



Shillelagh Quarries Limited

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# HEMPSTOWN QUARRY

Stage 1 Screening for Appropriate Assessment





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## **HEMPSTOWN QUARRY**

Stage 1 Screening for Appropriate Assessment

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# 1 INTRODUCTION

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## 1.1 BACKGROUND

- 1.1.1. WSP Consulting Ireland Ltd. (WSP) has been commissioned to prepare an Appropriate Assessment Screening (AAS) Report to inform a planning application for further development of a quarry (as a quarry) under S.37L of the Planning and Development Act, 2000. This application is submitted on behalf of Shillelagh Quarries Limited ('the Applicant', hereafter referred to as SQL) to An Bord Pleanála (ABP) for continuation of use of existing quarry and extension over an area of 1.89 ha northeast of the current working area located at Hempstown Commons, Co. Kildare ('Application Site').
- 1.1.2. The application under S.37L will run concurrently with an application for substitute consent of development undertaken on the Application Site. The application for substitute consent of developments is outside the scope of this report and has been submitted separately.
- 1.1.3. The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EEC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community.
- 1.1.4. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites; from these the conservation objectives of the site are derived.
- 1.1.5. An 'Appropriate Assessment' (AA) is a required assessment to determine the likelihood of significant impacts, based on best scientific knowledge, of any plans or projects on Natura 2000 sites. A screening for AA determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site, in view of its conservation objectives. This AA Screening has been undertaken to determine the potential for significant effects on relevant Natura 2000 sites. The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Works in the context of the conservation objectives of such sites.
- Establish whether the plan or project is directly connected with or necessary for the management of a European site;
  - Description of the plan or project and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the European site;
  - Identification of European sites potentially affected;

- Identification and description of potential effects on the European site;
- Assessment of the likely significance of the effects identified on the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

## 1.2 THE HABITATS DIRECTIVE

- 1.2.1. 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'<sup>1</sup>), ABP is required to undertake a Screening for a Appropriate Assessment (AA), to determine whether the development will have likely significant effects (LSEs) upon European Sites, i.e., those that may be present within the Application Site's Ecological Zone of Influence (EZol<sup>2</sup>), either alone, or in combination with other plans or projects.
- 1.2.2. '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).

## 1.3 LEGISLATIVE CONTEXT

- 1.3.1. Section 177U(1) of The Planning Acts places a duty upon 'Competent Authorities' (in this case ABP) to determine LSEs of Proposed Works (in this case the Application Sites) upon European sites prior to granting consent. The Competent Authority's AA Screening determination will be informed by this report.
- 1.3.2. 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 activity associated with the development will have 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 Natura Impact

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<sup>1</sup> Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

<sup>2</sup> The CIEEM EclA Guidelines define the EZol as the area over which important ecological features may be subject to significant effects resulting from the Application Site; this may extend beyond the footprint of the Application Site. The EZol may vary for each ecological feature

due to the varying mobility range of the feature being assessed. For example, the EZol for otter (which are mobile) will be greater than the EZol for habitats (which are sedentary).



Statement (NIS) which would determine whether those LSEs will have an adverse effect on the integrity of any European site, in light of its Conservation Objectives.

1.3.3. In support of SQL's planning application, WSP have produced an AA Screening Report.

## **1.4 REPORT PURPOSE**

1.4.1. The aims of this report are to:

- Introduce the Application Site and provide context within the existing landscape;
- Identify the potential environmental impacts associated with the planned activities associated with the Application Site;
- Identify European sites which lie within the EZoI of the Application Site;
- Identify whether any of the impacts associated with the Application Site, both alone and in combination with other plans or projects, may result in LSEs 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 Natura impact assessment (NIS) for those European sites upon which LSEs are predicted or for which LSEs could not be excluded based on objective information, both for the Application Site 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).

## **1.5 CONTRIBUTORS TO THIS REPORT**

1.5.1. WSP is the lead consultant in the preparation of the Consent planning application documentation (including AA reports and Environmental Impact Assessment Report (EIAR)), for the Applicant.

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

## 2 APPLICATION SITE

### 2.1 OVERVIEW

2.1.1. The quarry at the Application Site 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). Planning permission for continuation of activities is being applied for the following 12 years for extraction work, and an additional 2 years for final restoration works.

### 2.2 Application Site Location

2.2.1. The Application Site 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 Application Site 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 Application Site entrance with the adjacent landowner, Stresslite Precast.



**Figure 2-1 - Application Site location showing 37L Planning Application Boundary, EIA Boundary and the Proposed Pit Extension Area.**

2.2.2. The 'Application Boundary' refers to the area inside which the Proposed Works will be confined, but for the purpose of the planning application, an 'EIA Boundary' was established

as a point of reference for establishing baseline conditions in the area surrounding the Application Site.

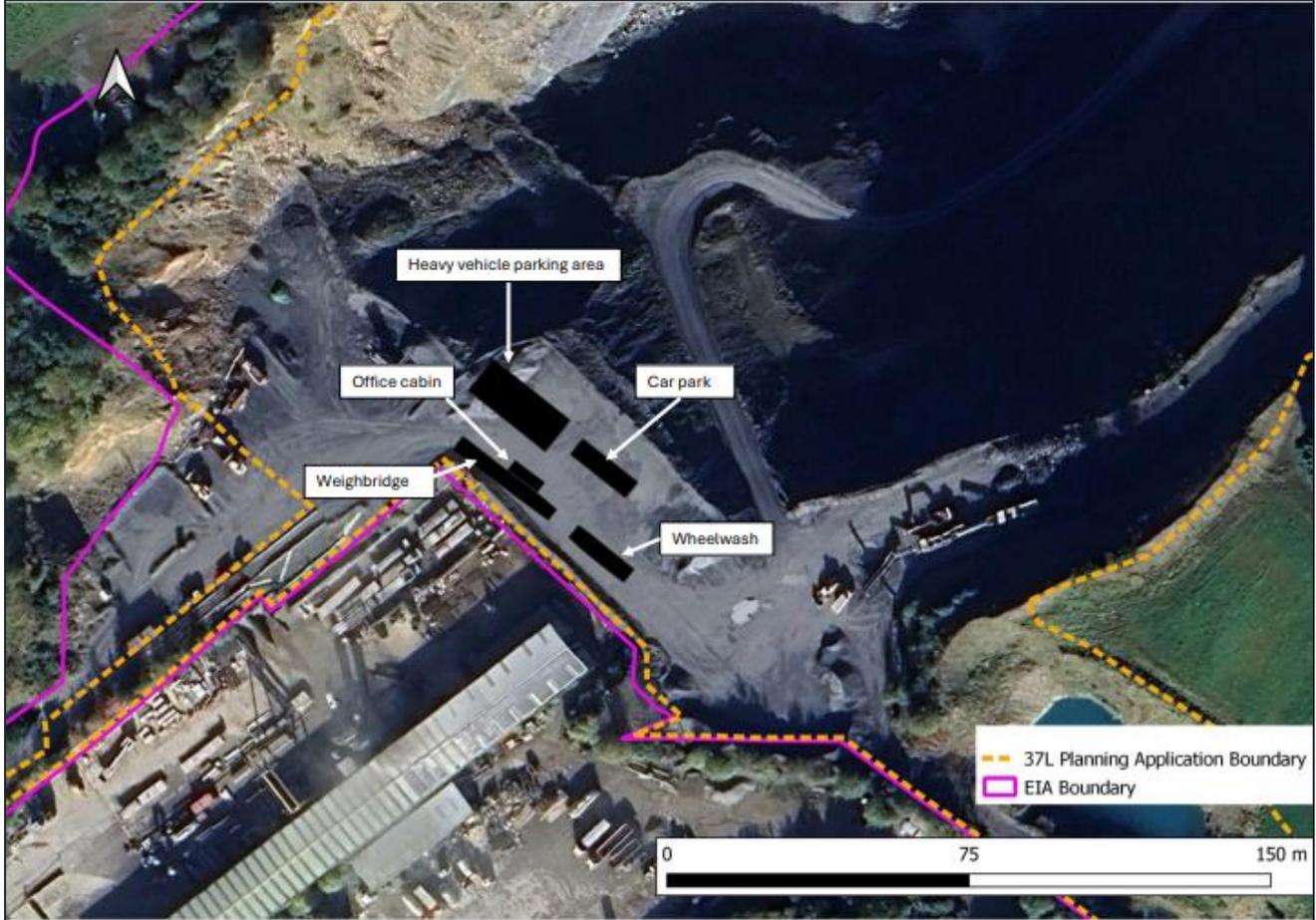
## 2.3 Description of the Proposed Works

- 2.3.1. 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 EIAR and information considered pertinent to the Appropriate Assessment process is summarised in the main text body of this report.
- 2.3.2. The current layout of the site is shown in Figure 2-1.
- 2.3.3. It is proposed to extend the existing quarry in a north-easterly direction for the extraction of sand and gravel, and rock.
- 2.3.4. The Proposed Works within the Application Boundary comprise:
- Continuation of excavation of rock using a variety of methods, including drilling and blasting, and rock-breaking;
  - Continuation of mobile crushing, and screening of the rock into stockpiles of specific fragment sizes. It is proposed that initial extraction in the extension area will require continued use of 1 no. mobile crusher and 1 no. screen off the quarry floor. However, as excavation progresses, space will be generated within the void space and processing plant will be moved to the quarry floor;
  - Loading of material onto road going trucks for sale and distribution to market; and,
  - Trucks passing through a weighbridge and wheelwash before travelling onto the N81.
- 2.3.5. Other proposed works include:
- Progressive stripping of overburden from the proposed quarry lateral extension area, which will be stored as a series of benches along the north-western wall of the existing quarry pit;
  - Continued pumping of collected waters from the quarry void to the primary soakaway;
  - Relocation of the existing office container, wheelwash and tank, and weighbridge within the Application Site boundary;
  - Decommissioning of the SQL abstraction borehole<sup>3</sup>;
  - Installation of a bypass separator prior to discharge of collected waters from the quarry floor into the primary soakaway; and
  - Extension of the sump on the quarry floor.

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<sup>3</sup> Future periodic abstraction will be from the existing Stresslite Precast Ltd borehole located adjacent to the Application Site.

2.3.6. A full description of proposed works at the Application Site activities can be found in **Chapter 2 (Project Description)** of the EIAR, submitted separately with this planning application. Hereafter the proposed activities are collectively referred to as the ‘Proposed Works’.



**Figure 2-2 – Proposed site layout (site facilities) and private access lane.**

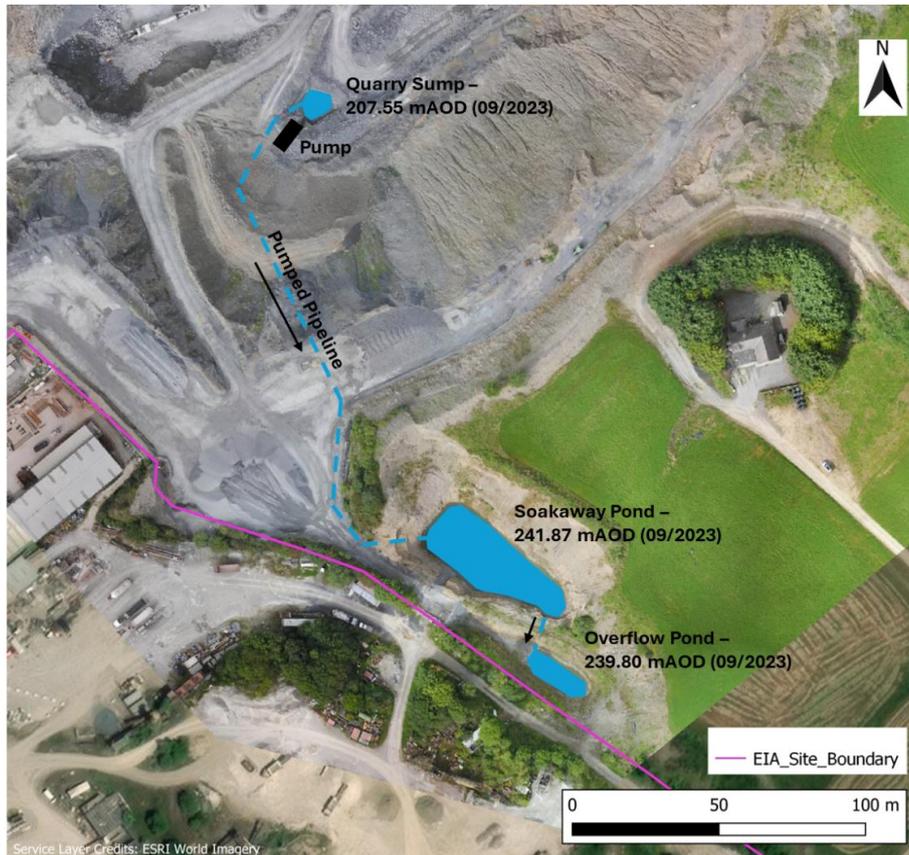
2.3.7. The existing operational quarry has been in use since the mid-1940’s and has been registered with Section 261, Planning & Development Act 2000 (Quarry Ref. No. QR 39). Subsequent planning permission for continuance of quarrying operations was granted under Kildare PPRN:07/443. Substitute consent has been sought for activities undertaken between 29 December 2019 and 20 December 2024. The Application Site comprises lands which are currently used for quarrying activities.

2.3.8. The lands surrounding the Application Site can largely be characterised as rural in nature, with land uses in the area being agricultural, industrial, forestry and single-house residential.

**Water Requirements and Management**

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

- 2.3.10. The locations of the quarry sump and associated pump, pipeline, primary soakaway and overflow soakaway are shown in Figure 2-3. 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 soakaway, if required.
- 2.3.11. 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 2-3 - Layout of September 2024 dewatering and discharge system (on September 2023 Aerial)<sup>4</sup>**

- 2.3.12. Water is periodically taken from the abstraction borehole (labelled ‘wheelwash’ in Figure 2-4) 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.
- 2.3.13. As part of the Proposed Works, an AquaTreat bypass separator will be installed between the main quarry sump and the soakaways along which dewatering of the quarry floor

<sup>4</sup> Bypass separator planned for installation not shown on figure.

occurs. This bypass separator will remove heavy metals, suspended solids and liquid-phase hydrocarbons from the pumped water.

- 2.3.14. To ensure surface water is contained within the site, should soakaway ponds be nearing maximum capacity, pumps will be turned off preventing dewatering, and the base of the quarry be allowed to fill until soakaways return to a suitable level.

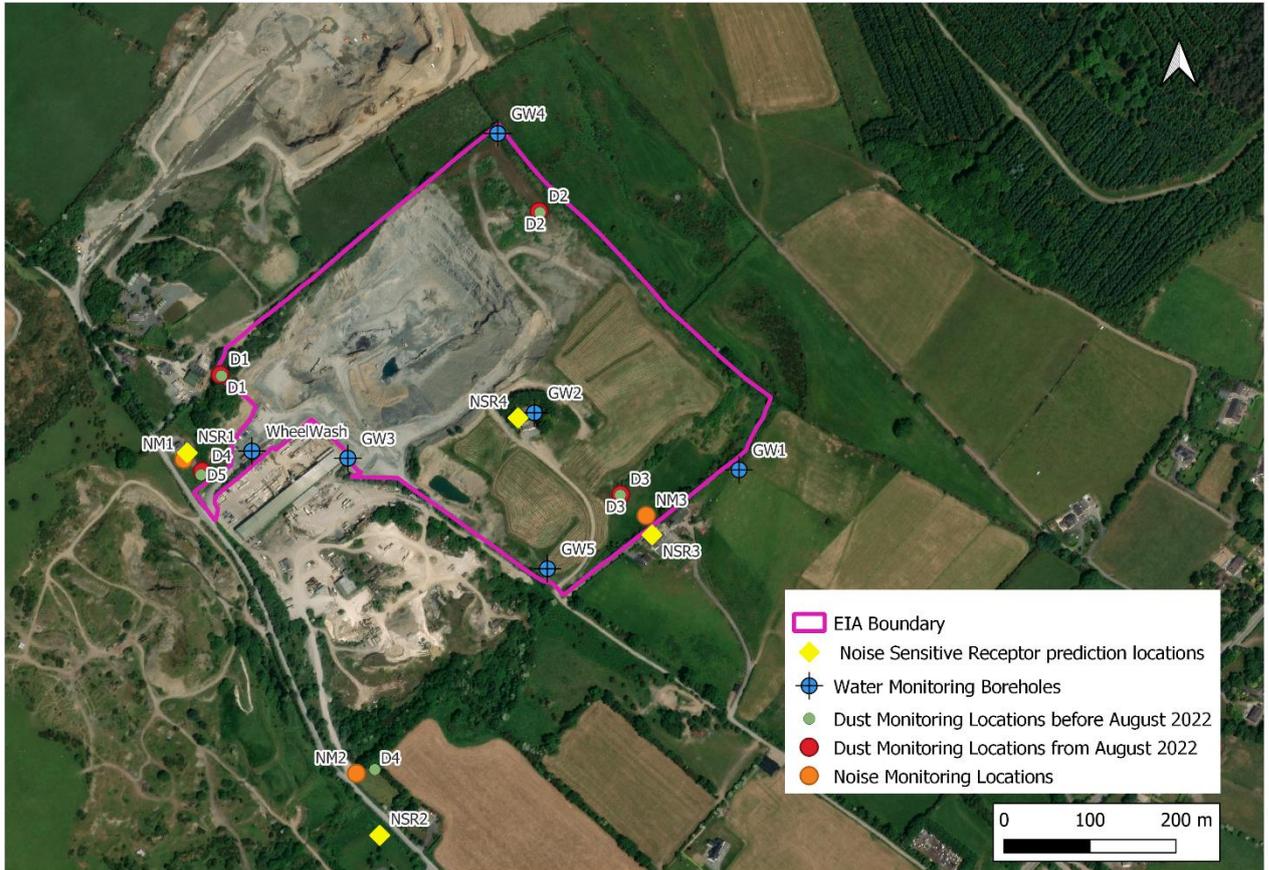
## **Surface Water**

- 2.3.15. Surface water is shown to exceed thresholds in Nitrate, Nitrite and Arsenic during tests.
- 2.3.16. Using evidence from the groundwater monitoring bores, it is more likely nitrate and nitrite levels are from the adjacent farmed land which use fertilisers and not due to quarrying activities.

## **Naturally Occurring Arsenic in the Kilcullen Group**

- 2.3.17. Arsenic can be found almost ubiquitously in the environment at natural (geogenic) baseline concentrations (Smedley & Kinniburgh, 2002). In Ireland, elevated groundwater arsenic concentrations have been found to be associated with poorly productive greywacke or shale bedrock aquifers (McGrory et al., 2017), similar to the Pollaphuca Formation and wider Kilcullen Group units in the study area.
- 2.3.18. Russell (2020) found geogenic arsenic contamination in private water supplies up to 871 µg/L in tap water samples sourced from private wells in an area approximately 5 km to the north of the quarry site, in the area surrounding Slievethoul. Samples collected directly from the wells with low-flow sampling techniques reached up to 69 µg/L, and surface water samples collected in streams draining off Slievethoul had concentrations up to 84.7 µg/L.
- 2.3.19. The source of the arsenic was found to arise from the presence of naturally occurring arsenopyrite associated with quartz veins cutting through the local greywacke Pollaphuca Formation. Oxidation of the arsenopyrite either from surface exposure or groundwater interactions leads to arsenic dissolving into the waters with which the arsenopyrite is in contact. In some locations this may lead to elevated arsenic concentrations in waters.
- 2.3.20. Russell (2020) also notes the presence of high arsenic in natural stream sediment samples collected by the Geological Survey Ireland's (GSI) Tellus project (GSI, 2024) in the nearby vicinity. Elevated arsenic concentrations up to 217 mg/kg are recorded in stream sediments feeding into the River Camac, near Gortnum Cottages, approximately 5 km to the southeast of the Quarry. For context, Smedley and Kinniburgh (2002) suggest global averages of arsenic in stream sediments to be in the range of 2 to 8 mg/kg.
- 2.3.21. Four soil samples collected as part of the SURGE soil sampling (GSI, 2023), between the Site and Rathcoole village (c. 2.5 km), have concentrations of 55.7 mg/kg (Sample 4357), 26.70 mg/kg (Sample 4358), 42.70 mg/kg (Sample 4360), and 38.80 mg/kg (Sample 4359). Baseline arsenic concentrations in soils are generally between 5 to 10 mg/kg (Smedley & Kinniburgh, 2002). Arsenic concentrations are therefore considered to be naturally elevated in the area.

2.3.22. The elevated arsenic concentrations are therefore interpreted by WSP to be naturally occurring rather than related to processes or facilities at the site.



**Figure 2-4 – Locations of monitoring stations for groundwater, dust, and noise.**

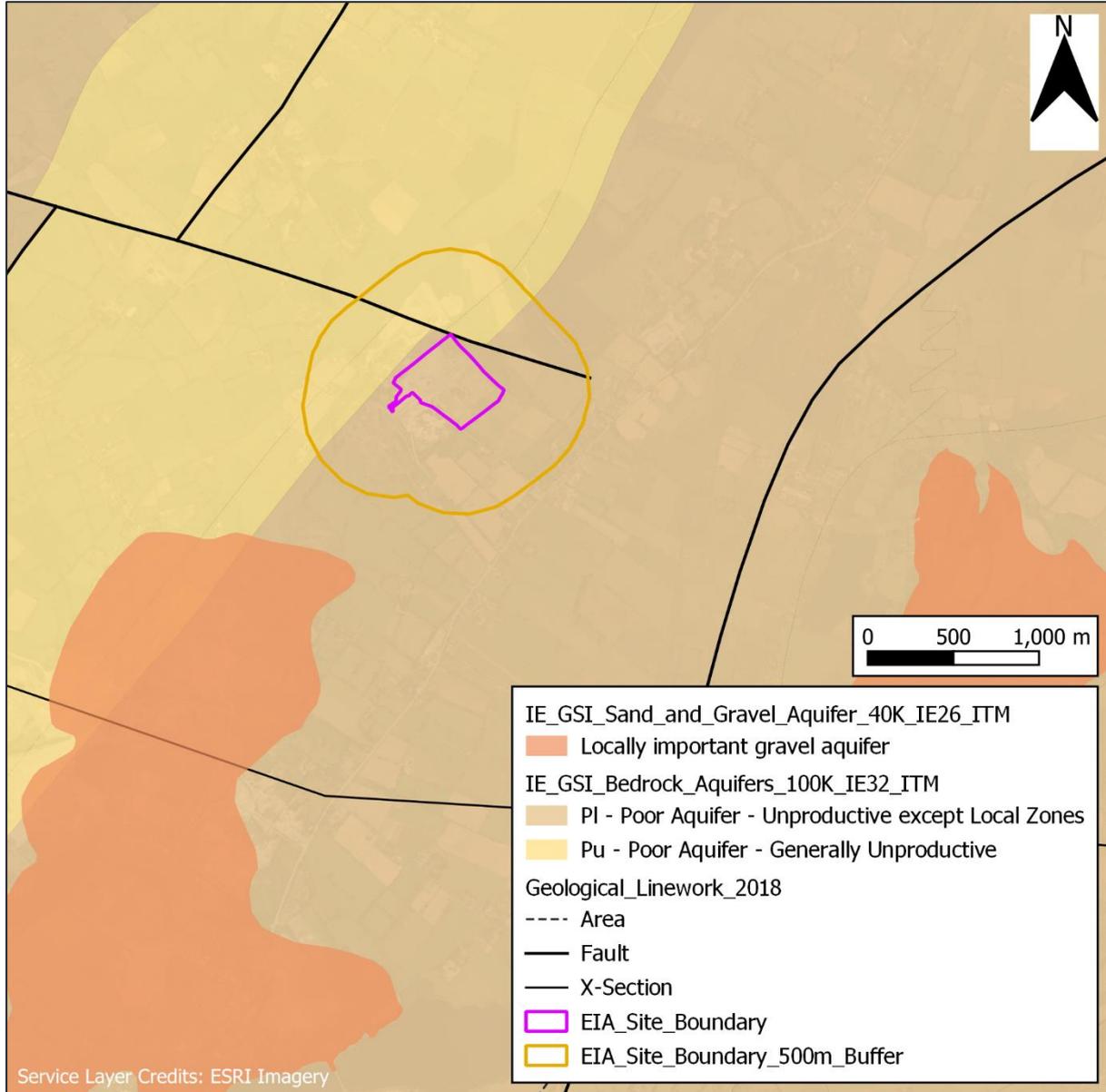
## Groundwater – Hydrogeology

### Local Aquifers and Their Properties

2.3.23. Based on a review of borehole logs, Development conditions and published information, it is understood that one aquifer unit underlies the Application Site, a bedrock aquifer, the Pollaphuca Formation, is classified as a ‘PI’ poor aquifer, described as “generally unproductive except for local zones”. The bedrock to the immediate north and west of the Application Site 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 2-5).

2.3.24. The sands and gravels underlying the footprint of the Application Site (where present) are not designated as an aquifer due to the thin nature of the deposits (<10 m thickness). The Blessington Gravels have been classified as a locally important sand and gravel aquifer (Lg). The Blessington Gravels are not, however, mapped beneath the Application Site and

are mapped 908 m south of the Application Site at their closest (Figure 2-5). Based on the borehole logs, the sands and gravels beneath the Application Site 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 2-5 - Aquifer Designation Map (GSI, 2023)**

### Groundwater Elevation

2.3.25. Regular groundwater monitoring is carried out at 5 no. groundwater monitoring wells installed on, or in close proximity to, lands in the control of SQL. These wells are located so to provide representative data to characterise groundwater conditions across the Application Site. The monitoring locations are presented in Figure 2-4.

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

### **2020-2024 Groundwater Elevations**

- 2.3.27. Manual groundwater elevations in Metres Above Ordnance Datum (mAOD) over the review period are displayed in Figure 2-8 for the monitoring wells shown in Figure 2-4. There are noticeable gaps in the recording frequency of water levels. Between October 2020 and February 2022 this is understood to be in relation to Covid.
- 2.3.28. 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 (GW4) with direct rainfall recharge to the bedrock aquifer, where it is exposed at surface to the north of GW4. 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 or flowing laterally within the unit or above as surface run-off. It is possible that layers of clay or silt within the sand and gravel unit helps to retain the meteoric recharge and inhibit vertical recharge to the underlying bedrock.
- 2.3.29. There is 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.
- 2.3.30. 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.
- 2.3.31. Groundwater contours generated for October 2023 indicate that groundwater movement is in a southerly direction across the Site (Figure 2-6 and Figure 2-7).

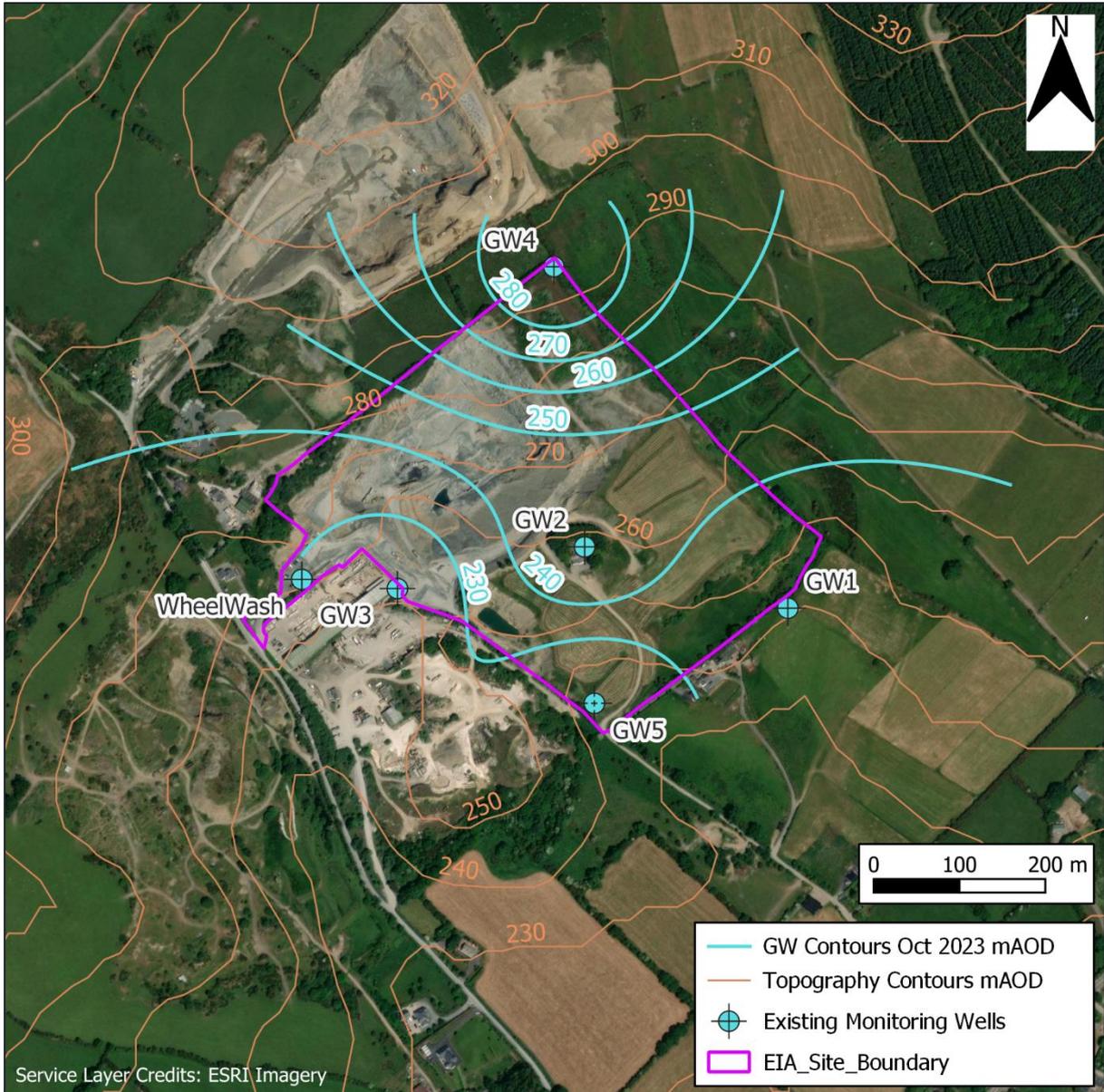
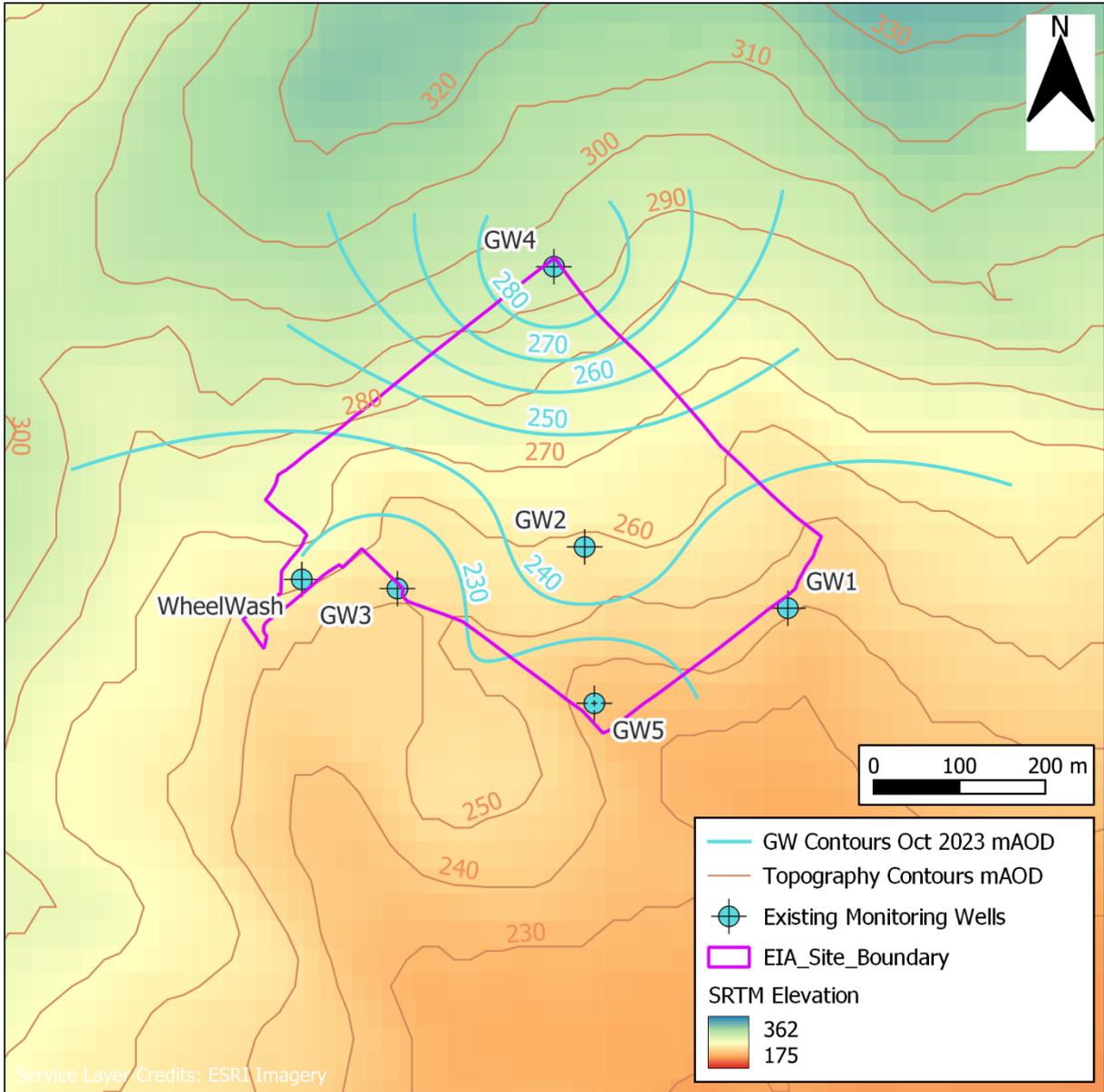
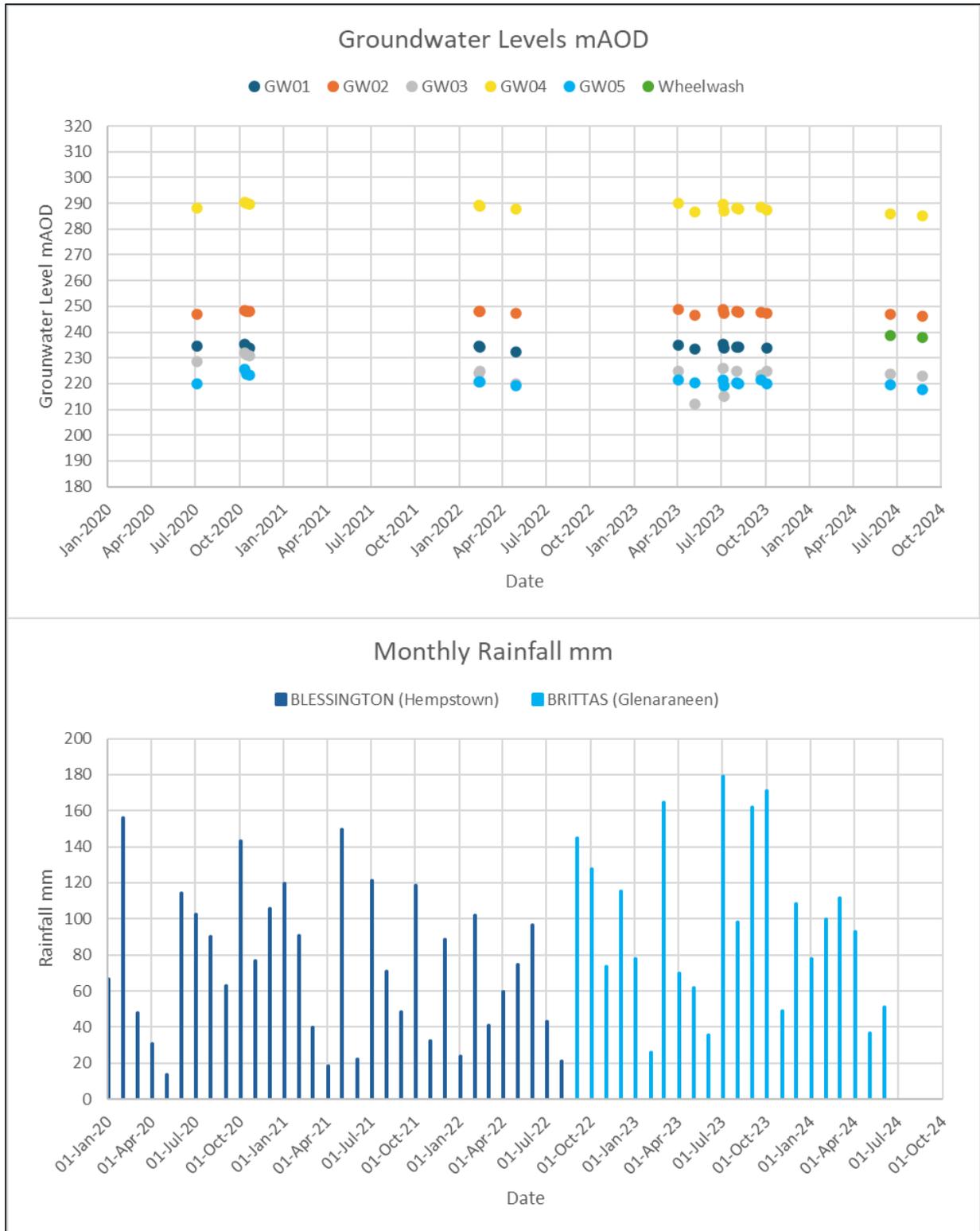


Figure 2-6 - Groundwater Contours October 2023 with Aerial and Topography



**Figure 2-7 - Groundwater Contours October 2023 with Topography**



**Figure 2-8 - Groundwater Elevations Over Period 2020-2024**

**Groundwater Quality**

2.3.32. Groundwater sampling over the period 2022 to 2024 indicated the GTV threshold for arsenic, barium, zinc and Nitrate were all exceeded, however:

- Elevated arsenic concentrations are interpreted by WSP to be naturally occurring rather than related to plant or facilities at the Site. Arsenic is not utilised on site in reagents or for inputs to plant site processes. Arsenic is often naturally elevated in groundwater hosted in greywacke or shales, with poorly productive bedrock having increased probability of higher concentrations (McGrory et al., 2017). The arsenic concentrations in GW4 and Wheelwash both rise in the September 2024 samples, which may be representative of reduced meteoric recharge (following an observed dry period) and reduced dilution of the arsenic within the groundwater. The naturally elevated arsenic in GW4 and Wheelwash is linked to the elevated arsenic in the soakaway pond (SW01).
- Elevated barium concentrations are consistent with the elevated arsenic concentrations and are again understood to be naturally occurring rather than related to plant or facilities at the Site. Only GW4 shows the rising trend in barium. GW4 is up hydraulic gradient from the quarry void, so cannot be a result of ongoing operations. Changes in groundwater chemistry in GW4 are therefore most likely to be in response to groundwater inputs north of the Site or changes in meteoric recharge/dilution.
- The GTV threshold (75 µg/l) for zinc was exceeded in both GW1 (83 µg/l) and GW2 (90 µg/l) on a single occasion (in September 2024 and August 2024 respectively).
- Nitrate as NO<sub>3</sub> exceeded the GTV threshold in GW5 in August 2024 and exceeded the AA-EQS threshold (50 mg/l) in GW5 in September 2024. Higher nitrate levels are consistently seen in monitoring locations south of the Site, near areas of farmed land. This indicates that elevated nitrate may be caused by off-Site activities, such as applying fertiliser to agricultural land.

## Dust Emissions Modelling

2.3.33. Chapter 7 (Air Quality) of the EIAR concludes that the Proposed Works at the Application Site will not result in deleterious air quality emissions. In the context of AA, the below statement from IAQM<sup>5</sup> (2016) is pertinent to this Site.

2.3.34. “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’.”

## Noise Emissions Modelling

2.3.35. Details of noise emissions from the Application Site can be found in Chapter 9 (Noise and Vibration), the relevant conclusions are listed below:

- Noise emissions were modelled based on predicted levels at 4 noise-sensitive receptors around the periphery of the Application Site;

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<sup>5</sup> Institute of Air Quality Management

- The impact assessment was based on predicted noise levels in relation to an established noise threshold of 55 dB (as per EPA, 2016); and
- The noise impact assessment predicted that noise emissions would not exceed 55 dB at any of the noise-sensitive receptors.

2.3.36. 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.

### **Vibration Monitoring**

2.3.37. Details of vibration emissions from the Application Site can be found in Chapter 9 (Noise and Vibration). The relevant conclusions are below:

2.3.38. The established vibration and air overpressure limits at sensitive receptors in Ireland is 12mm/sec (PPV<sup>6</sup>) and 125 dB(lin) Air Overpressure (AOP) as defined in guidance from the Irish Concrete Foundation (2005).

2.3.39. The vibration impact assessment 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 will not be exceeded for either parameter.

2.3.40. In this context, it is interpreted that there will be no increase in vibration from the works at the Application Site as a result of the Proposed Works.

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<sup>6</sup> Peak Particle Velocity

## 3 SUPPORTING INFORMATION

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### 3.1 STAGES OF APPROPRIATE ASSESSMENT

- 3.1.1. 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.
- 3.1.2. 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 site'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 Application Site 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 Application Site 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 Application Site 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 Application Site 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

### European Union Habitats Directive

3.2.1. 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 Application Site:

- 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 site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned (Article 6(3)).

### Planning And Development Act

3.2.2. 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.

3.2.3. 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 Works shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or Proposed Works, individually or in combination with another plan or project is likely to have a significant effect on the European site.*

3.2.4. 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 Works, 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 Works, individually or in combination with other plans or projects, will have a significant effect on a European site.*

3.2.5. 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.

3.2.6. 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.

## Guidance

3.2.7. This AA Screening Report 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 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.

## A Note on Mitigation

- 3.2.8. 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.”
- 3.2.9. In the CJEU’s (2023) decision in *Eco Advocacy v An Bord Pleanála* (Case C-721/21) the CJEU has ruled that some forms of what we call ‘mitigation measures’ can be taken into account in screening for appropriate assessments. In *Eco Advocacy*, the CJEU having discussed *People Over Wind* clarified (at paragraphs 48 and 49) that that decision did not apply when those measures were “*constituent elements of that project inherent in it which have the effect of reducing the harmful effects of the project on the site concerned.*”
- 3.2.10. Paragraph 52 states that in the process of screening for AA, “*account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that [European] site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site.*”
- 3.2.11. It is important to note that the ruling applies even if the mitigation measures have the effect of protecting the European site, as long as they are “*standard features required for all projects of the same type.*” Mitigation measures specially designed to protect the European site which would not otherwise be taken cannot be taken into account.
- 3.2.12. The *Eco Advocacy* judgement is consistent with the High Court judgement in *Kelly v An Bord Pleanála* ([2019] IEHC 84), which determined that the inclusion of SuDS<sup>7</sup> infrastructure (e.g.

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<sup>7</sup> Sustainable Drainage Systems

hydrocarbon interceptors) in a project design did not equate to the implementation of 'mitigation measures' in the context of Appropriate Assessment.

3.2.13. The safeguarding of groundwater quality in Ireland is mandated by other legislative instruments, including:

- European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9/2010) as amended;
- EU Water Framework Directive (2000/60/EC);
- EPA Act (7/1992);
- European Communities (Drinking Water) Regulations 2023 (S.I. No. 81/2023); and
- Local Government (Water Pollution) Act (1/1977), as amended.

3.2.14. In accordance with the provisions of the above legislation, the uncontrolled release of contaminants to groundwater, leading to the deterioration of water quality, is considered an offence. This applies independent of the requirements of the Habitats Directive, such that the safeguarding of water quality is mandatory, regardless of proximity to, or connectivity with, European sites.

3.2.15. With reference to the Proposed Works, installation of an AquaTreat bypass separator (as described in in Section 2.3.13) is considered standard for projects of this nature, and would be implemented regardless of proximity to, or connectivity with European sites. In the context of the *Eco Advocacy* and *Kelly* rulings, this measure may therefore be considered at the screening stage of AA, such that the likelihood of significant effects will be assessed on the basis that these measures will be implemented.

## 4 APPROPRIATE ASSESSMENT SCREENING (STAGE 1)

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### 4.1 IDENTIFICATION OF RELEVANT EUROPEAN SITES

- 4.1.1. 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 zone of influence of the plan or project. 15 km is currently the 'default' zone of influence 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.
- 4.1.2. For this AA Screening, European sites with the potential to be affected by the Application Site 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 Application Site for foraging or roosting habitat (termed 'functionally connected' habitat<sup>8</sup>). 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).
- 4.1.3. Table 4-1 provides details of the Qualifying Interests (QIs)<sup>9</sup> of each of the European sites identified within the EZoI of the Application Site, the approximate distance and direction of each European site, and if there is potential connectivity<sup>10</sup>. The locations of these European sites in relation to the Site are shown in Figure 4-1.

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<sup>8</sup>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 site 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.

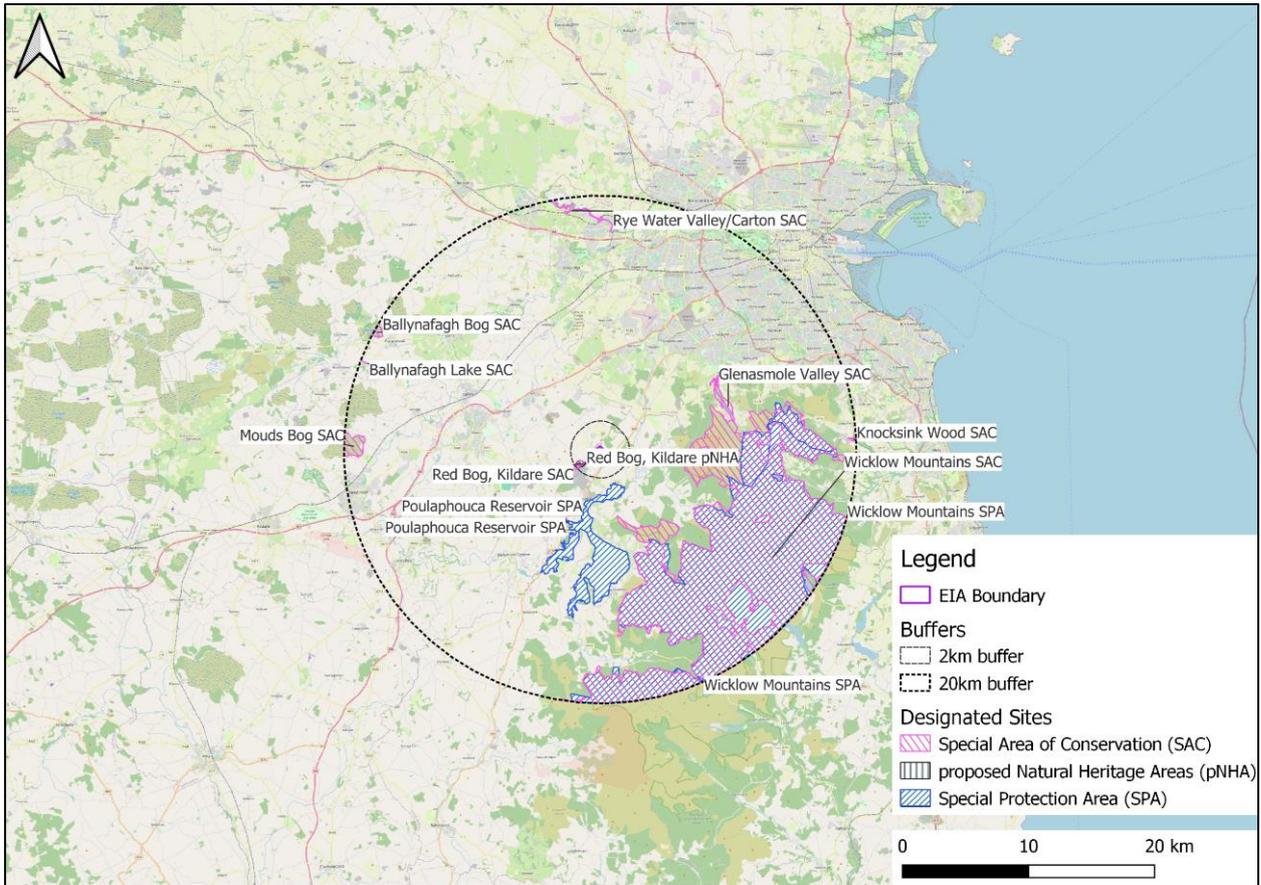
<sup>9</sup> The specific named bird species for which a SPA is selected is called the 'Special Conservation Interests' (SCIs). However, in practice, the common terminology of Qualifying Interests (QI) applies also to SCI (and is used in this document for simplicity) as per OPR, 2021.

<sup>10</sup>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>

4.1.4. It should be noted that there are no watercourses within the Site. 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 5.2).

### A Note on Connectivity For Dust Emissions

4.1.5. 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 100m 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 Application Site**

**Table 4-1 - European Sites Within the EZol**

Site Name and Code	Distance to Application Site	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Red Bog, Kildare SAC 000397	1.5km south-west	<p>Per Geological Survey Ireland (GSI) Spatial Resources (2023), the Site and this SAC are situated within the same groundwater body (European Code: IE_EA_G_085).</p> <p>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 Application Site are presented later in the report. At this stage, it is concluded that there is <b>potential groundwater connectivity</b> between this SAC and the 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).</p> <p>It is concluded that there is <b>no potential connectivity</b> for dust emissions between this SAC and the Application Site.</p> <p>This SAC is designated for habitats only; there is therefore <b>no functional connectivity</b> with the Application Site.</p>	Transition mires [7140]
Poulaphouca Reservoir SPA 004063	2.6km south	<p>There is <b>potential hydrological connectivity</b> between this SPA and the Application Site. There would be a potential connectivity between the soakaway and overflow ponds and the Goldenhill River, if the level in the ponds was to rise above the top of the Pollaphuca Formation bedrock, allowing flows either along the contact or within the overlying sand and gravel.</p> <p>The SPA is designated for its greylag goose <i>Anser anser</i> population and wintering lesser black-backed gull <i>Larus fuscus</i>.</p> <p>The SPA provides a main roost for the geese with feeding occurring on the improved grassland outside the SPA</p>	<p>Greylag goose [A043]</p> <p>Lesser black-backed gull [A183]</p>

Site Name and Code	Distance to Application Site	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		<p>(NPWS, 2014). Such improved grassland is present around the periphery of the Application boundary.</p> <p>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 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.</p> <p>There is <b>no functional connectivity</b> for lesser black-backed gull.</p> <p>Given that the Application Site is within the core foraging range of greylag geese and given the presence of suitable foraging habitat on adjacent lands, <b>there is possible functional connectivity</b> with this SPA for greylag geese, and this will be assessed further.</p>	
Wicklow Mountains SAC 002122	5.2km south	<p>There is <b>no hydrological connectivity</b> between this SAC and the Application Site.</p> <p>This SAC is designated for habitats only; there is therefore <b>no functional connectivity</b> with the Application Site.</p>	<p>Oligotrophic waters containing very few minerals of sandy plains <i>Littorelletalia uniflorae</i> [3110]</p> <p>Natural dystrophic lakes and ponds [3160]</p> <p>Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]</p> <p>European dry heaths [4030]</p> <p>Alpine and Boreal heaths [4060]</p> <p>Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]</p> <p>Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas</p>

Site Name and Code	Distance to Application Site	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
			<p>(and submountain areas, in Continental Europe) [6230]</p> <p>Blanket bogs (* if active bog) [7130].</p> <p>Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]</p> <p>Calcareous rocky slopes with chasmophytic vegetation [8210]</p>
<p>Wicklow Mountains SPA 004040</p>	<p>7.9km south-east</p>	<p>There is <b>no hydrological connectivity</b> between this SPA and the Application Site.</p> <p>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.</p> <p>The Application Site is therefore out of the range in which SPA populations would nest at the Application Site.</p> <p>According to SNH (2016), the core foraging range for merlin is 5 km, and is 2 km for peregrine falcon.</p> <p>There is therefore <b>no functional connectivity</b> for nesting or foraging merlins or peregrine falcons.</p>	<p>Merlin [A098]</p> <p>Peregrine falcon [A103]</p>
<p>Glensamole Valley SAC 001209</p>	<p>9.8km north– east</p>	<p><b>No hydrological connectivity.</b></p> <p>Petrifying springs are GWDTEs, but this SAC is not in the same groundwater body as the Application Site. There is <b>no groundwater connectivity.</b></p> <p>This SAC is designated for habitats only; there is therefore <b>no functional connectivity</b> with the Application Site.</p>	<p>Semi-natural dry grasslands and scrubland facies on calcareous substrates <i>Festuco-Brometalia</i> (*important orchid sites) [6210]</p>

Site Name and Code	Distance to Application Site	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
			<p><i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]</p> <p>Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220]</p>
Rye Water Valley/Cartron SAC (001398)	17.1km north	<p><b>No hydrological connectivity.</b></p> <p>Due to having no hydrological connectivity with the Application Site, and the distance between the Application Sites, it is reasonable to conclude that there is <b>no functional connectivity</b> between the SAC and the Application Site. This is due to whorl snail's main method of colonisation and dispersal being via waterborne transportation.</p>	<p>Petrifying springs with tufa formation Cratoneurion [7220].</p> <p>Narrow-mouthed whorl snail <i>Vertigo angustior</i> [1014].</p> <p>Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> [1016].</p>
Mouds Bog SAC	18.4km west	<p><b>No hydrological connectivity.</b></p> <p>This SAC is designated for habitats only; there is therefore <b>no functional connectivity</b> with the Application Site.</p>	<p>Active raised bogs [7110].</p> <p>Degraded raised bogs still capable of natural regeneration [7120].</p> <p>Depressions on peat substrates of the <i>Rhynchosporion</i> [7150].</p>
Ballynafagh Bog SAC	19.2km northwest	<p><b>No hydrological connectivity.</b></p> <p>This SAC is designated for habitats only; there is therefore <b>no functional connectivity</b> with the Application Site.</p>	<p>Active raised bogs [7110].</p> <p>Degraded raised bogs still capable of natural regeneration [7120].</p> <p>Depressions on peat substrates of the <i>Rhynchosporion</i> [7150].</p>
Ballynafagh Lake SAC	19.3km northwest	<p><b>No hydrological connectivity.</b></p> <p>Alkaline fens are GWDTEs, but this SAC is not in the same groundwater body as the Application Site. There is no groundwater connectivity.</p>	<p>Alkaline fens [7230].</p> <p>Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> [1016].</p> <p>Marsh Fritillary <i>Euphydryas aurinia</i> [1065].</p>

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

- 4.1.6. The Application Site is considered to be functionally connected to **Poulaphouca Reservoir SPA**, because of the Application Site's presence within the foraging range of one of its qualifying species (greylag goose) and the presence of suitable foraging habitat on adjacent land.
- 4.1.7. The Application Site is potentially hydrologically connected to Poulaphouca Reservoir SPA through the Goldenhill River.
- 4.1.8. Equally, the Application Site is potentially connected hydrogeologically to **Red Bog SAC**.
- The Application Site is not hydrologically, functionally or otherwise connected to any other European sites.

## 4.2 FIELD SURVEYS

High-level ecological walkover surveys of the Application Site were carried out by WSP, on the 15<sup>th</sup> of August 2024 and 21<sup>st</sup> of October 2024. The study area included the area within the EIA boundary, which includes the Application Site and lands to the south - see Figure 4-2.

4.2.1. The scope of the surveys included:

- Habitats – in accordance with guidance by Smith et al. (2011) and Fossitt (2000)
- 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 Application Site 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.



**Figure 4-2 - Ecological walkover 2024 survey area**

## 4.3 RESULTS

- 4.3.1. The following observations are relevant to the AA process:
- 4.3.2. 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. Two soakaways were present (classified as ‘FL8 – Artificial Lakes and Ponds’).
- 4.3.3. A full summary of field survey results can be found in Ecology Chapter 4 of the EIAR, relevant findings to the AA are listed below:
- Greylag geese were not observed in the quarry pit or in any of the surrounding habitats in the surveys.

- One invasive<sup>11</sup> 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)<sup>12</sup>.
- As a result of the expansion, there will be a small loss of dry grassland and grassy verges (GS2), ca. 0.02ha in total.

## Limitations

- 4.3.4. 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.

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<sup>11</sup> 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.

<sup>12</sup> NBDC, 2013. *Ireland's Invasive and Non-Native Species - Trends in Introductions*, Waterford: NBDC.



**Figure 4-3 – Habitats Distribution within the EIA Boundary**

## 5 ASSESSMENT OF LIKELIHOOD OF SIGNIFICANT EFFECTS

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- 5.1.1. This section identifies whether the impacts associated with the Application Site are likely to give rise to significant effects upon any of the European sites identified in the previous section. Details of the Application Site used to inform the assessment of LSEs are provided in Section 2. Any measures intended to avoid or reduce adverse effects of the Application Site on European sites (i.e. “mitigation measures”) or best practice measures were not considered during the Screening Stage.
- 5.1.2. 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 Application Site. A screening conclusion is then presented for each European site, identifying if there are any LSEs from the Application Site (Table 5-2).

### **Article 6(3) Statement – Management of European Sites**

- 5.1.3. Considering the nature of the activities concerned, and location of the Site, 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.

## 5.2 CONSIDERATION OF ENVIRONMENTAL EFFECTS - RATIONALE

- 5.2.1. 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.

### **Surface Water Emissions**

- 5.2.2. In accordance with the surface water management arrangements at the Application Site and the nature of the topography at the Site, there are no surface water discharges from the Application Site.

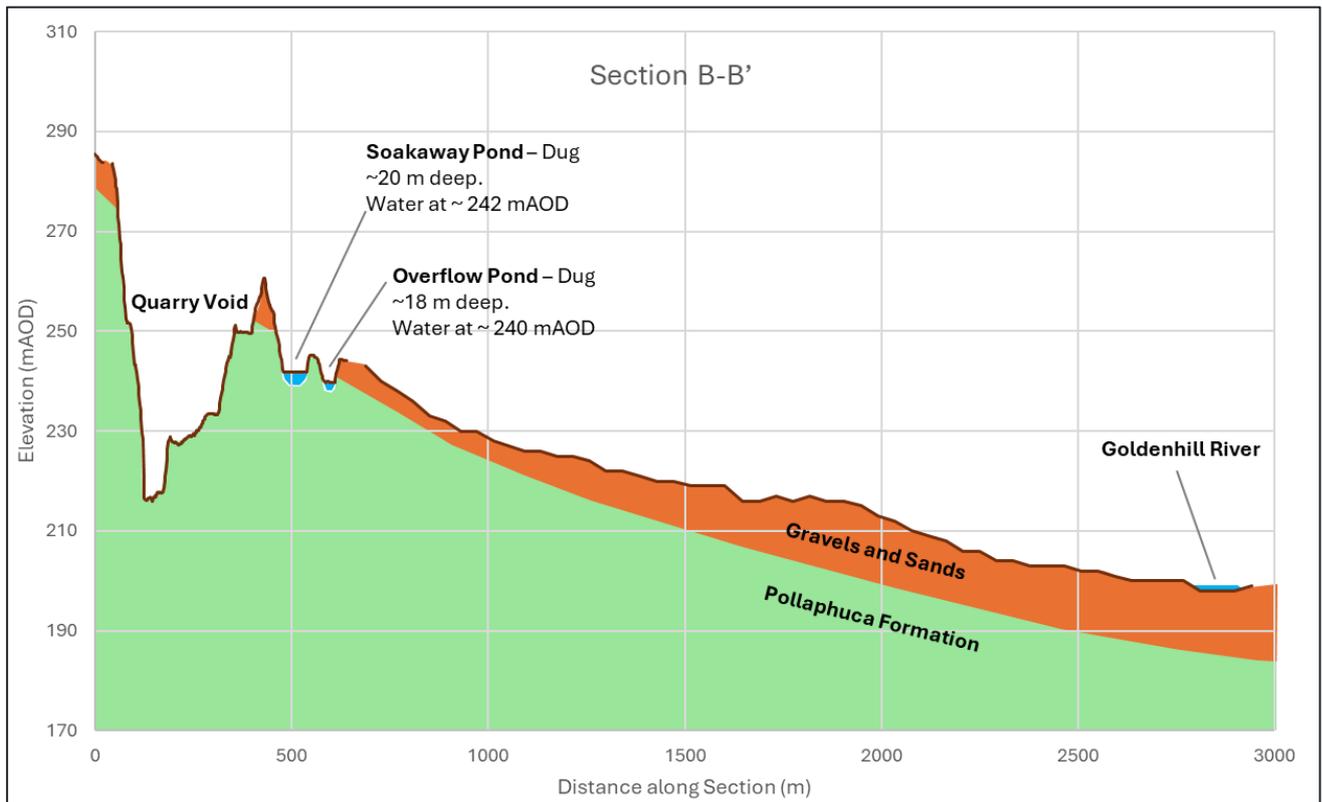
### **Hydrogeological Connectivity**

#### **Poulaphouca Reservoir SPA**

- 5.2.3. 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 by extension Poulaphouca Reservoir SPA. However, it is concluded in Chapter 6 (Water) of the EIAR, that there is a negligible risk of impacts to the Goldenhill River, because in summary:

- Arsenic and barium concentrations are considered to be geogenic and unrelated to quarrying activities;

- 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; and
- The planned installation of the AquaTreat bypass separator will remove contaminants, in the form of heavy metals, suspended solids and hydrocarbons prior to discharge into the soakaways.



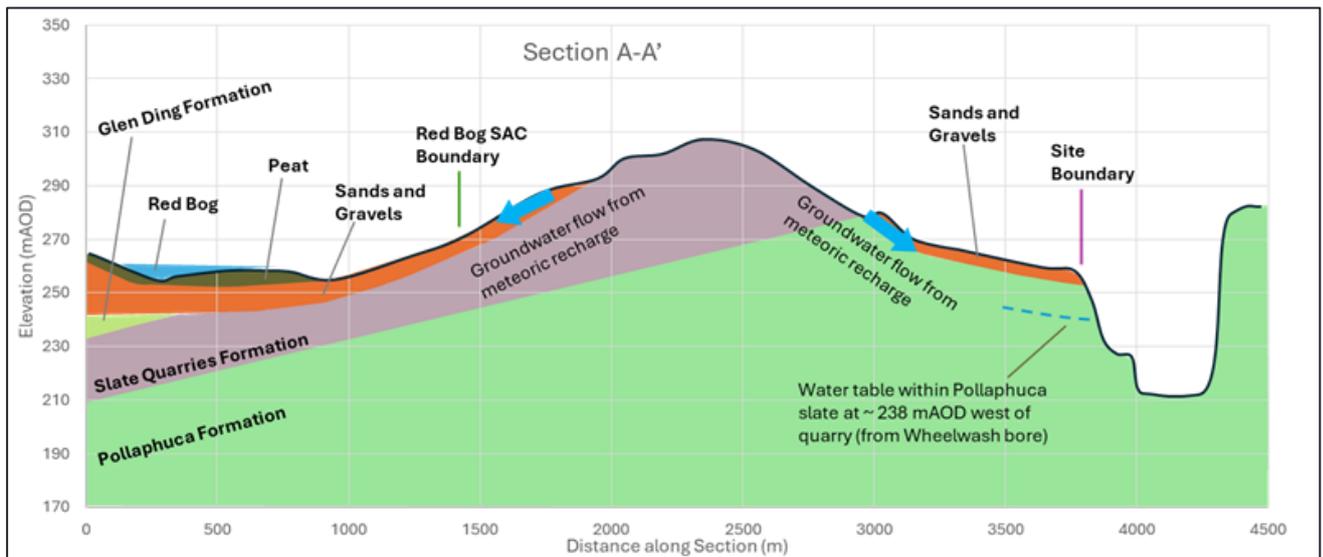
**Figure 5-1 - Conceptual Section - Soakaway to Goldenhill River**

**Red Bog SAC**

- 5.2.4. The quarry void is excavated into the Pollaphuca Formation beneath the Site, and Red Bog SAC is situated over the younger Glen Ding Formation, which outcrops to the northwest of the Site. Red Bog SAC is understood to be a perched water feature, which is underlain by peat and the Blessington gravels aquifer. Layers of clay in the sand and gravels and the low permeability peat support this perched water feature, which responds to seasonal rainfall. The Blessington gravels are not mapped beneath the Site. The classification of Red Bog SAC as a perched water feature is supported by the elevation at which it is situated (~ 262 m AOD), compared to the groundwater in the vicinity of the Site (~238 m AOD at Wheelwash), which is a water level difference of 24 m at a similar surface elevation.
- 5.2.5. The topographical high with Slate Quarries Formation bedrock exposed at/near surface shown in Figure 5-2, between the Red Bog and the quarry void is likely to create a

groundwater divide, with rainfall recharge either flowing southwest, into the sand and gravels and bedrock towards Red Bog SAC, or flowing northeast into the sand and gravels and bedrock towards the quarry void.

- 5.2.6. The information gathered and interpreted in this conceptual section indicates that it is highly unlikely that there is any hydraulic connectivity between the quarry void and Red Bog SAC. The dewatering activities in the base of the quarry will therefore not impact quantity or quality of the water within Red Bog SAC.



**Figure 5-2 - A conceptual diagram of the groundwater formations between the Application Site and Red Bog SAC**

- 5.2.7. Overall it has been concluded that no significant impacts on surface or groundwater quality will arise as a result of the Proposed Works.

### Dust

- 5.2.8. 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 Application Site, Red Bog, Kildare SAC is an ecological receptor of 'High' sensitivity. Dust emissions 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.

5.2.9. The Red Bog SAC boundary is ca. 1.4 km from the Application Site 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, 2014)**

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

### Noise

5.2.10. With reference to Section 2.3.36, the projected noise emissions as a result of Proposed Works will not exceed 55 dB, nor represent a shift from baseline conditions.

### Vibrations

5.2.11. With reference to Section 2.3.40, the projected vibration emissions as a result of Proposed Works will not exceed the regulatory limits for PPV and AOP, and will not represent a shift from baseline conditions.

### Habitat Loss

5.2.12. In relation to habitat loss for potentially functionally connected species greylag geese, as a result of the expansion, there will be a small loss of dry grassland and grassy verges (GS2), ca. 0.02ha in total.

5.2.13. 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).

5.2.14. Greylag geese are deemed to be of medium sensitivity to disturbance, with a buffer zone (for pedestrian disturbance) of 200-600m recommended (Goodship and Furness, 2022). Given that there are active quarry works ongoing less than 100m from the areas of grassland that greylag geese may use for forage, it is considered that disturbance levels are too high for the lands to be considered suitable for greylag geese.

- 5.2.15. No greylag geese were recorded during the 2024 ecological walkover surveys<sup>13</sup>. The Site is also located in the uplands, with greylag geese 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 (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.
- 5.2.16. The area of affected habitat (0.02 ha) represents less than 0.00002% available foraging habitat (a maximum of approximately 104,321 ha<sup>14</sup>) for greylag geese from Poulaphouca Reservoir SPA. Furthermore, As can be seen in Figure 2-1, the Application Site is surrounded by agricultural grassland (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 indicates that there is abundant alternative forage available in the area.

## **Invasive Species**

### **Flora**

- 5.2.17. 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, and it is noted that some stands of cherry laurel will be removed near the site entrance to facilitate realignment of the access road.

### **Fauna**

- 5.2.18. No invasive fauna were recorded or are known to be associated with the Application Site.

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<sup>13</sup> 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. No greylag geese were recorded in the October survey.

<sup>14</sup> 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.



## 5.3 Effects in Isolation

**Table 5-2 - AA Screening – Effects in Isolation**

Site 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).	No anticipated deterioration in groundwater quality as a result of the Proposed Works.  There is no hydrogeological connectivity between the Application Site and the SAC.  <b>No LSE</b>	None
	Dust emissions, leading to deterioration in habitat conditions.	The Red Bog SAC boundary is c. 1.4 km from the Application Site 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.  <b>No LSE</b>	None
	Spread of invasive species leading to a deterioration of habitat condition, and a decrease in area coverage of qualifying habitat.	Access to the Application Site is via a privately-owned laneway which connects to the L6030, which does not intersect with, 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 be transported to Red Bog SAC, which would necessitate the presence of vehicles, machinery, or footfall at the Application Site, 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.  <b>No LSE</b>	None

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 0.02 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 <b>not</b> have LSE on greylag geese.  <b>No LSE</b>	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.  <b>No LSE</b>	None
	Disturbance: To foraging greylag geese in fields within and adjacent to the Application Site	Noise from the Application Site is not expected to exceed the 55dB which is deemed the threshold at which species may experience significant disturbance impacts.  The Proposed Works do not represent a notable deviation from baseline conditions, in terms of potential disturbance of foraging waterfowl.  Furthermore, geese do not roost or nest on grassland, and there is adequate forage ground available in the surrounding areas.  <b>No LSE</b>	None

### Conclusion – Effects in Isolation

With reference to the rationale presented, it is concluded that the Application Site (in isolation) will not result in significant effects to any European sites.

## 5.4 Effects in Combination

- 5.4.1. As well as considering the potential for LSEs from the Site 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.
- 5.4.2. 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.

### De minimis Effects

- 5.4.3. 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.”
- 5.4.4. *De minimis*, as defined by the Merriam Webster dictionary<sup>15</sup>, means “lacking significance or importance - so minor as to be disregarded”.
- 5.4.5. 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 Application Site (as presented in Section 5) 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.
- 5.4.6. 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.

### Groundwater

- 5.4.7. Considering the lack of deleterious groundwater emissions from the Application Site, it is considered that there is no potential for any effects to occur. Groundwater in-combination

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<sup>15</sup> “*De minimis*.” Merriam-Webster.com Dictionary, Merriam-Webster, <https://www.merriam-webster.com/dictionary/de%20minimis>. Accessed 11 November 2024.

effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

### **Dust**

- 5.4.8. Red Bog SAC is 1.4 km from the Application Site. 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.

### **Noise and Vibration**

- 5.4.9. As presented in Section 2.3.35, noise levels that exceed the 55 dB threshold are not likely to occur as a result of activities associated with the Application Site. The Proposed Works do not represent a shift from baseline conditions. Noise in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.
- 5.4.10. As presented in Section 2.3.40, vibration levels that exceed the PPV and air overpressure thresholds are not likely to occur as a result of activities associated with the Application Site. The Proposed Works do not represent a shift from baseline conditions. Vibration in-combination effects are therefore deemed to meet the *de minimis* threshold, and are screened out from further assessment.

### **Habitat Loss**

- 5.4.11. The loss of 0.02ha of grassland as a resource for foraging birds was found to be insignificant in isolation. The rationale presented in Section 5.2.12 is summarised below:
- Greylag geese, whilst known to forage on agricultural grassland, preferentially forage in wet grasslands, marshes and cereal stubble fields;
  - 0.02 ha represents less than 0.00002% of available foraging area for populations of greylag geese associated with Poulaphouca Reservoir SPA, and substantial areas of alternative forage are nearby; and
  - Population trends indicate that Poulaphouca Reservoir SPA has decreased in value as a roost for greylag geese.
- 5.4.12. 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 0.02 ha of agricultural grassland meets the *de minimis* threshold, such that it should be scoped out of in-combination assessment.

### **In-Combination Conclusion**

- 5.4.13. In light of the conclusion that any effects from the Application Site in isolation have met the *de minimis* threshold, it is concluded that the Proposed Works at the Application Site will not



act in combination with other plans or projects to result in significant effects to any European site.

## 6 CONCLUDING STATEMENT

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- 6.1.1. For the reasons set out in detail in this AA Screening Report, in light of the best scientific knowledge in the field, all aspects of the Proposed Works in isolation, or in combination with other plans or projects, which may affect the relevant European Sites have been considered.
- 6.1.2. Given the nature, scale and duration of the Proposed Works, with reference to its connectivity to Poulaphouca Reservoir SPA and Red Bog SAC, it has been concluded that the Proposed Works will **not** give rise to a likelihood of significant effects on either European Site, alone or in combination with other plans or projects.
- 6.1.3. The AA Screening Report contains information which the competent authority may consider in making its own complete, precise and definitive findings and conclusions. This AA Screening Report is intended to be used by the competent authority to determine that all reasonable scientific doubt has been removed as to the likelihood of significant effects from the Proposed Works on the relevant European sites.
- 6.1.4. It can be concluded beyond reasonable scientific doubt that there will be no adverse effects on any European sites as a result of the Proposed Works, either alone, or in combination with other plans or projects. It is therefore determined that Appropriate Assessment is not required.

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