Shillelagh Quarries Limited

HEMPSTOWN QUARRY

Remedial Stage 1 Screening for Appropriate Assessment

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1. INTRODUCTION

1.1. BACKGROUND

WSP Consulting Ireland Ltd. (WSP) has been commissioned to prepare a Remedial Appropriate Assessment Screening (rAAS) Report to inform a substitute consent planning application. This application covers activities undertaken between the 29 December 2019 and present day. It is submitted on behalf of Shillelagh Quarries Limited ('the Applicant', hereafter referred to as SQL) to An Bord Pleanála (ABP) for an existing quarry located at Hempstown Commons, Co. Kildare ('the Development').

The substitute consent application will run concurrently with an application for further development of the quarry for extraction under S.37L of the Planning and Development Act, 2000. The application for further development is outside of the scope of this report and will be submitted separately.

The requirements of European Council Directive 92/43/EEC of 21 May 1992 (as amended) on the conservation of natural habitats and of wild flora and fauna (the 'Habitats Directive'), ABP is required to undertake a Screening for a remedial Appropriate Assessment (rAA), to determine whether the Existing Development may have had likely significant effects (LSEs) upon European Sites, i.e., those that may be present within the Existing Development's Ecological Zone of Influence (EZoI), either alone, or in combination with other plans or projects.

'European sites' consist of Special Areas of Conservation (SACs) designated for habitats and species of community importance, and Special Protection Areas (SPAs) designated for birds and bird habitats. The process of completing the designation of SACs and SPAs is ongoing in Ireland. Until such time as this process is completed, candidate SACs (cSACs) and proposed SPAs (pSPAs) have the same protection as SACs and SPAs. For projects requiring planning permission, the requirement for AA Screening (and AA if required) is transposed into Irish law through Part XAB of the Planning and Development Act 2000 (as amended) ('The Planning Acts'), and the Planning and Development Regulations 2001 (as amended). Section 177U(1) of The Planning Acts places a duty upon 'Competent Authorities' (in this case ABP) to determine LSEs of proposed developments (in this case Existing Developments) upon European sites prior to granting consent. The Competent Authority's AA Screening determination will be informed by this report.

Should AA Screening identify LSEs (or should it not be possible to exclude such effects based on objective evidence and in view of best scientific knowledge) it will be necessary for the Competent Authority to carry out AA (Appropriate Assessment) to determine if the unauthorised activity associated with the Existing Development has had adverse effect(s) on the integrity of a European Site, either alone or in combination with other plans or projects. In line with Section 177V of the Planning Acts, AA determination would be informed by a Remedial Natura Impact Statement (rNIS) which would determine whether those LSEs had an adverse effect on the integrity of any European site, in light of their Conservation Objectives.

1.2. REPORT PURPOSE

The aims of this report are to:

- Introduce the Existing Development and provide context within the existing landscape;
- Identify the potential environmental impacts associated with the unauthorised activities associated with the Existing Development;
- Identify European sites which lie within the EZoI of the Existing Development;
- Identify whether any of the impacts associated with the Existing Development, both alone and in combination with other plans or projects, resulted in long standing effects on any of the European sites identified, and hence indicate whether further assessment of those impacts is required or not (i.e., through an Appropriate Assessment); and
- If deemed necessary by the AA screening process, produce an retrospective Natura impact assessment (rNIS) for those European sites upon which LSEs are predicted or for which LSEs could not be excluded based on objective information, both for the Existing Development alone and in combination with other plans or projects, and determine whether they are likely to have had an adverse effect on the integrity of any European site(s).

1.3. CONTRIBUTORS TO THIS REPORT

WSP is the lead consultant in the preparation of the Substitute Consent planning application documentation (including rAA reports and rEIAR), for the Applicant.

Field surveys and reporting was carried out by WSP ecologists, Georgina Walsh (Senior Ecologist), Caolan McCaughan (Consultant Ecologist) and Lisa O'Dowd (Consultant Ecologist). Georgina has five years' experience and Caolan and Lisa both have three. This report has been reviewed by Steven Tooher (Principal Ecologist), who has 9 years' experience preparing AA reports for a range of projects in the Republic of Ireland, including those seeking planning retention via the substitute consent process.

2. EXISTING DEVELOPMENT

2.1. OVERVIEW

The quarry at the Existing Development has been in use since the mid-1940's and has been registered under Section 261 of Planning & Development Act 2000 (Quarry Ref. No. QR39). Subsequent planning permission for continuance of quarrying operations was granted under Planning Reg. Ref. 07/443. The expiry of the Planning Reg. Ref. 07/443 appropriate period was 29 December 2019, therefore, the baseline of this rAAS has been set as that day. The AA 'assessment period' has been established as the period from the 29 December 2019 to the present day.

The Existing Development activities within the application area comprise:

- Continued extraction and processing of blast rock,
- Continued use of stockpile areas,
- Continued export of aggregate offsite,
- Installation of a primary soakaway and overflow soakaway, and used of pump to transport collected waters from the quarry floor to the soakaway(s), and,
- Upgrade of the closed system wheelwash through the addition of a dry grate and the installation of a higher capacity concrete-lined tank.

2.2. DEVELOPMENT LOCATION

The Existing Development is located in the townland of Hempstown Commons, 4 km north of Blessington. It is accessed via a privately-owned laneway connecting to a local road, the L6030, which itself connects to the N81, national road. The Existing Development is bound to the north-east by the Kildare/Wicklow border and is located within an area of historical quarrying. SQL share ownership of the private entrance to the Development with the adjacent landowner, Stresslite Precast Ltd.

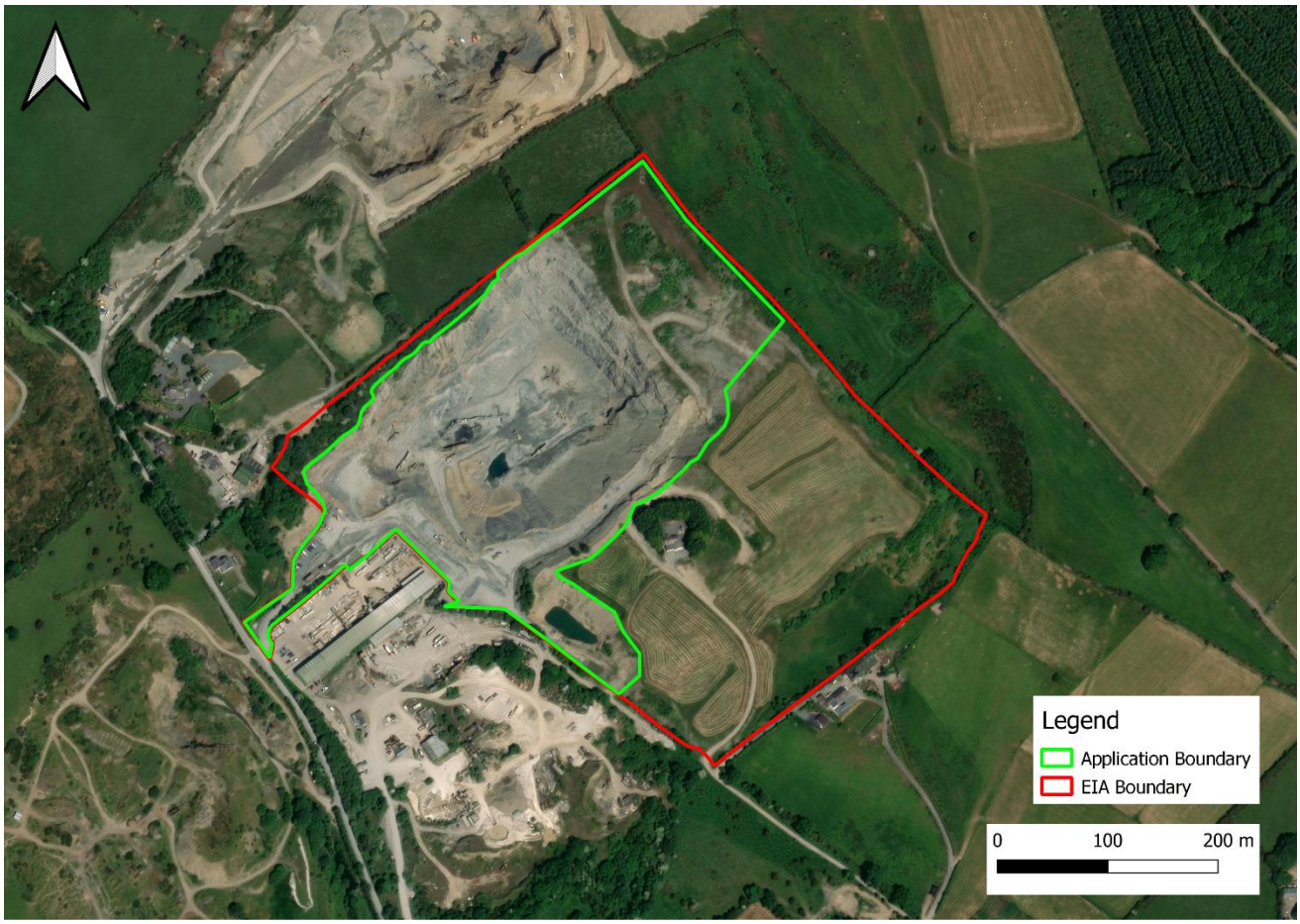

Figure 2-1 - Development Location showing Application Boundary and EIA Boundary

2.2.1. DESCRIPTION OF THE EXISTING DEVELOPMENT

Substantial information has been incorporated into this report from disciplines other than ecology, as they are relevant to discussions that occur later in the report. Occasional reference is made to the relevant chapters in the Remedial Environmental Impact Assessment Report (rEIAR – WSP, 2024) and information considered pertinent to the Appropriate Assessment process is summarised in the main text body of this report. Ecological surveys were conducted to inform the rEIAR, and therefore it is used as the location reference for this rAA (Figure 2-1).

The current quarry void is centrally located within the EIA unit (Figure 2-1). Stockpiles are located to the southwest and west of the quarry void space. At the south-west of the current quarry area is the weighbridge and weighbridge office, wheelwash and associated tank and borehole, and staff private vehicle and visitor parking area. The Existing Development entrance is located further west. The location of mobile plant has varied over the assessment period (see Figure 2-2 **to** Figure 2-5**)**.

2.2.1.1. Changes in Quarry Area

The quarry area and surrounding land is presented as aerial imagery in Figure 2-2 to Figure 2-5, with the outline of the quarry void depicted in accordance with changes in area between 2020 and 2024. Approximate areas of change have been calculated below. These have occurred within the Substitute Consent Application Boundary.

Between June 2020 and March 2022 the quarried area increased by approximately 0.4 ha. This increase in area is associated with expansion to the south east and south west of the existing quarry. Between March 2022 and September 2023 the quarried area mainly steady as expansion to the north east of the existing quarry involved the removal of an existing bench located on north east face of the quarry.

Between September 2023 and October 2024 extraction did not significantly alter the existing quarried area extents. The current quarry extent is approximately 5.1 ha.

The figures below show the approximate active pit extents over the assessment period of extractive site use. Please see Site Layout plans submitted as part of substitute consent application (planning drawing pack) for the quarry that reflect baseline and current site conditions.

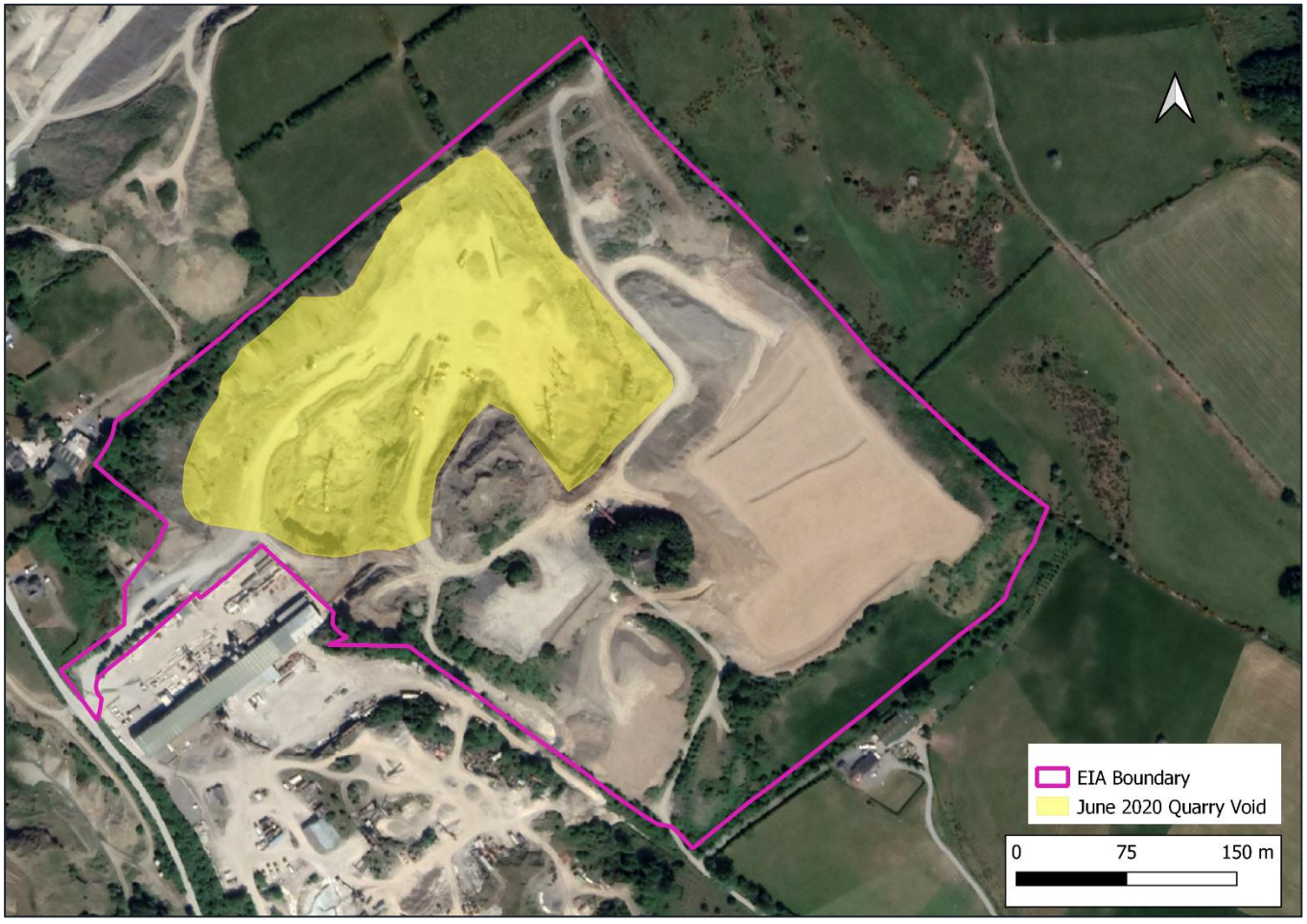

Figure 2-2 - Quarry area during June 2020 from Google Earth Imagery

Figure 2-3 - Quarry area during March 2022 from Google Earth Imagery

Figure 2-4 - Quarry Area During September 2023 from Drone Survey

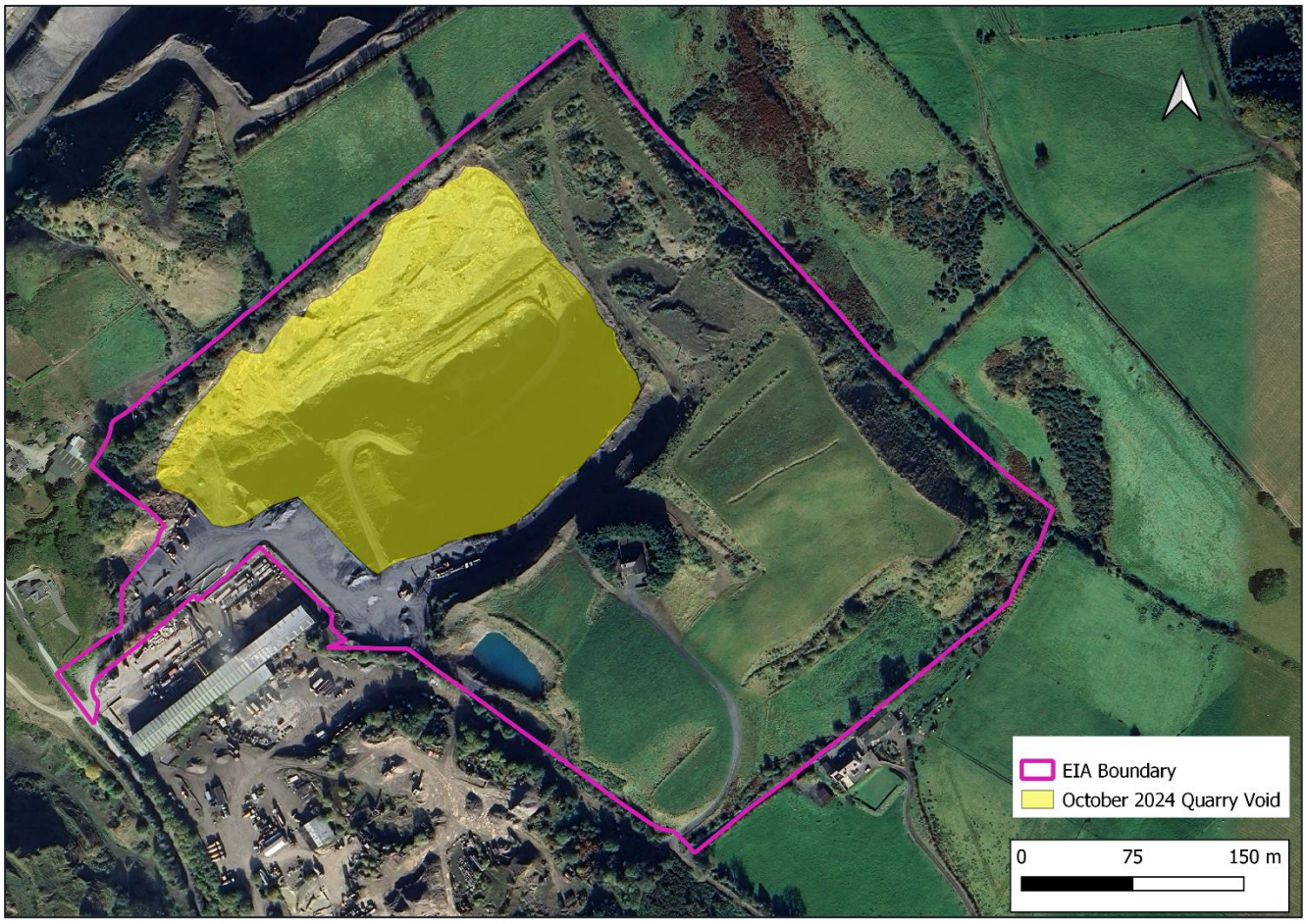

Figure 2-5 - Quarry area during October 2024 from Google Earth Imagery

The quarry has been in use since the mid 1940's and has been formally registered under Section 261, Planning & Development Act 2000 (Quarry Ref. No. QR 39) and subsequent planning permission for continuance of quarrying operations was granted under Planning Reg. Ref. 07/443 ABP PL09253338. The Existing Development comprises lands which are currently used for quarrying activities.

The lands surrounding the Existing Development can largely be characterised as rural in nature, with land uses in the area being agricultural, industrial, forestry and single-house residential. In this way, the immediate character of the lands is rural in nature with low density, one off roadside housing and agricultural activities. Land uses in the area have remained consistent during the assessment period (29 December 2019 to present).

The closest European Site to the proposed development is Red Bog SAC (Site Code: 000397) which is located ca. 1.4km to the south-west of the Existing Development.

2.2.1.2. Water Requirements and Management

The information contained in this section has been adapted from Chapter 6 (Water) of the rEIAR – submitted separately.

The locations of the quarry sump and associated pump, pipeline, primary soakaway and overflow soakaway are shown in **Figure 2-6** below. Collected waters in the quarry void space are pumped to

the primary soakaway in order to maintain dry working conditions on the quarry floor. A drain allows water to overflow from the primary soakaway to the overflow soakway, if required.

Both soakaways are dug down through the sand and gravels into the bedrock. It is understood that the connection between the soakaways is installed within the bedrock.

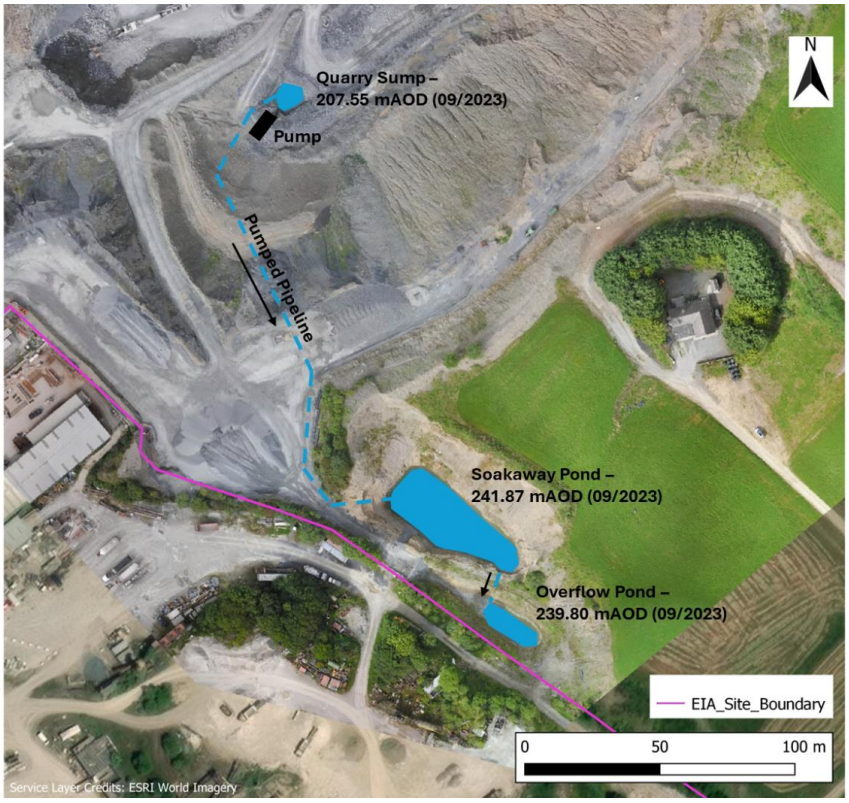

Figure 2-6 - Layout of September 2024 dewatering and discharge system (on September 2023 Aerial)

Water is periodically taken from the abstraction borehole (labelled ‘wheelwash’ in Figure 2-7) to top up the closed-system wheelwash recycling tank, and the onsite bowser, when required. This infrequent use is supported by the wheelwash borehole water levels not reflecting any obvious or sustained drawdown.

There is no surface water discharge from the Site.

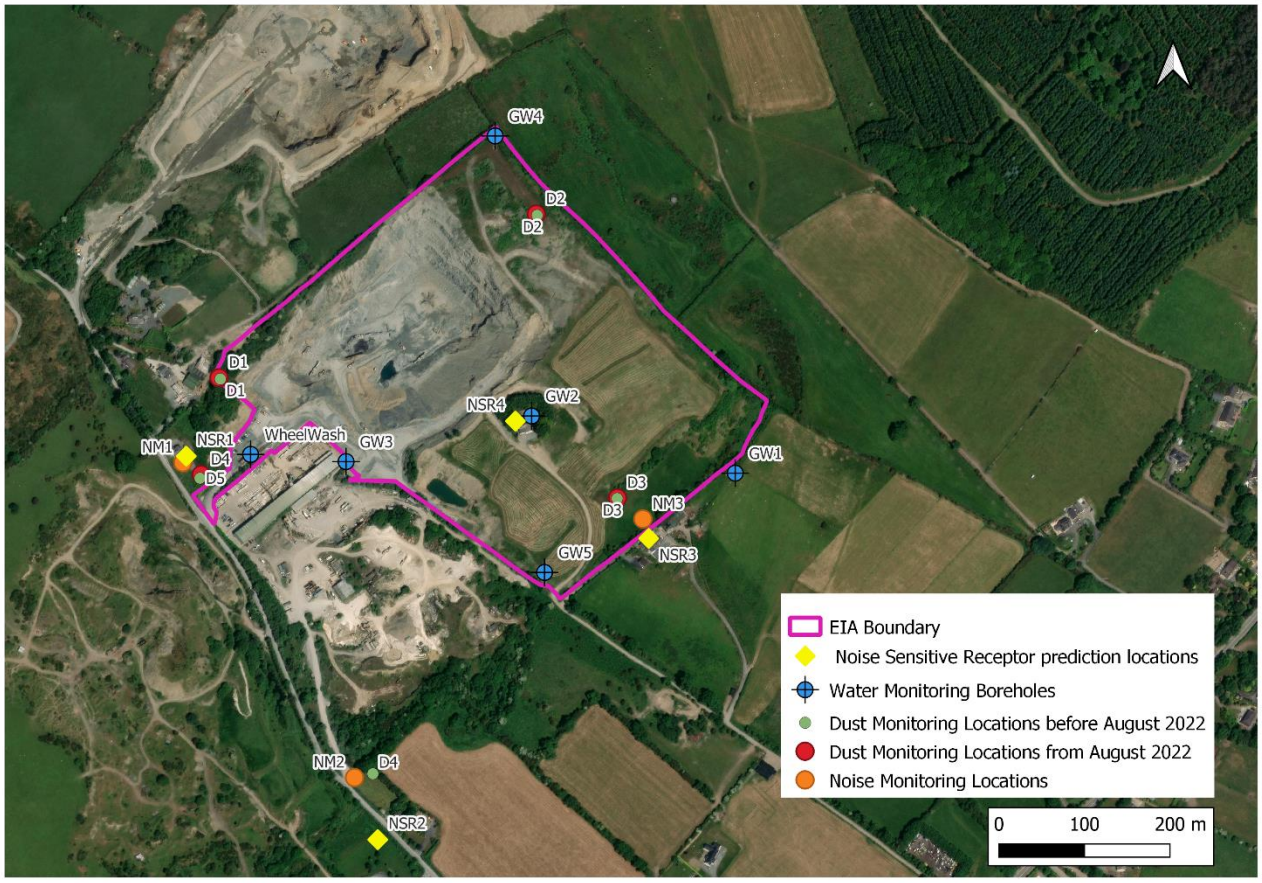

Figure 2-7 – Locations of monitoring stations for groundwater, dust, and noise.

2.2.2. GROUNDWATER – HYDROGEOLOGY

2.2.2.1. Local Aquifers and Their Properties

Based on a review of borehole logs, Development conditions and published information, it is understood that one aquifer unit underlies the Existing Development, a bedrock aquifer, the Pollaphuca Formation, is classified as a 'Pl' poor aquifer, described as "generally unproductive except for local zones". The bedrock to the immediate north and west of the Existing Development is classified as a 'Pu' poor aquifer, which is described as "generally unproductive" without the localised zones of increased permeability / water bearing potential of the Pollaphuca Formation (Figure 2-8).

The sands and gravels underlying the footprint of the Existing Development (where present) are not designated as an aquifer due to the thin nature of the deposits (<10 m thickness). The Blessington Gravels, classified as a locally important sand and gravel aquifer are not mapped beneath the Existing Development; they are mapped 908 m south of the Existing Development at their closest (Figure 2-8). Borehole data indicated that the sands and gravels beneath the Existing Development are between 4.2 m and 9 m thick and are therefore unlikely to support the vertical saturated thickness of 5 m, which would designate them as an aquifer.

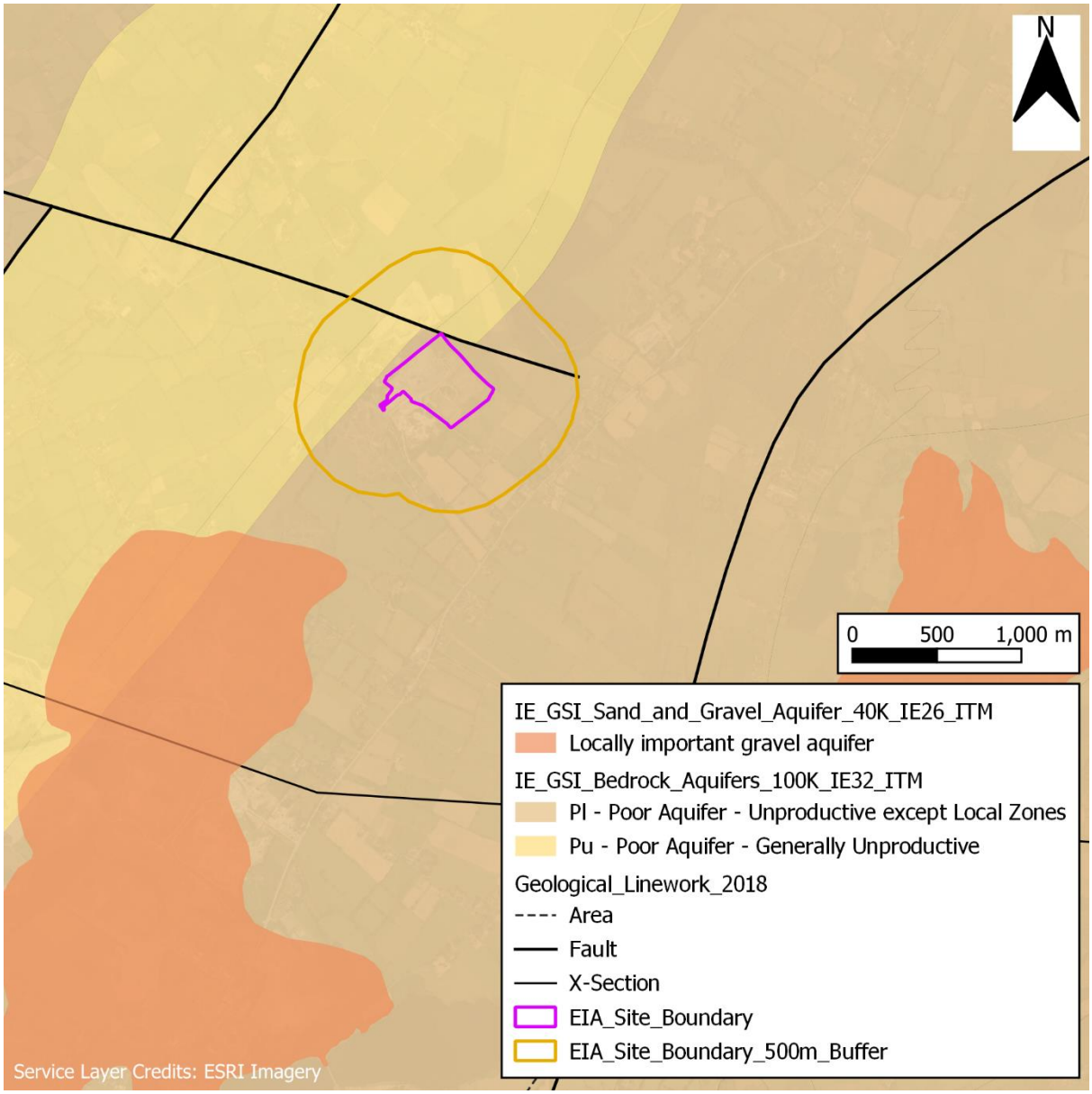

Figure 2-8 - Aquifer Designation Map (GSI, 2023)

2.2.3. GROUNDWATER ELEVATION

Regular groundwater monitoring has been carried out throughout the assessment period at 5 no. groundwater monitoring wells installed on, or in close proximity to, lands in the control of Shillelagh Quarries Limited. These wells are located so to provide representative data to characterise groundwater conditions across the Existing Development. Groundwater monitoring has been carried out at the abstraction borehole since 2019. The monitoring locations are presented in **Figure 2-7**.

The depth of the water strikes recorded in GW4 and GW5 indicate that the main aquifer beneath the Existing Development is within the bedrock rather than the superficial sand and gravels.

2.2.3.1. 2020-2024 Groundwater Elevations

Manual groundwater elevations in Metres Above Ordnance Datum (mAOD) over the review period are displayed in **Figure 2-11** for the monitoring wells shown in **Figure 2-7**. There are noticeable gaps in the recording frequency of water levels. Between October 2020 and February 2022, which are understood to be in relation to Covid-19 movement restrictions.

Water levels remain relatively stable throughout the review period, which is reflective of the locally productive and isolated nature of the groundwater within fractures and seams of the bedrock greywacke and shale. There are small water level rises noted in all monitoring wells in response to rainfall events. In response to the rainfall event in July 2023 of 179.3 mm, water levels rose between 1.1 m (GW5) and 3.1 m (GW4). GW5 is the southernmost well and GW4 is the northernmost well at the Site. It is understood that the superficial sand and gravels are thinnest at GW4 and thickest at GW5, moving downslope into the valley. A thinner layer of sand and gravel therefore results in a flashy response with direct rainfall recharge (GW4) to the bedrock aquifer. A thicker layer of sand and gravel (GW5) appears to result in a more muted recharge to the underlying bedrock aquifer, with more recharge being stored in the superficial deposits. It is likely that clay or silt within the sand and gravel unit helps to retain the meteoric recharge and inhibit vertical recharge to the underlying bedrock.

There is some indication of a decline in groundwater levels in GW2, GW3, GW4 and GW5 between October 2023 and October 2024. Rainfall data indicates that there weren't any months with totals over 120 mm during this period. Prior to the period there were three months with rainfall totals over 160 mm (July to October 2023). The drier than normal period (October 2023 and October 2024) could be responsible for the consistent water level decline across the monitoring wells.

The groundwater elevations in GW4 are approximately 15 m above the first water strike elevation observed with drilling. This indicates that the groundwater within the shale bedrock (in GW4) is under pressure within isolated fractures, which supports the aquifer description of there being local productive zones.

Groundwater contours show movement is from the northwest of the Existing Development to the south/south-east (**Figure 2-9** and **Figure 2-10**).

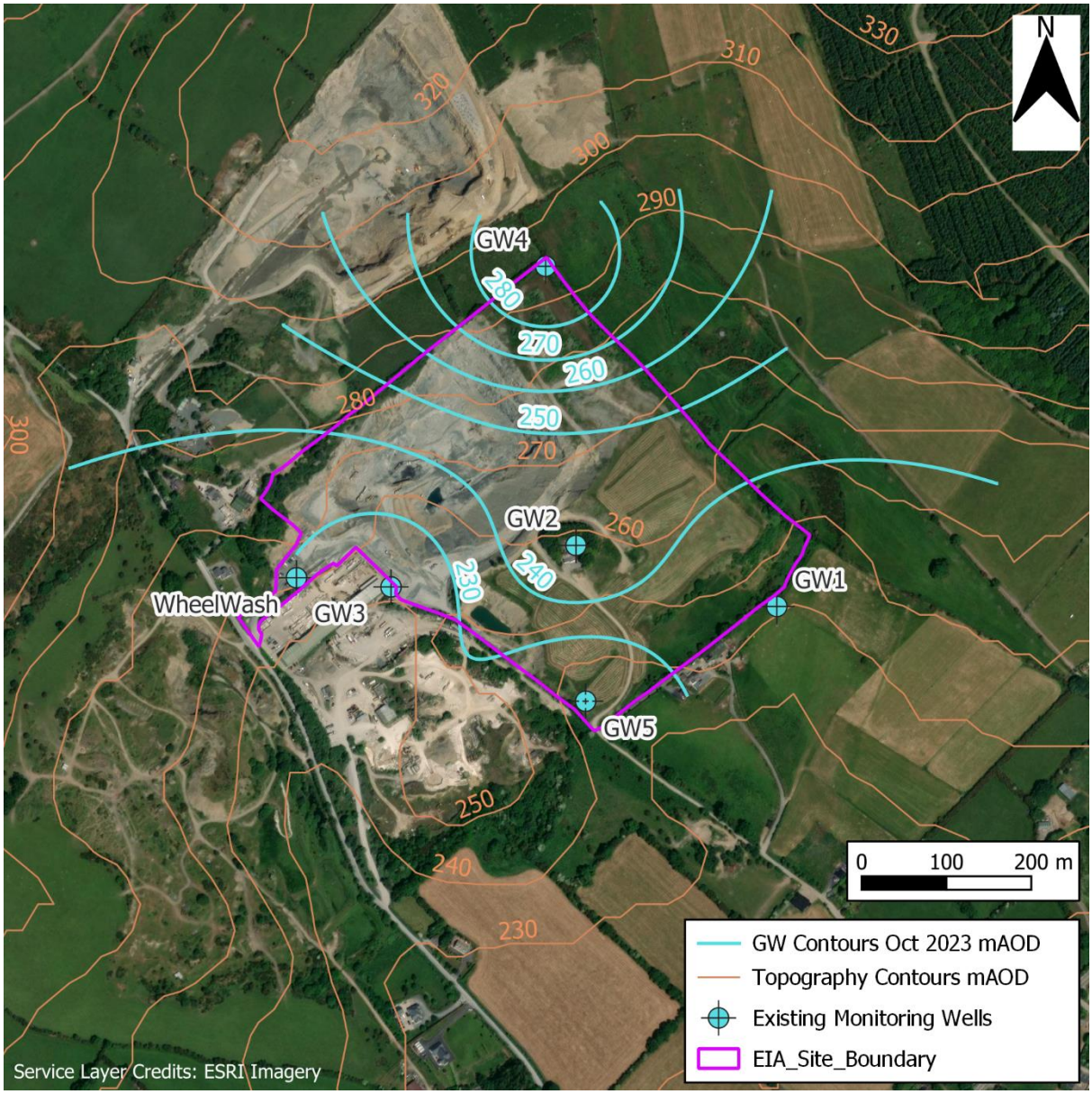

Figure 2-9 - Groundwater Contours October 2023 with Aerial and Topography

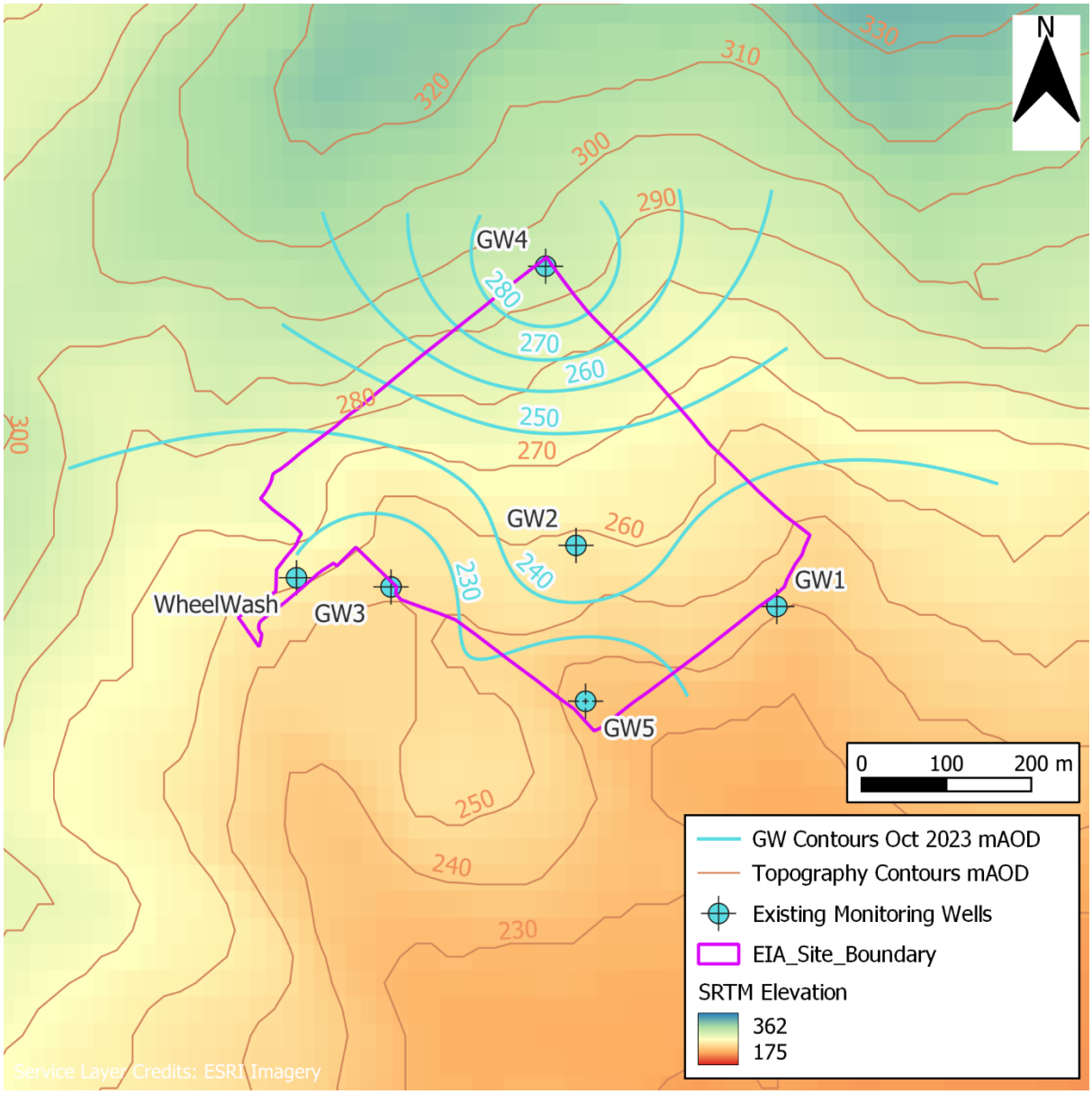

Figure 2-10 - Groundwater Contours October 2023 with Topography

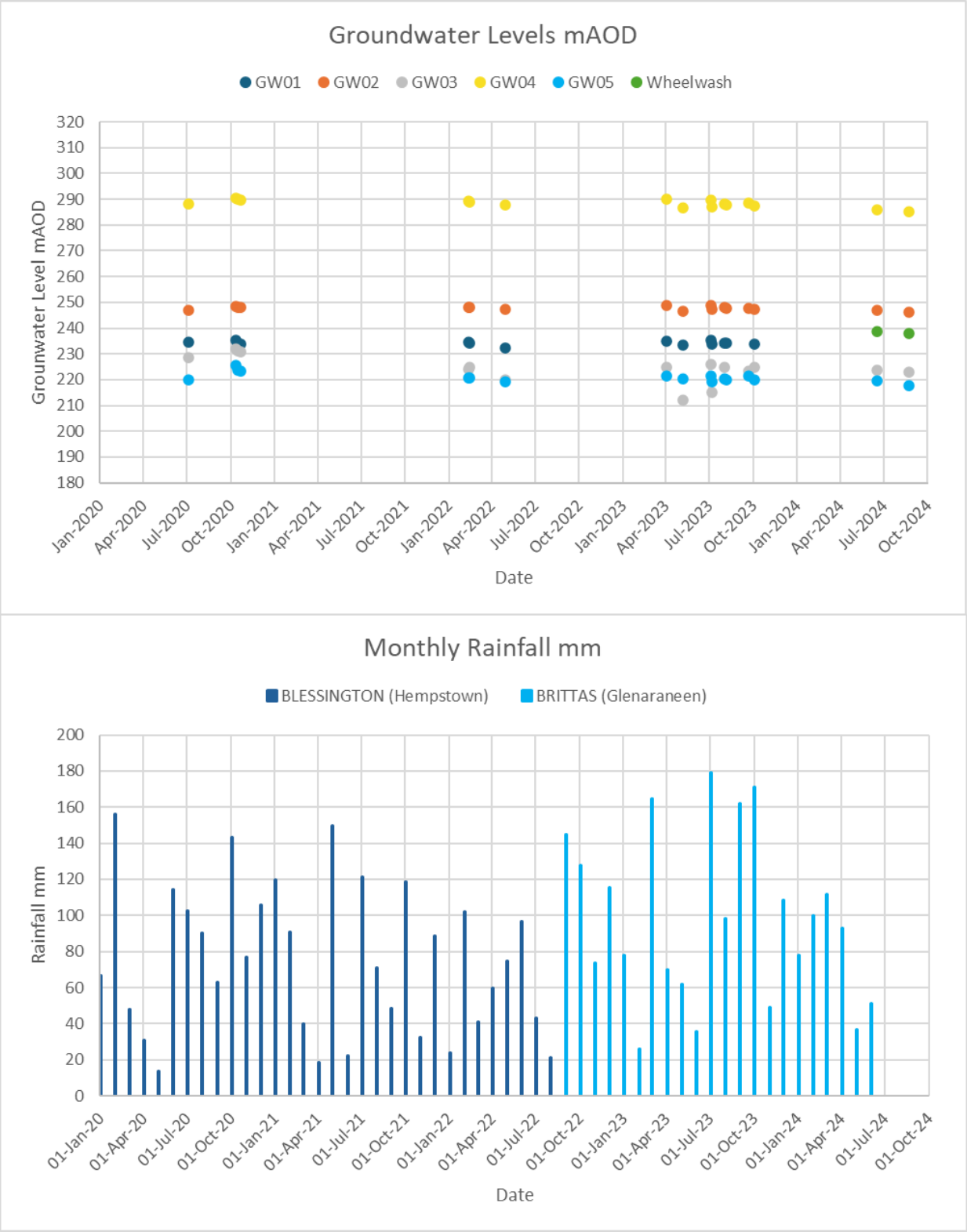

Figure 2-11 - Groundwater Elevations Over Period 2020-2024

2.2.4. GROUNDWATER QUALITY

Groundwater sampling indicated no sustained exceedances of groundwater threshold values, except barium, which is naturally-occurring. Occasional exceedances in nitrate were recorded, but these have been ascribed to agricultural processes on adjacent lands.

2.2.5. DUST MONITORING

Chapter 7 of the rEIAR concludes that significant dust emissions did not occur as a result of activities at the Existing Development during the assessment period. In the context of AA, the below statement from IAQM[1] (2016) is pertinent to this Site.

"If there are no relevant receptors within 1km of the operations, then a detailed dust assessment can be screened out, irrespective of the nature, size and operation of the site, and any resulting effects are likely to be 'not significant'."

2.2.6. NOISE MONITORING

The noise impact assessment, as described in Chapter 9 of the rEIAR, assessed the potential noise emissions based on noise modelling of two different scenarios, which were based on baseline noise monitoring results from 2020 (Scenario 1) and on results from 2024 (Scenario 2). Impacts are assessed on 4 noise-sensitive receptors (NSRs) that surround the existing quarry. Modelled noise emissions are compared with the daytime noise limit of 55 dB. This limit is set by the Environmental Noise Regulations (S.I. 140/2006) and incorporated into Kildare County Council's Third Noise Action Plan 2019 – 2023, and the Draft Noise Action Plan 2024-2028[2].

In both scenarios, it was found that modelled noise emissions at all 4 NSRs were below the daytime noise limit, and levels were similar in both scenarios. It was concluded that there were no significant impacts arising from noise emissions during the assessment period, and for which no mitigation was required.

It is noted that the 55 dB threshold is based primarily on impacts to humans, and is an indicator of optimal, quiet conditions. Nonetheless, the Waterbird Disturbance Mitigation Toolkit (Cutts *et al.*, 2013) acknowledges that noise emissions below 55 dB are unlikely to cause a response in waterbirds. Considering this and considering the similar modelled emission levels from both scenarios, it is concluded that noise emissions during the assessment period did not change in any meaningful way so as to be considered significant in an ecological context.

2.2.7. VIBRATION MONITORING

The vibration impact assessment (Chapter 9 of the rEIAR) examined emissions in 2020, 2021, 2022, 2023 and 2024 in relation to set limits for peak particle velocity (PPV) and air overpressure (linear decibels – dB(Lin). All measurements returned results indicating that limits had not been exceeded for either parameter.

In this context, it is interpreted that there has been no increase in vibration from the works at the Application Site during the assessment period (i.e. baseline conditions remained the same as they were prior to the assessment period).

[1] Institute of Air Quality Management
[2] https://consult.kildarecoco.ie/en/consultation/draft-noise-action-plan-2024-2028-kildare-county-council (accessed 12.12.2024)

3. SUPPORTING INFORMATION

3.1. STAGES OF APPROPRIATE ASSESSMENT

An AA is a multi-stage process as described below. This report covers Stage 1 of the AA, which involve screening for LSEs on European sites (Stage 1). Stage 2 (Appropriate Assessment) involves the assessment of those LSEs to determine if they will adversely affect the integrity of any European sites. Appropriate Assessment is carried out by the Competent Authority and is informed by the information contained in a Natura Impact Statement (NIS). A brief description of the legislative context is also provided in this section.

Guidance on Article 6 of the Habitats Directive (European Commission, EC 2018 and EC 2021) sets out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment.

- Stage 1 (AA Screening) - The purpose of the screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in-combination with other plans or projects, could have significant effects on a European site in view of the Existing Development's conservation objectives. There is no necessity to establish such an effect; it is merely necessary for the Competent Authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that have no appreciable effect on a European site may be excluded. The threshold at this first stage is a very low one and operates as a trigger to determine whether a Stage Two AA must be undertaken by the Competent Authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required.
- Stage 2 (NIS to inform AA) - A Stage Two AA is a focused and detailed examination, analysis and evaluation carried out by the Competent Authority of the implications of the plan or project, alone and in-combination with other plans and projects, on the integrity of a European sites in view of that site's conservation objectives. Case law has established that such an AA, to be lawfully conducted, in summary:

  1) must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;

  2) must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and

  3) may only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where the Competent Authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If

the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three and, if necessary, stage four.

- Stage 3 - This stage of the potential process arises where adverse effects on the integrity of a European site cannot be excluded and examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site.
- Stage 4 - Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the Existing Development is necessary for imperative reasons of overriding public interest and, if so, of the compensatory measures needed to maintain the overall coherence of the network of European sites.

3.2. LEGISLATIVE CONTEXT

3.2.1. EUROPEAN UNION HABITATS DIRECTIVE

Article 6(3) of the Habitats Directive sets out the need for AA of plans or projects which adversely affect the integrity of a European site (SPAs, SACs and candidate SACs (cSACs)) based on their proximity, or connectivity to the Proposed Development):

- Any plan or project not directly connected with or necessary to the management of a European site, but which is likely to have a significant effect upon such a site, either individually or in combination with other plans or projects, shall undergo an AA to determine its implications for the Existing Development. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the Existing Development concerned (Article 6.3).

3.2.2. PLANNING AND DEVELOPMENT ACT

The Habitats Directive was transposed into Irish law in a planning context, through Part XAB of the Planning and Development Acts 2000 (as amended). This sets out the circumstances under which an AA is required, the stages of that assessment which must be undertaken, as summarised above, and the responsibilities of the Competent Authority in considering whether to approve consent for proposed plans or projects.

Section 177U(1) of the Act states that:

A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

Section 177(4) of the Act states that:

The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

Where likely significant effects upon a European site are predicted, or cannot be ruled out, it is the responsibility of the Competent Authority to undertake an AA under Article 6(3) of the Habitats Directive, informed through an NIS, to determine whether the proposed plan in combination with any

other plan or project would adversely affect the integrity of a European site in light of its Conservation Objectives.

Where an AA concludes there will be adverse effects on the integrity of a European site, the Competent Authority may only agree to the plan or project if:

- It is evidenced that there are no alternative solutions (Stage 3); and
- There are imperative reasons of overriding public interest for the advancement of the project (Stage 4), and appropriate compensation measures have been identified.

In October 2024 the Planning and Development Act 2024

3.2.2.1. Guidance

This AA screening report and NIS has been informed by the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government (DoEHLG). Dublin. (DoEHLG, 2009).
- Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission, 2002) Communication from the Commission on the Precautionary Principle.
- CIEEM (2018) Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2, Winchester.
- European Commission (2002) Assessment of plans and projects significantly affecting European sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission & D.G. Environment (2013) Interpretation Manual of European Union Habitats EUR28.Nature ENV B. Fossitt, J. (2000) A Guide to Habitats in Ireland. Heritage Council.
- European Commission (2019) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- National Roads Authority (NRA) (2009) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes.
- NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS Report. Edited by Deirdre Lynn and Fionnuala O'Neill.
- Office of the Planning Regulator (OPR) (2021) Practice Note PN01: AA Screening for Development Management.
- Smith, G. F. et al. (2011) Best Practice and Guidance for Habitat Surveying and Mapping. Heritage Council.
- Scottish Natural Heritage (SNH) (2016). Assessing connectivity with Special Protection Areas (SPAs). Version 3 - June 2016.

3.2.2.2. Note on Mitigation

It should be noted that this report has taken account of the 2017 European Court of Justice (CJEU) ruling (C-323/17 - People Over Wind and Peter Sweetman v Coillte): "*Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an AA of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site*."

3.3. POTENTIAL IMPACTS

For activities associated with the Existing Development, potential impacts and potential effects[3] have been identified in **Table 3-1** alongside the ZoI for each of these effects.

Table 3-1 - Potential Impacts

Activity	Potential Impact	Potential Effect	Zone of Influence (ZoI)
Habitat Loss			
Extraction of rock at the Existing Development using a variety of methods, including drilling & blasting and rock- breaking.	Direct loss (through excavation works, damage from access) or indirect loss (changes to hydrology) of European sites or functionally linked habitat.	Reduction in area or reduction in quality of available designated or functionally linked habitat, resulting in a reduced carrying capacity for qualifying species e.g. loss of breeding habitat/places of shelter, loss of foraging habitat. Loss of plant species within an area for which these are fundamental to the structure/function of the site.	Direct or indirect loss or damage to habitat within a European Site or functionally linked habitat supporting qualifying features. The ZoI for indirect effects via surface water is any habitat located downstream of watercourses that cross or are directly adjacent to the Site.
Mobile crushing, and screening of the rock into various aggregate classes. Storage of aggregates.	Production of large amounts of dust and noise for the Development. Direct Loss of functionally linked habitat.	Damage to qualifying habitat features of European sites or functionally linked habitats. Disturbance to qualifying species of European sites through noises exceeding 55dB. Damage to European sites or forage area for	Any qualifying habitats found within 1km of the Development *See section 0* Any foraging habitat in surrounding area of the Development used by qualifying species where noise from the Development exceeds 55dB.

[3] 'Impacts' and 'effects' as per CIEEM (2018) are distinct terms, in that an 'impact' is an action resulting in changes to an ecological feature. The 'effect' is the consequence of the impact.

Activity	Potential Impact	Potential Effect	Zone of Influence (ZoI)
		qualifying species of European sites.	Any areas of European sites or foraging habitat within the development used by qualifying species.
The continuation of loading material onto trucks for sale and distribution.	Production of large amounts of dust and noise for the Development. Direct loss (through damage from access).	Damage to qualifying habitat features of European sites or functionally linked habitats. Disturbance to qualifying species of European sites through noises exceeding 55dB. Reduction in area or reduction in quality of available designated or functionally linked habitat, resulting in a reduced carrying capacity for qualifying species e.g. loss of breeding habitat/places of shelter, loss of foraging habitat. Loss of plant species within an area for which these are fundamental to the structure/function of the site.	Any qualifying habitats found within 1km of the Development. Any foraging habitat in surrounding area of the Development used by qualifying species where noise from the Development exceeds 55dB. Direct or indirect loss or damage to habitat within a European Site or functionally linked habitat supporting qualifying features. The ZoI for indirect effects via surface water is any habitat located downstream of watercourses that cross or are directly adjacent to the Site.

4. APPROPRIATE ASSESSMENT SCREENING (STAGE 1)

4.1. IDENTIFICATION OF RELEVANT EUROPEAN SITES

The OPR (2021) recommend that the scope of AA Screening should consider the following:

- Any European sites within or adjacent to the plan or project area;
- Any European sites within the likely EZoI, of the plan or project. 15 km is currently the 'default' EZoI for plans, as recommended by DoEHLG (2009), however, the range for projects could be much less, in some cases less than 100 m, but this must be evaluated on a case-by-case basis considering the nature, size and location of the project, as well as the sensitivities of the ecological receptors, and the potential for in combination effects; and
- European sites that are more than 15 km from the plan or project area depending on the likely impacts of the plan or project, and the sensitivities of the ecological receptors, bearing in mind the precautionary principle (European Commission 2021). In the case of sites with water dependent habitats or species, and a plan or project that could affect water quality or quantity, for example, it may be necessary to consider the full extent of the upstream and/or downstream catchment.

For this AA Screening, European sites with the potential to be affected by the Proposed Development were identified based on their proximity, as well as their potential to be connected, either directly (e.g., via watercourses) or indirectly (e.g., whereby associated qualifying species use habitats within, or their proximity to the Existing Development for foraging or roosting habitat (termed 'functionally connected' habitat[4])). The EZoI was set at 20 km for SPAs based on the upper-range commuting distance of pink-footed geese *Anser brachyrhynchus* and greylag geese *Anser anser* (Scottish Natural Heritage, 2016).

Table 4-1 provides details of the Qualifying Interests (QIs)[5] of each of the European sites identified within the EZoI of the Proposed Development, the approximate distance and direction of each European site, and if there is potential connectivity[6]. The locations of these European sites in relation to the Existing Development are shown in **Figure 4-1**.

The potential for groundwater connectivity is assessed initially based on whether the QIs associated with a European site are groundwater dependent. More detailed information on groundwater conditions and connectivity is provided later in the report (**Section 5.1**).

[4] In the context of this report, the term 'functional connectivity' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the Existing Development was designated or classified. Such land is therefore 'connected' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status.

[5] The specific named bird species for which a SPA is selected is called the 'Special Conservation Interests' (SCIs). However, in practice, the common terminology of Qualifying Interests (QI) applies also to SCI (and is used in this document for simplicity) as per OPR, 2021.

[6] Information on designated sites was obtained from freely downloadable datasets from National Park and Wildlife Service (NPWS). Available at: https://www.npws.ie/faq/site-designation

4.1.1. A NOTE ON CONNECTIVITY FOR DUST EMISSIONS

As a point of reference, the Institute of Air Quality Management (IAQM) (2016) Guidance on the Assessment of Mineral Dust Impacts for Planning indicates that significant dust impacts are typically restricted to 100 m of quarrying activities, and any sites beyond 1km are likely to face negligible impacts, regardless of the nature and size of the operation.

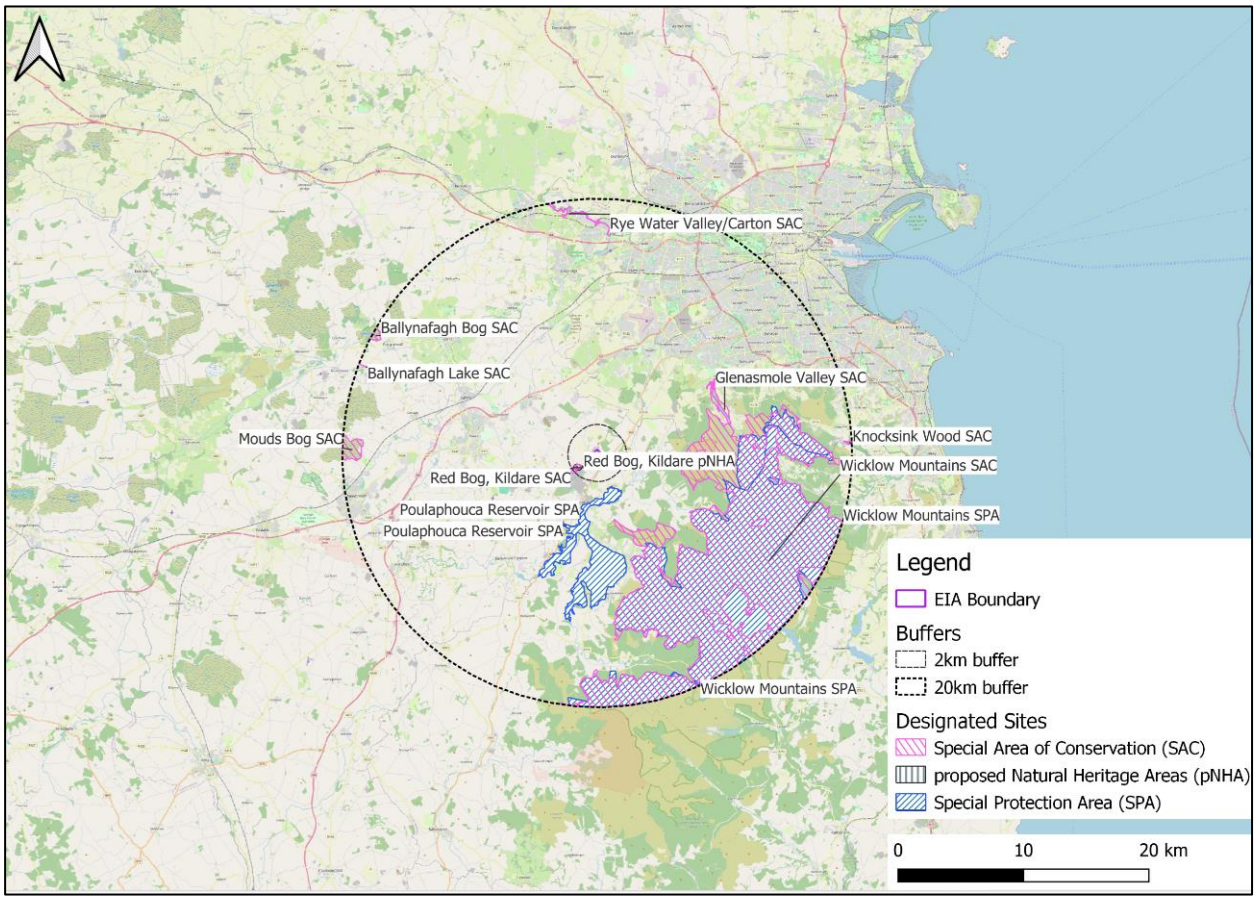

Figure 4-1 - European sites within 2km and 20km of the Existing Development

Table 4-1 - European Sites Within the EZoI

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Red Bog, SAC 000397	1.4km south-west	Per Geological Survey Ireland (GSI) Spatial Resources (2023), the Existing Development and this SAC are **not** situated within the same groundwater body (European Code: IE_EA_G_085). According to GSI, Red Bog SAC is a Groundwater-Dependent Terrestrial Ecosystem (GWDTE) within this groundwater body (Geological Survey Ireland, 2023). More detail about the specific groundwater conditions surrounding the Existing Development are presented later in the report. At this stage, it is concluded that there is **potential groundwater connectivity** between this SAC and the Existing Development. The SAC boundary is more than 1km from the nearest source of dust emissions, which is outside the typical range in which significant impacts are likely to occur (IAQM, 2016). Further detail on the likely impacts of dust emissions from the Existing Development on this SAC are discussed later in the report. At this stage it is concluded that there is **no potential connectivity** for dust emissions between this SAC and the Existing Development.	Transition mires [7140].
Poulaphouca Reservoir SPA 004063	2.6km southeast	There is **no hydrological connectivity** between this SPA and the Existing Development. The SPA is designated for its greylag goose *Anser anser* population and wintering lesser black-backed gull *Larus fuscus*. The SPA provides a main roost for the geese with feeding occurring on the improved grassland outside the SPA (NPWS, 2014). Such improved grassland is present around the periphery of the Application boundary. The Department of Agriculture, Food and the Marine (DAFM) (2020) advises that projects more than 1 km from an SPA can be screened out for impacts on foraging lesser black-backed gulls on the grounds	Greylag goose [A043]. Lesser black-backed gull [A183].

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		that it is beyond its core foraging range. As per SNH (2016), the core foraging range for greylag geese is accepted as being 20 km. There is **no functional connectivity** for lesser black-backed gull. Given that the Existing Development is within the core foraging range of greylag geese and given the presence of suitable foraging habitat on adjacent lands**, there is possible functional connectivity** with this SPA for greylag geese, and this will be assessed further.	
Wicklow Mountains SAC 002122	5.2km east	There is **no hydrological connectivity** between this SAC and the Existing Development. This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Existing Development.	Oligotrophic waters containing. very few minerals of sandy plains Littorelletalia uniflorae [3110]. Natural dystrophic lakes and ponds [3160]. Northern Atlantic wet heaths with Erica tetralix [4010]. European dry heaths [4030]. Alpine and Boreal heaths [4060]. Calaminarian grasslands of the Violetalia calaminariae [6130]. Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]. Blanket bogs (* if active bog). [7130]. Siliceous scree of the montane to snow levels Androsacetalia alpinae and Galeopsietalia ladani [8110]. Calcareous rocky slopes with chasmophytic vegetation [8210].

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Wicklow Mountains SPA 004040	7.9km east	There is **no hydrological connectivity** between this SPA and the Existing Development. According to SNH (2016), Merlin nests are separated by a mean distance of ca. 500 m, and a maximum of 1.5 km. Peregrine falcon nests are separated by a mean distance of ca. 3 km, and a maximum of 6.5 km. In a study of Co. Wicklow peregrine populations, Burke et al. (2015) found that the mean distance between nests was 5.7km. The Existing Development is therefore out of the range in which SPA populations would nest at the Existing Development. There is no functional connectivity for nesting merlins or peregrine falcons. According to SNH (2016), the core foraging range for merlin is 5 km, and is 2 km for peregrine falcon. Peregrines have however been recorded foraging at a maximum of 18 km from their nest. The Existing Development is outside the range in which SPA populations of peregrine falcon may forage and defend a nesting territory. As such, **there is no functional connectivity** for foraging peregrine falcon. There is **no functional connectivity** for foraging merlin.	Merlin [A098]. Peregrine falcon [A103].
Glensamole Valley SAC 001209	9.8km north– east	**No hydrological connectivity.** Petrifying springs are GWDTEs, but this SAC is not in the same groundwater body as the Existing Development. There is no groundwater connectivity. This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Existing Development.	Semi-natural dry grasslands and scrubland facies on calcareous substrates Festuco-Brometalia (*important orchid sites) [6210]. Molinia meadows on calcareous, peaty or clayey-silt-laden soils Molinion caeruleae [6410]. Petrifying springs with tufa formation Cratoneurion [7220].

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Rye Water Valley/Carton SAC (001398)	17.1km north	**No hydrological connectivity.** Due to having no hydrological connectivity with the Existing Development, and the distance between the Existing Developments, it is reasonable to conclude that there is **no functional connectivity** between the SAC and the Existing Development. This is due to whorl snail's main method of colonisation and dispersal being via waterborne transportation.	Petrifying springs with tufa formation Cratoneurion [7220]. Narrow-mouthed whorl snail *Vertigo angustior* [1014]. Desmoulin's Whorl Snail *Vertigo moulinsiana* [1016].
Mouds Bog SAC	18.4km west	**No hydrological connectivity.** This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Existing Development.	Active raised bogs [7110]. Degraded raised bogs still capable of natural regeneration [7120]. Depressions on peat substrates of the *Rhynchosporion* [7150].
Ballynafagh Bog SAC	19.2km northwest	**No hydrological connectivity.** This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Existing Development.	Active raised bogs [7110]. Degraded raised bogs still capable of natural regeneration [7120]. Depressions on peat substrates of the *Rhynchosporion* [7150].
Ballynafagh Lake SAC	19.3km northwest	**No hydrological connectivity.** Alkaline fens are GWDTEs, but this SAC is not in the same groundwater body as the Existing Development. There is no groundwater connectivity. Given that there is no hydrological connectivity and given the distance between the SAC and the Existing Development, there is therefore **no functional connectivity**.	Alkaline fens [7230]. Desmoulin's Whorl Snail *Vertigo moulinsiana* [1016]. Marsh Fritillary *Euphydryas aurinia* [1065].

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Knocksink Wood SAC	19.5km east	**No hydrological connectivity.** This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Existing Development.	Petrifying springs with tufa formation (Cratoneurion) [7220]. Old sessile oak woods with Ilex and *Blechnum* in the British Isles [91A0]. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0].

The Existing Development is considered to be functionally connected to Poulaphouca Reservoir SPA, because of the Existing Development's presence within the foraging range of one of its qualifying species (peregrine falcon and greylag goose respectively) and the presence of suitable foraging habitat on adjacent land.

The Existing Development is not hydrologically, functionally or otherwise connected to any other European sites.

4.2. FIELD SURVEYS

A habitat survey was carried out at the Site by Golder over two days (22nd May and 14th August) in 2019 for the planning application submitted the same year. The objective of the survey was to record the habitats and flora in the area within the Existing Development boundary and adjacent lands, and to detect the presence or likely presence of protected species, and the presence of suitable habitat for those species.

Update surveys were conducted by WSP in the form of multi-disciplinary walkovers (See section 4.2.4) and Ecological walkover surveys (See section 4.2.3) to determine changes from the surveys undertaken by Golder for the 2019 application.

4.2.1.1. Ecological walkover surveys 2024

A high-level ecological walkover survey of the Existing Development was carried out by WSP Consultant Ecologist, Lisa O'Dowd, accompanied by WSP Principal Environmental Consultant, Rhian Llewellyn, on 15th August 2024. Lisa has 3 years' of experience in carrying out a variety of ecological surveys and is classed as 'capable' under CIEEM's competency framework.

The survey area included the area within the Existing Development boundary, and, where accessible, included a 50 m buffer to account for the potential presence of badger setts outside the Existing Development boundary – see **Figure 4-2.** It should be emphasised that the Applicant is applying concurrently for permission to continue extraction, including expansion of the quarry void. This process is separate from the substitute consent process and is outside the scope of this report, which is focused on the area within the substitute consent boundary.

The scope of the surveys included:

- Habitats – in accordance with guidance by Smith et al. (2011) and Fossitt (2000), but with a focus on comparing the habitat assemblage with that reported in the 2019 EIAR (Golder, 2019).
- Protected species:
  - Badger – in accordance with NRA (2009). A search was made for signs of badger activity, which included looking for evidence such as sett holes, footprints, latrines, dung pits, hairs and mammal paths with evidence of use by badgers.
  - Bats – an initial high-level assessment of habitat to determine likelihood that the Existing Development may be used by foraging and/or roosting bats.
- Other species – hedgehog, Irish hare, pygmy shrew and herpetofauna – incidental observations were recorded of any evidence of these species, with guidance from Olsen (2013).
- Birds – incidental observations of birds were made – particularly any in association with waterbodies, or any waterfowl grazing on grassland.

The suitability of habitats for the above-mentioned protected species was also assessed.

4.2.1.2. October 2024

A further high-level walkover survey was carried out on 21st October by Lisa O'Dowd and WSP Graduate Environmental Scientist Lisa Cleary, to cover areas of the study area that were not accessible during the first walkover survey in August 2024.

Much of the data gathered is relevant to EIA but outside the scope of AA. The results of the Existing Development surveys that are presented in this report have been selected based on their relevance to AA – specifically their relevance to the European sites with which the Existing Development has been deemed to have connectivity. Full survey results are included in the rEIAR.

The surveys comprised a habitat and protected species survey, which were carried out in accordance with the following guidance:

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping;
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009); and
- A Guide to Habitats in Ireland (Fossitt, 2000).

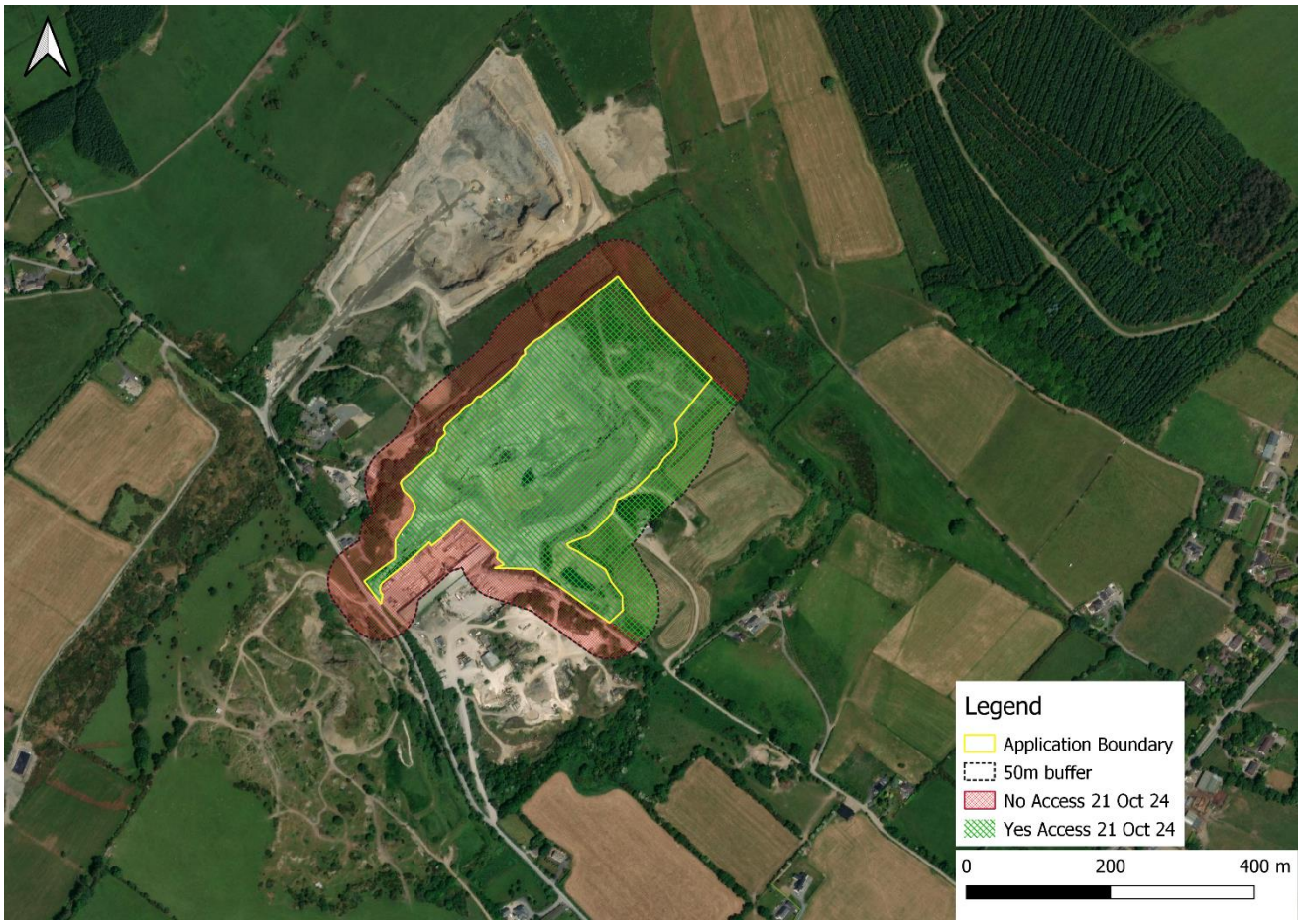

Figure 4-2 - Ecological walkover 2024 survey area

4.3. RESULTS

The following observations are relevant to the rAA process:

The assemblage and extents of habitats onsite were broadly consistent with that observed in 2019. The dominant habitat within the quarry pit was 'ED4 – Active Quarries and Mines' (per Fossitt, 2000), which largely comprised bare rock and soil that was completely devoid of vegetation. Some grasses and ruderal herbs had colonised the steep upper layers of the pit's periphery, as observed in 2019 surveys. Two soakaways were present (classified as 'FL8 – Artificial Lakes and Ponds'), although one of those recorded previously had since been abandoned, and a new one created. The smaller of the two soakaways was found to be partially vegetated.

- Approximately 0.16 ha of improved agricultural grassland has been removed, along with 0.62 ha area of continuous scrub and 0.08ha of scattered trees. Aerial imagery (see Figure 4-3) indicates that excavation occurred between January and October 2023.
- Aside from the above-mentioned loss of habitats, the existing quarry pit has not extended laterally. There has therefore been no loss of any other peripheral habitats.
- Greylag geese were not observed in the quarry pit or in any of the surrounding habitats in the 2019 and 2024 surveys.
- One invasive[7] flora species, cherry laurel *Prunus laurocerasus* was observed during the 2024 survey. Cherry laurel is not a designated invasive species as per SI 477/2011, but is considered a 'high-impact' invasive species by the National Biodiversity Data Centre (NBDC, 2013)[8].
    - Whilst cherry laurel was not recorded in 2019, the hedgerow in which it was recorded was present in 2019, and has not increased in size. It was most likely overlooked in 2019, rather than having been introduced to the Application Site during the assessment period.

4.3.1.1. Limitations

In the 2019 survey, access into some areas at the Application Site periphery was limited due to impenetrable scrub, and health and safety restrictions associated with the active quarry footprint. Additionally, a small field located within the south-east of the Application Site was not accessed in full. As such, an assessment was made from the periphery using binoculars. In the 2024 survey, access was not possible to the northwestern/western boundary due to health and safety concerns, given the boundary is located along a rock face.

Access restrictions are not considered to have had any impact on the ability to carry out a robust screening for AA, since the Application Site does not overlap with an SAC designated for habitats, and it was not necessary to gather detailed data in this regard. There was no restriction on the ability to assess the potential for functional or hydrological/hydrogeological connectivity.

[7] In this report, the term 'invasive species' refers primarily to those listed in the Third Schedule of the Birds and Natural Habitats Regulations (S.I. 477/2011) as amended. Some non-native species are known to cause substantial ecological damage but are not included in S.I. 477/2011. Whether or not these are likely to cause significant effects on a European site is determined on a case-by-case basis, depending on the species and the sensitivity of the European site in question.

[8] NBDC, 2013. *Ireland's Invasive and Non-Native Species - Trends in Introductions*, Waterford: NBDC.

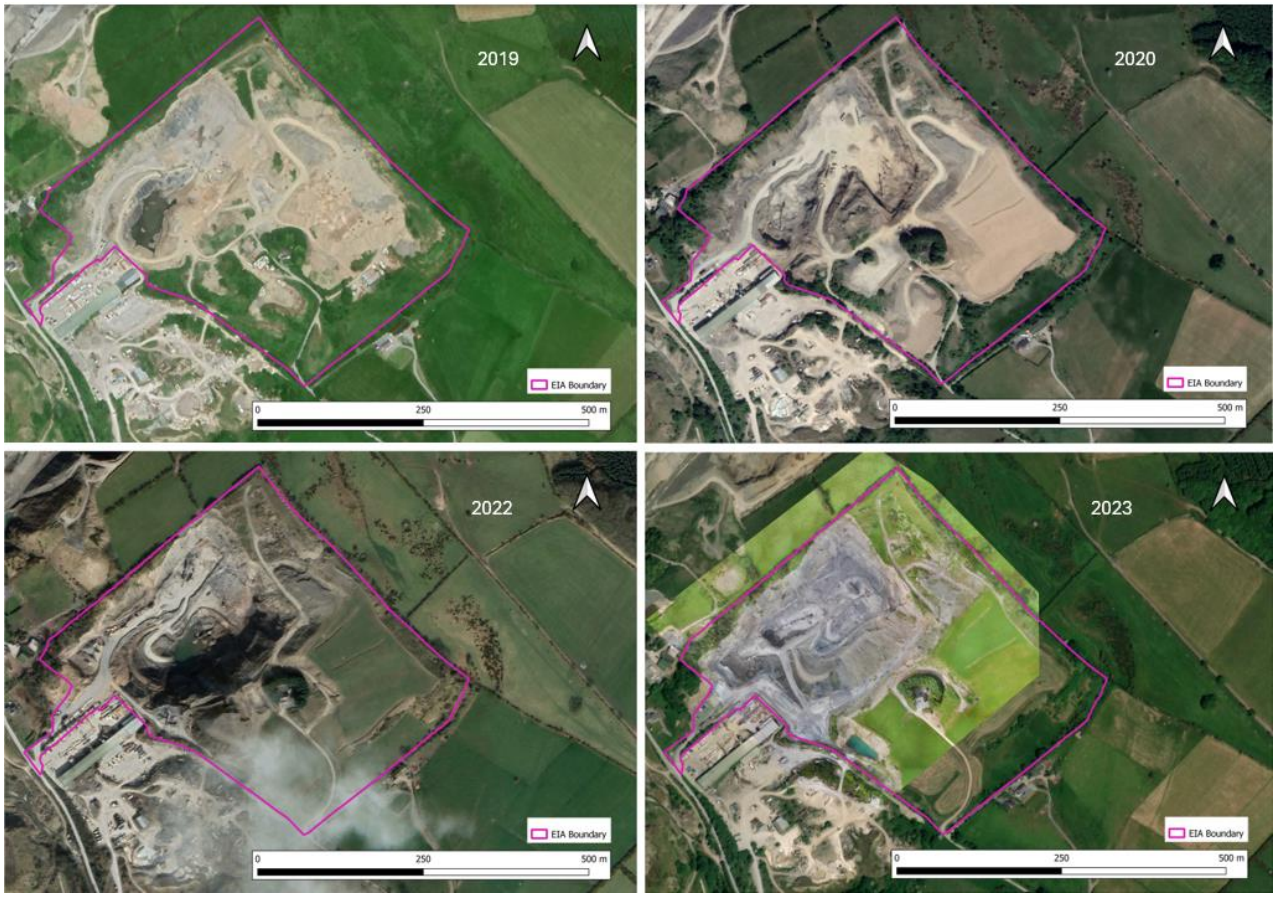

Figure 4-3 - Development aerials in June 2019, June 2020, March 2022 and September 2023 (Images from Google Earth)

5. ASSESSMENT OF LIKELIHOOD OF SIGNIFICANT EFFECTS

This section identifies whether the impacts associated with the Existing Development are likely to give rise to significant effects upon any of the European sites identified in the previous section. Details of the Existing Development used to inform the assessment of LSEs are provided in **Section 2.** As noted in **Section 3.2.7**, mitigation included in this document was only considered once the project passed the Screening Stage. Any measures intended to avoid or reduce adverse effects of the Existing Development on European sites (i.e. "mitigation measures") or best practice measures were not considered during the Screening Stage.

For each of the European sites identified above in **Table 4-1**, a screening exercise has been undertaken whereby each site has been considered in relation to potential impacts and potential effects from the Existing Development. A screening conclusion is then presented for each European site, identifying if there are any LSEs from the Existing Development (**Table 5-3**).

ARTICLE 6(3) STATEMENT – MANAGEMENT OF EUROPEAN SITES

Considering the nature of the activities concerned, and location of the Existing Development, it is determined that it is not directly connected with or necessary to the management of a European site and is therefore **not** exempt from the requirements of the AA process.

5.1. CONSIDERATION OF ENVIRONMENTAL EFFECTS – RATIONALE

The screening assessment is based on the rationale set out below, in relation to surface water, groundwater, dust and noise emissions, habitat loss and the spread of invasive species, and the resulting likelihood of significant effects.

5.1.1. WATER – SURFACE AND GROUND

In accordance with the surface water management arrangements at the Application Site (see Section 2.2.1.2) and the nature of the topography at the Site, collected waters on the quarry floor are pumped to the primary soakaway located at the southern end of the Site. Any overflow flows into the smaller overflow soakaway. There are no surface water discharges from the Application Site.

Sampling at the primary soakaway has shown elevated nitrate, nitrite and arsenic concentrations. The sources of nitrate and nitrite are considered likely to have resulted from agricultural runoff from adjacent agricultural land. Elevated arsenic concentrations are interpreted by WSP to be naturally-occurring, rather than related to works at the Application Site during the assessment period.

Groundwater sampling indicated no sustained exceedances of groundwater threshold values, except barium, which is naturally-occurring. Occasional exceedances in nitrate were recorded, but these have been ascribed to agricultural processes on adjacent lands.

Overall it has been concluded that no significant impacts on surface or groundwater quality have arisen as a result of works during the assessment period.

5.1.1.1. Hydrogeological Connectivity

Poulaphouca Reservoir is fed by a number of watercourses, the closest of which to the Site being the Goldenhill River (1.13km from Site). Figure 5-1 illustrates potential connectivity between the Site and Goldenhill River, and therefore Poulaphouca Reservoir SPA. However, it is concluded in Chapter 6 of the rEIAR, that due to the relative distance and current vegetated nature of the area

surrounding the Application Site, it is likely that runoff infiltrates to ground (into the superficial sands and gravels as groundwater baseflow) prior to reaching the Goldenhill River.

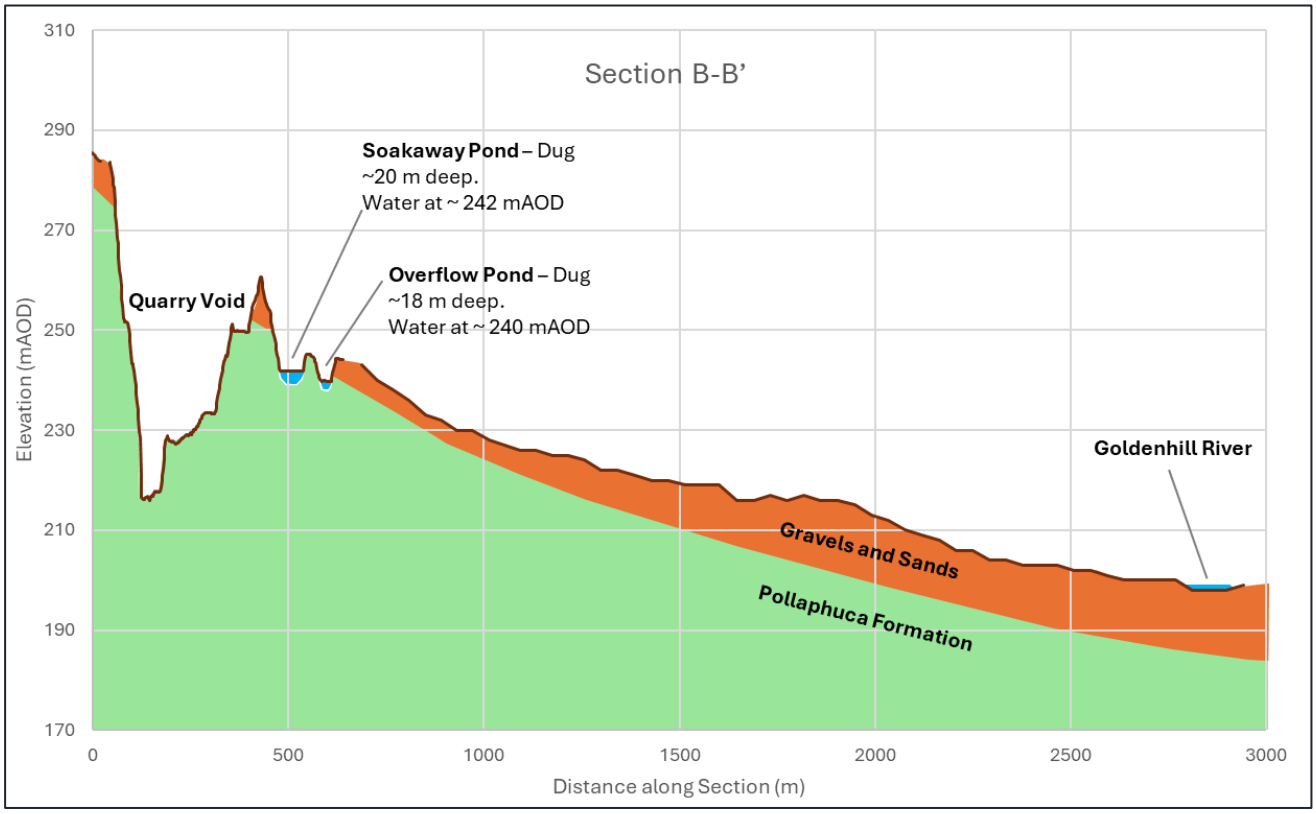

Figure 5-1 - Conceptual Section - Soakaway to Goldenhill River

Figure 5-2 illustrates a conceptual section of the Existing Development in relation to Red Bog SAC. While the Existing Development's southern boundary and Red Bog are on a similar elevation (c. 260 mAOD), the water associated with Red Bog is perched and is therefore not connected with the above groundwater body. It is therefore concluded that there is no groundwater connectivity with the Existing Development.

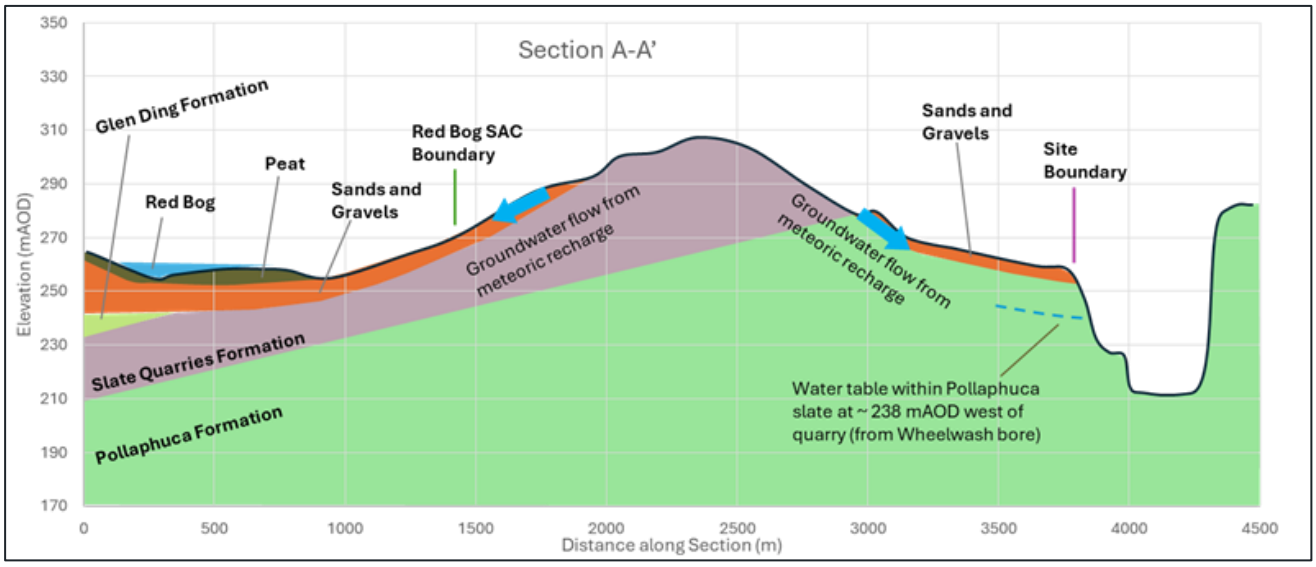

Figure 5-2 - A conceptual diagram of the groundwater formations between the Existing Development and Red Bog SAC

5.1.2. DUST

With reference to Section 2.2.5, works at the Application Site have not resulted in significant dust emissions during the assessment period. In an ecological context, further information has been added below.

The effect of airborne particulate matter on plants has been studied on several occasions, and the literature reviewed by Farmer (1993) and Prajapati (2012). Guidance from IAQM (2016) cites Farmer (1993) when making the following statement:

"The level of dust deposition likely to lead to a change in vegetation is very high (over 1 g/m2/day) and the likelihood of a significant effect is therefore very low except on the Existing Developments with the highest dust release close to sensitive habitats."

Prajapati (2012) states that chemical effects of reactive materials (such as cement dust, and particulate sulphates/nitrates) become evident at concentrations of approximately 2 g/m2, with reference to a study by Grantz et al. (2003).

The paper by Farmer (1993) refers to studies by Spatt and Miller (1981) and Walker and Everett (1987), both of which examined effects of dust deposition on sensitive bryophyte communities[9] alongside a major road in Alaska. It was found that species of Sphagnum declined. Where dust deposition was between 1000-2500 mg/m2/day. Decline of Sphagnum coverage was noted up to 20 m from the road.

Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014) provides a mechanism for determining the sensitivity of an area to ecological impacts. It is reproduced in **Table 5-1** below. It considers the sensitivity of an ecological receptor and the distance between it and the source of dust, in determining the likelihood of significant impacts. In the context of the Existing Development, Red Bog, Kildare SAC is an ecological receptor of 'High' sensitivity. Dust emissions

[9] Relevant in the context of Red Bog SAC

arising from within 20 m would be considered to pose a high risk of significant impacts, and those arising from within 50 m would be considered to pose a medium risk of significant impacts. Whilst the table does not provide details for further distances, it can be reasonably inferred that emissions arising further than 50 m from a receptor of 'High' sensitivity would be considered to pose a low risk of significant impacts.

The Red Bog SAC boundary is c. 1.4 km from the Existing Development and according to IAQM guidance (2016) the risk of an impact is anticipated to be negligible and therefore unlikely to result in a significant effect, regardless of the levels of dust produced.

Table 5-1 - Characterising the Sensitivity of an Area to Ecological Impacts (IAQM., 2016)

Receptor Sensitivity	Distance from the source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

5.1.3. NOISE AND VIBRATIONS

With reference to Sections 2.2.6 and 2.2.7, it has been concluded that noise and vibration emissions during the assessment period did not represent a shift in baseline conditions.

5.1.4. HABITAT LOSS

Approximately 0.08ha of scattered trees, and 0.62 ha of continuous scrub have been lost, but these are not considered important habitat for greylag geese. Approximately 0.16 ha of improved agricultural grassland has been lost (**Figure 4-3**). Considering the abundance of this habitat in the surrounding environment, its value as a resource (for foraging avifauna for example) is considered low. Peregrine falcon and greylag goose do not roost or nest on grassland.

Greylag geese prefer low-lying agricultural land (BTO, 2024), with key foraging habitats including marshes, grasslands (particularly wet grasslands) and other wetland habitats, cereal stubble, estuaries and lakes. Key forage resources are herbaceous plant materials accessible at ground level in terrestrial areas or from the surface of water bodies, including roots (of rushes and sedges, for example), grasses and other leaves, stems, tubers (such as potatoes), and (spilled) grain (Boland and Crowe, 2008).

At Poulaphouca Reservoir SPA, birds have been observed feeding on ryegrass, mustard and winter cereals, as well as on a nearby freshwater marsh (Boland and Crowe, 2008). They have been recorded predominantly at Threecastles to the northeast of Blessington Bridge, and also at Mountseskin in southwest County Dublin. Birds were recorded roosting on the reservoir, to the northeast of Blessington Bridge, and feeding on ryegrass/mustard and winter cereals nearby, at three locations around Threecastles, and also on a freshwater marsh situated close to the roost area (Burke *et al*, 2022).

No greylag geese were recorded during the 2024 ecological walkover surveys[10]. The Site is also located in the uplands, with greylag goose preferring to forage in the lowlands (see above). It should also be noted that the population of greylag geese has decreased 78% at Poulaphouca SPA between 1999 and 2017, prior to the Substitute Consent assessment period (NPWS, 2024), and 21% throughout Ireland as a whole (Lewis, 2019). As such, the value of Poulaphouca Reservoir as a critical site for greylag geese populations in Ireland has declined, given the population decline is significantly greater than that of Ireland as a whole.

The area of affected habitat (0.16 ha) represents less than 0.025% available foraging habitat (a maximum of approximately 104,321 ha[11]) for greylag geese from Poulaphouca SPA. Furthermore, As can be seen in **Figure 2-1**, the Development is surrounded by agricultural land (suitable foraging habitat for greylag geese) on all sides, and this extends continuously for more than 5 km to the west, north, and east, and is only halted by Poulaphouca Reservoir itself to the south after approximately 3.5 km. This shows that there is abundant alternative forage available in the area.

5.1.5. INVASIVE SPECIES

5.1.5.1. Flora

Considering the nature of the activity at the Application Site, in particular the ingress of vehicles, plant and machinery and their associated soil disturbance, the transport into the Application Site of seeds and viable tissue of invasive flora is an inherent possibility. One invasive plant, cherry laurel, was recorded during the 2024 field surveys.

Considering the above, the spread of invasive species from the Application Site is considered possible during the assessment period. However, in the event that this has occurred, there was no observed increase in scrub or hedgerow coverage, which would be an indicator of the spread of cherry laurel.

Cherry laurel was not recorded in 2019, but the hedgerow where it was recorded in 2024 was present in 2019. It is most likely that it was overlooked, rather than having been introduced to the Site during the assessment period. It is therefore concluded that the spread of invasive flora did not occur as a result of works at the Application Site during the assessment period.

5.1.5.2. Fauna

No invasive fauna were recorded in 2019 or 2024. It can therefore be concluded that the works within the Application Site during the assessment period did not result in the introduction or allow the proliferation of invasive fauna.

[10] It is acknowledged that the August 2024 survey would not encompass migratory populations of greylag geese, which tend to arrive from Iceland in late September/early October. However, no resident birds were recorded in October 2024 either.

[11] This area is the area of a circle with a radius of 20 km from the Site, but with the combined areas of Wicklow Mountains and Dublin City within the circle subtracted. This metric is intended to be indicative, and is applied on the premise that the majority of land coverage in Ireland is grassland and tillage agriculture, but the upland peat landscape of Wicklow Mountains and the urban landscape of Dublin suburbs are notable exceptions.

5.2. EFFECTS IN ISOLATION

Table 5-2 - AA Screening – Effects in Isolation

Development Activity	Potential Impacts	Screening Assessment	LSEs
Red Bog SAC 000397			
Continuation of existing quarrying activities and proposed expansion	Groundwater contamination, leading to deterioration in habitat condition; Changes to groundwater regime (i.e. fluctuations in level).	There has been no observed deterioration in groundwater quality across the assessment period. There is no hydrogeological connectivity between the Application Site and the SAC. **No LSE**	None
	Dust emissions, leading to deterioration in habitat conditions.	The Red Bog SAC boundary is c. 1.4 km from the Existing Development and according to IAQM guidance (2016) the risk of an impact is anticipated to be negligible and therefore unlikely to result in a significant effect. **No LSE**	None
	Spread of invasive species leading to a deterioration of habitat condition, and a decrease in area coverage of qualifying habitat.	Access to the Existing Development is via a privately-owned laneway which connects to the L6030, which does not intersect or run alongside Red Bog SAC; In order for this effect to be considered potentially significant in the context of AA, viable seeds/tissue would need to have been transported to Red Bog SAC, which would necessitate the presence of vehicles, machinery, or footfall at the Existing Development, and subsequently inside the boundary of Red Bog SAC. Given the improbability of this sequence of events, the risk of significant effects from invasive flora can reasonably be discounted. **No LSE**	None

Development Activity	Potential Impacts	Screening Assessment	LSEs
Poulaphouca Reservoir SPA 004063			
Continuation of existing quarrying activities and proposed expansion	Habitat loss: • Reduction of foraging habitat for greylag geese (a QI species).	Approximately 0.16 ha of improved agricultural grassland has been lost. Considering the abundance of this habitat in the surrounding environment, its value as a resource (for foraging avifauna for example) is considered negligible. Greylag geese do not roost or nest on grassland. As such, it is determined that this loss of habitat will **not** have LSE on greylag geese. **No LSE**	None
	Habitat loss: • Spread of Invasive Species Resulting in the decrease of available foraging habitat for greylag geese.	The qualifying species of Poulaphouca Reservoir SPA are not considered to be sensitive to the potential movement of terrestrial invasive flora. **No LSE**	None
	Disturbance: • To foraging greylag geese in fields within and adjacent to the Existing Development	Noise from the Existing Development did not exceed the 55dB which is deemed the threshold at which species may experience disturbance impacts. Furthermore, geese do not roost or nest on grassland, and there is adequate forage ground available in the surrounding areas. **No LSE**	None

Conclusion – Effects in Isolation

With reference to the rationale presented in Table 5-2, it is concluded that the Existing Development (in isolation) did not result in significant effects to any European sites.

5.3. EFFECTS IN COMBINATION

As well as considering the potential for LSEs from the Existing Development in isolation, the AA must also consider those effects in combination with those associated with other plans or projects. Whilst a project in isolation may not result in significant effects to European sites, non-significant effects from one project could act in combination with non-significant effects of another project, resulting in significant effects overall.

In this context, an important distinction to make is whether a project in isolation may result in effects that are not significant, or whether they will not result in any effects at all.

5.3.1.1. De minimis Effects

The term *de minimis* is referenced in the opinion of the Advocate General in relation to CJEU case C-258/11 (Sweetman v. An Bord Pleanála) as follows:

"The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."

De minimis, as defined by the Mirriam Webster dictionary[12], means "lacking significance or importance - so minor as to be disregarded".

The *de minimis* principle has significance in the context of AA, by virtue of its relevance to whether an effect is 'likely' or 'significant', in accordance with the Habitats Directive. Potential effects from the Existing Development (as presented in Section 5.1) are assessed in the below sections, with reference to whether they are considered to meet the *de minimis* threshold, and consequently, whether they should be scoped out of in-combination assessment.

It should be noted that the consideration of *de minimis* effects in this report does disregard the importance of the precautionary principle. Instead, it ensures that the assessment remains focused on potential effects to European sites that could be significant, avoiding unnecessary analysis of trivial impacts that do not pose a meaningful risk.

5.3.2. GROUNDWATER

Considering the lack of groundwater connectivity between the Existing Development and Red Bog SAC, or Poulaphouca Reservoir SPA, as described, it is considered that there is no potential for any effects to occur. Groundwater in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

[12] "*De minimis*." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/de%20minimis. Accessed 11 November 2024.

5.3.3. DUST

Red Bog SAC is 1.4 km from the Development. Impacts on sites from dust beyond 1 km from the source are considered to be negligible, and any resulting effects are likely to be not significant, regardless of their nature or size (IAQM, 2016). Dust in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

5.3.4. NOISE

As shown in **Table 5-2**, noise levels that exceed the 55 dB threshold at which significant impacts are expected are not likely to have occurred as a result of activities associated with the Development. Noise in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

5.3.5. INVASIVE SPECIES

As shown in **Table 5-2**, the sequence of events necessary for potential significant effects to Red Bog SAC are so improbable, that effects from invasive species have been discounted completely. The spread of invasive species within the Existing Development has not occurred, and loss of foraging habitat for greylag geese associated with Poulaphouca Reservoir SPA has not occurred as a result of invasive scrub encroachment. Invasive species in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

5.3.6. HABITAT LOSS

The loss of 0.16 ha of agricultural grassland as a resource for foraging birds was found to be insignificant in isolation. The rationale presented in Sections 0-0 is summarised below:

- Greylag geese, whilst known to forage on agricultural grassland, preferentially forage in wet grasslands, marshes and cereal stubble fields;
- 0.16 ha represents <0.025% of available foraging area for populations of greylag geese associated with Poulaphouca Reservoir SPA; and
- Population trends indicate that Poulaphouca Reservoir SPA has decreased in value as a roost for greylag geese.

The European Commission states that the assessment should be proportionate to the geographical scope, the nature and extent of likely effects (EC, 2021). With reference to the above rationale, and with reference to the requirement for a proportionate assessment, it is considered that the loss of 0.16 ha of agricultural grassland meets the *de minimis* threshold, such that it should be scoped out of in-combination assessment.

5.3.7. IN-COMBINATION CONCLUSION

In light of the conclusion that any effects from the Proposed Development in isolation have met the *de minimis* threshold*,* it is concluded that the Proposed Development did not act in combination with other plans or projects to result in significant effects to any European site.

6. CONCLUDING STATEMENT

The Screening exercise was completed in compliance with the relevant European Commission and national guidelines. Article 42 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 states that: “The public authority shall determine that an AA of a plan or project is not required […] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site.”

The potential impacts of the activities at the Existing Development during the assessment period have been considered in the context of the European sites potentially affected. It has been concluded that the risks posed by groundwater contamination, dust emissions, noise emissions, the spread of invasive species and habitat loss were **not** found be likely to have caused significant effects to Red Bog SAC, nor Poulaphouca Reservoir SPA. These two European sites were the only ones found to have connectivity with the Existing Development. The finding of ‘no likely significant effects’ was deemed to be the case for the Existing Development alone, and in combination with other plans or projects.

As significant effects on European sites from the unauthorised activities at the Existing Development have been deemed unlikely, it is therefore determined that rNIS is not required.

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