suppression equipment malfunction; and
- accidental material spillages during transport.

8.126 In relation to air quality, the impacts of any unplanned events are considered to be negligible. If unplanned events were not mitigated, the effects of dust during dry and windy conditions could possibly lead to occasional increases in nuisance dust and 24-hour mean PM₁₀ concentration immediately surrounding the application site.

8.127 In the event that the water suppression is not operational for a short period of time (i.e. malfunction or maintenance) and meteorological conditions dictate that water suppression is required to ensure dust emissions do not disperse to off-site receptors, alternative sources of water will be provided, that is, using a water bowser.

Cumulative / Synergistic Impacts

8.128 Cumulative impacts are those which result from incremental changes caused by other past, present, or reasonably foreseeable actions or developments together with those generated by the proposed development. Therefore, the potential impacts of the proposed development cannot be considered in isolation but must be considered in addition to impacts already arising from existing or planned development.

8.129 This air quality impact assessment herein indicates that the proposed development will not contribute to a significant increase in local air pollution by way of excessive air / dust emissions.

8.130 A 17-turbine wind farm (Seven Hills Wind Farm) has been granted planning permission (ABP Ref. 313750-22) in November 2023 which surrounds the application site to the south, east and west with the closest infrastructure located c.100m from the site boundary. Emissions to air from the wind farm development would be during the construction phase with indirect short term or temporary dust and vehicular emissions.

8.131 A series of mitigation measures were presented within the submitted EIAR for the construction phase of the wind farm; the development was considered to have a short-term imperceptible impact on air quality upon implementation of these measures with no significant direct or indirect effect on air quality during the wind farm construction. The wind farm EIAR submission concluded that it would not give rise to any significant adverse cumulative impacts in-combination with other plans or projects in the wider area.

8.132 On account of there being no receptors located within the screening distance of 250m of both Cam quarry and the wind farm, and that the continuation of working at the site would not increase the traffic levels on the local road network, there is considered to be no potential for significant cumulative impact.

8.133 The cumulative impact of the proposed development is therefore classified as insignificant.

Interaction with Other Impacts

8.134 The potential impact on air quality by the project on sensitive receptors including sensitive ecological and human receptors has been fully assessed in this chapter.

Mitigation Measures

- 8.135 The overall effects from the proposed development are considered to be 'not significant' with the embedded mitigation measures taken into account. Notwithstanding this, a series of industry good practise operational controls have been recommended for implementation during the proposed development.
- 8.136 **Table 8-13** presents a summary of the current environmental measures that summarise the controls that would continue be adhered to on a routine basis. The implementation of such measures would ensure potential dust impacts remain 'not significant'.
- 8.137 **Table 8- 15** presents a series of additional measures that are recommended for inclusion for the proposed development based on industry good practice. This is followed up with recommendations with regard to monitoring of airborne emissions.

Table 8-14: Summary of Designed in Mitigation Measures

Source / Receptor	Designed in / Recommended Mitigation Measures
General	100m minimum stand-off distance from site boundary for all dust-generating activities (excluding site access road)
Site preparation / restoration	Application of water suppression using onsite bowser, as required Progressive soil stripping / overburden removal and restoration
Excavation	All drill rigs fitted with dust filters Majority of excavation undertaken below the natural lay of the land, acting as a natural barrier.
Material handling	Application of water suppression using onsite bowser, as required.
On-site transportation	Application of water suppression using onsite bowser, as required. Site speed limit of 15kph. All onsite haulage routes made of compacted aggregate.
Off-site transportation	Wheel wash facility, to be used by all vehicles exiting site onto public road. Paved access road of 220m. Permanent water suppression system along access road between site access and wheel wash. Site speed limit of 15kph (signage and staff training). Mechanical road sweeper for use on paved access road and local public road network. All loaded vehicles are wetted down with an overhead spray bar prior to leaving site.
Processing	Application of water suppression using onsite bowser, as required. <u>Mobile Crushing & Screening Plant:</u> Fitted with a dust suppression system, to be used at all times when in operation. <u>Concrete Batching Plant / Block Making Facility:</u> All conveyor belts fully enclosed with transfer points protected from the wind.
Storage – soil / overburden	Permanent retention of all existing screening berms. Seed / vegetate surfaces of completed perimeter mounds and stockpiles of restoration soils. All failures of the above shall be replanted within one year. No material transfers <i>from</i> the overburden storage area.

Storage – other	Use of water suppression to moisten stockpiles during periods of dry and windy weather. Stockpiles associated with the CBP / CBMF are located a minimum of 400m from off-site receptors.
-----------------	---

8.138 Additional mitigation measures that are recommended for implementation are presented below in Error! Reference source not found..

Table 8- 15: Summary of Recommended Mitigation Measures

Source / Receptor	Designed in / Recommended Mitigation Measures
General	Preparation of dust management and monitoring plan (DMMP) to include: Summary of dust controls Monitoring and template forms (see paragraphs 8.137 onwards) Procedures (i.e. complaints, staff training, contingency plans)
Site preparation / restoration	Restricted vehicular access to restored areas Handling minimised where possible and drop heights reduced to the minimum practicable.
Material handling	Minimise drop heights when handling material. Protect from wind where possible.
On-site transportation	All onsite haulage routes regularly inspected for integrity with repairs instigated as soon as practicable (all inspections / actions recorded in site logbook)
Off-site transportation	Wheel wash to be operated and maintained in accordance with manufacturer's instructions, with all records kept up to date and on site
Processing	Additional water suppression used on the mobile crusher / screening plant on dry days (above the manufacturer fitted) when within 200m of off-site receptors (see Fig 8-2) All plant used within its design capacity and serviced in line with the manufacturers recommendations (all to be recorded within site logbook)
Storage – soil / overburden	Water suppression to be utilised during any soil stripping / overburden removal / transfer operations undertaken on a dry day located within 200m of off-site receptors (see Fig 8-2) All stockpiles suitably profiled with restricted vehicular access to the base
Storage – other	Water suppression used on a daily basis on dry days on all stockpiles of processed aggregate located within 200m of off-site receptors (see Figure 8-2). All stockpiles suitably profiled All fine materials (i.e. cement) for CBP stored in fully enclosed silos with automated high pressure warning systems in operation Stockpiles adjacent to concrete batching plant / block making facility clearly designated to ensure no traversing of vehicles along base with a maximum height of 5m.

Monitoring

8.139 Dust deposition monitoring should continue to be undertaken at the site for the duration of the proposed development (in accordance with conditions attached to any future planning permission and in line with the EPA DoEHLG and ICF guidelines).

- 8.140 It is recommended that dust monitoring continue using the Bergerhoff Method at the existing monitoring locations D1 to D4. Dust monitoring locations D1 and D4 are considered to remain suitable and representative of the closest off-site residences along the R363 to the north.
- 8.141 Whilst the absence in complaints demonstrates the effectiveness of mitigation on-site in the baseline scenario with regard to 'acceptable' levels of off-site dust deposition, the elevated levels of dust deposition identified from the monitoring scheme do highlight the potential for dust emissions to exceed the industry limit at locations in close proximity to receptors of high sensitivity to dust (i.e. residential).

Residual Impact Assessment

- 8.142 With the range of mitigation measures to be implemented and design measures to be incorporated into the working scheme, it is considered that the risk of air quality and dust related impacts at receptors generated by the proposed development will be 'negligible'

Conclusion

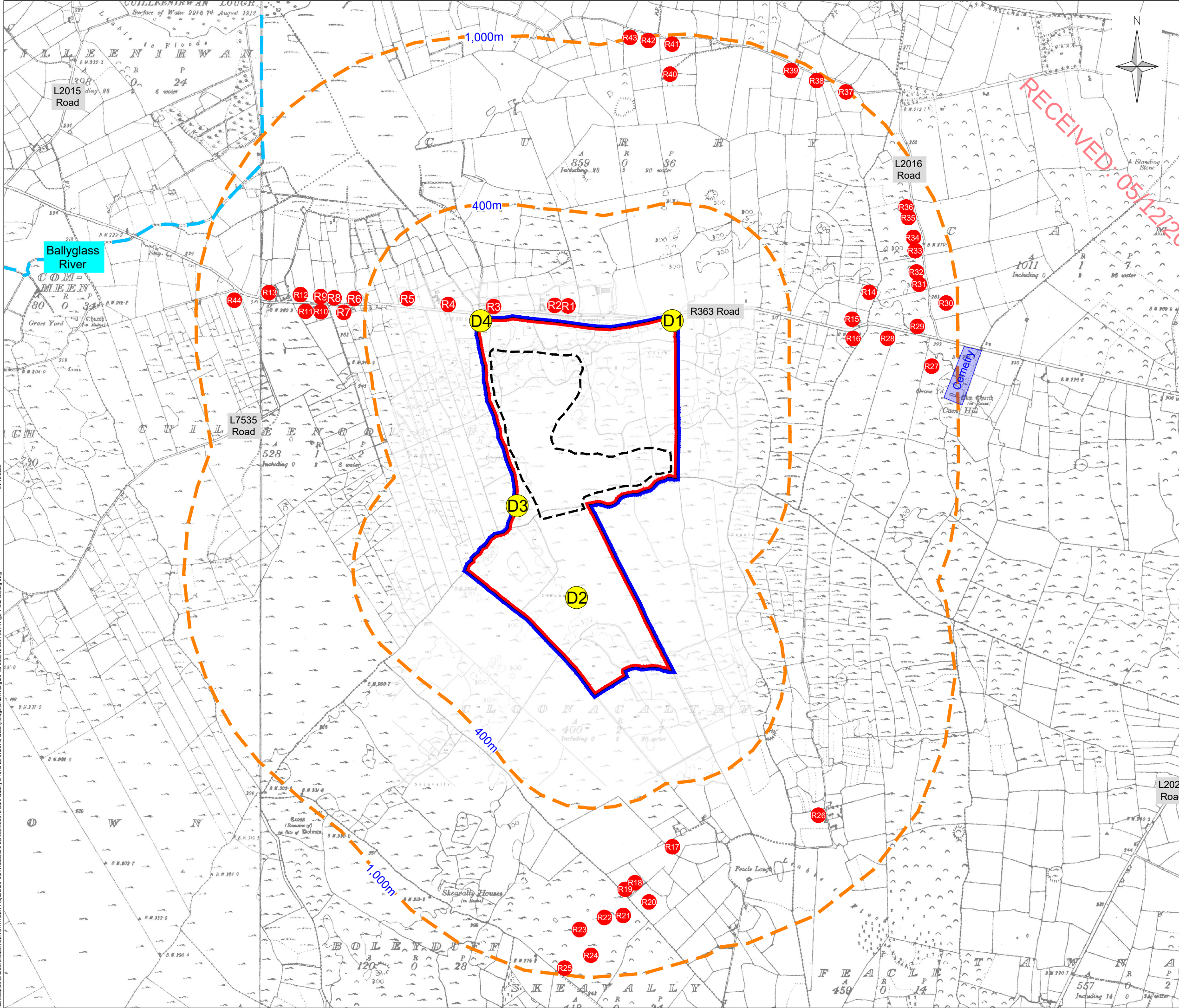
- 8.143 This assessment has considered the potential air quality effects arising from the activities associated with the continuation of current operations at the existing Roadstone Cam Quarry site.
- 8.144 A qualitative assessment of potential dust effects associated with the Proposed development has been undertaken in accordance with the IAQM 'Guidance on the Assessment of Mineral Dust Impacts for Planning'.
- 8.145 Following the continued implementation of operational dust control measures on site and the designed in environmental measures, impacts on disamenity, human and ecological receptors are considered to be 'not significant'. Notwithstanding this, a series of industry good practice measures have been recommended, alongside the preparation of a dust management plan and a pro-active visual monitoring scheme to supplement the existing dust monitoring regime.
- 8.146 A screening assessment of additional vehicle movements generated above baseline as a result of the Proposed Development has been undertaken. On account of the proposed extraction rate remaining at the existing permitted level, traffic volumes will not increase as a result of the proposed development. As such, impacts on human and ecological receptors are considered to be 'not significant'.
- 8.147 There is not considered to be a potential for cumulative effects in relation to dust or vehicle emissions.
- 8.148 Overall, it is therefore considered that the potential impacts from dust and airborne emissions arising from the Proposed Development do not present a material constraint to the development proposals.

RECEIVED: 05/12/2025

Figures

Figure 8-1 Site Setting & Receptor Locations

Figure 8-2 Site Layout & Dust Monitoring Locations



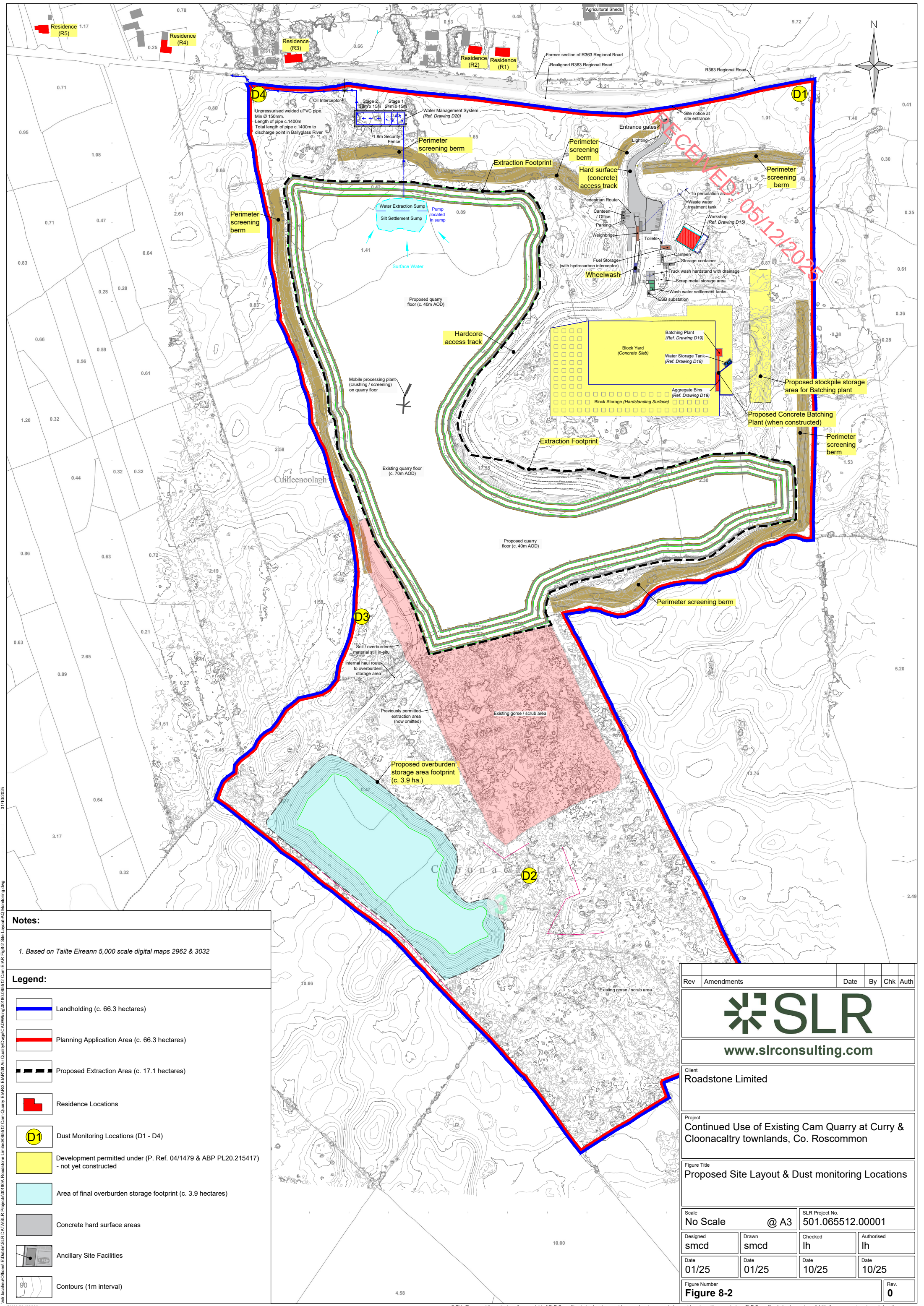
Notes:

1. Based on 6 inch scale Tailte Eireann Discovery raster maping RN047, RN048, RN050, RN051

Legend:

- Landholding (c. 66.3 hectares)
- Planning Application Area (c. 66.3 hectares)
- Proposed Extraction Area (c. 17.1 hectares)
- Distance Off-Sets from Planning Application (red line) Boundary 400m and 1km
- Residential Property Locations Residences numbered within 1km of Application Boundary
- Watercourse
- Dust Monitoring Locations (D1 - D4)

Rev	Amendments	Date	By	Chk	Auth
 www.slrconsulting.com					
Client Roadstone Limited					
Project Continued Use of Existing Cam Quarry at Curry & Cloonacally townlands, Co. Roscommon					
Figure Title Site Setting					
Scale 1:12,500 @ A3		SLR Project No. 501.065512.00001			
Designed smcd	Drawn smcd	Checked lh	Authorised lh		
Date 01/25	Date 01/25	Date 10/25	Date 10/25		
Figure Number Figure 8-1					Rev. 0



Notes:

1. Based on *Tailte Eireann* 5,000 scale digital maps 2962 & 3032

Legend:

- Landholding (c. 66.3 hectares)
- Planning Application Area (c. 66.3 hectares)
- Proposed Extraction Area (c. 17.1 hectares)
- Residence Locations
- Dust Monitoring Locations (D1 - D4)
- Development permitted under (P. Ref. 04/1479 & ABP PL20.215417) - not yet constructed
- Area of final overburden storage footprint (c. 3.9 hectares)
- Concrete hard surface areas
- Ancillary Site Facilities
- Contours (1m interval)

Rev	Amendments	Date	By	Chk	Auth
SLR					
www.slrconsulting.com					
Client Roadstone Limited					
Project Continued Use of Existing Cam Quarry at Curry & Cloonacaltry townlands, Co. Roscommon					
Figure Title Proposed Site Layout & Dust monitoring Locations					
Scale No Scale @ A3		SLR Project No. 501.065512.00001			
Designed smcd	Drawn smcd	Checked lh	Authorised lh		
Date 01/25	Date 01/25	Date 10/25	Date 10/25		
Figure Number Figure 8-2					Rev. 0

Appendices

Appendix 8-A: Dust Monitoring Results: 2022 - 2025

Parameter	Monitoring Location	Closest Residence	2022	2023	2024	2025 (January – May)
Average deposition (mg/m ² /day)	D1	380m	284	447	156	167
	D2	880m	90	114	95	154
	D3	670m	76	228	95	193
	D4	50m	192	201	646	309
Number of exceedances of 350 (mg/m ² /day)	D1	380m	3	5	0	1
	D2	880m	0	0	0	0
	D3	670m	0	1	0	1
	D4	50m	1	2	4	2
Number of exceedances of 350 (mg/m ² /day) – inorganic portion only	D1	380m	1	2	0	0
	D2	880m	0	0	0	0
	D3	670m	0	0	0	1
	D4	50m	0	0	2	0