



Hudson Brothers Ltd

SUBSTITUTE CONSENT

Remedial Stage 1 Screening For Appropriate
Assessment





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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 WSP Consulting Ireland Ltd. (WSP) has been commissioned to prepare a Remedial Appropriate Assessment Screening (rAAS) Report to inform a substitute consent¹ planning application being submitted on behalf Hudson Brothers Ltd. (HBL; the Applicant) to An Bord Pleanála (ABP) for an existing quarry located in the townlands of Philipstown and Redbog, Co. Kildare (hereafter referred to as the 'Site').
- 1.1.2 It should be noted that the substitute consent application has been prepared in tandem with a concurrent application under Section 37L of the Planning and Development Act, 2000 (as amended) for further development of the existing quarry as a quarry by the same Applicant.
- 1.1.3 Having regard to 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 Directive²'), ABP is required to undertake a Screening for a remedial Appropriate Assessment (AA), 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)³, either alone, or in combination with other plans or projects.
- 1.1.4 '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, 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).
- 1.1.5 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.
- 1.1.6 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 to determine if the unauthorised activity associated with the Site 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 Substitute Consent, under Part XA of the Planning Acts refers to the process of applying for the retention of a development, for which it has subsequently been determined that Appropriate Assessment and/or Environmental Impact Assessment (EIA) was required.

² <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043>

³ The CIEEM EclA Guidelines define the EZoI as the area over which important ecological features may be subject to significant effects resulting from the Development; this may extend beyond the footprint of the Development. The EZoI may vary for each ecological feature due to the varying mobility range of the feature being assessed. For example, the EZoI for otter (which are mobile) will be greater than the EZoI for habitats (which are sedentary).



1.2 REPORT PURPOSE

1.2.1 The aims of this report are to:

- Introduce the Site and provide context within the existing landscape;
- Identify the potential environmental impacts associated with the unauthorised activities associated with the Site;
- 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 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);
- If deemed necessary by the AA screening process, produce an 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 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).

1.3 CONTRIBUTORS TO THIS REPORT

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

1.3.2 Field surveys and reporting was carried out by WSP ecologists Steven Tooher ACIEEM (Principal Ecologist) and Lisa O'Dowd (Consultant Ecologist), who have 8 and 3 years' experience respectively of habitat and protected species survey assessments.

2 EXISTING DEVELOPMENT

2.1 OVERVIEW

- 2.1.1 The quarry at the Site has been in use since the early 1950s and has been registered under Section 261 of Planning & Development Act 2000 (Quarry Ref. No. QR42) and subsequent planning permission for continuance of quarrying operations was granted under Planning Reg. Ref. 07/267. The expiry of the Planning Reg. Ref. 07/267 appropriate period was 18 September 2020, and as such the baseline of this rAAS has been set at that appointed day. . The AA 'assessment period' has been established as the period of 18 September to the present day.
- 2.1.2 The unauthorised Site activities within the application area comprise:
- The continuation of sand, gravel and rock extraction and processing by mechanical means, including blasting, crushing, aggregate processing, washing and screening;
 - The temporary storage of 'graded' aggregate types in specifically designated stockpiles prior to sale;
 - The continuation of loading material onto trucks for sale and distribution; and
 - The continuation of use of supporting infrastructure including a power house, control rooms, office buildings, portacabin/canteen, maintenance shed, water recycling plant, lagoons, landscaping berms and all associated works.

2.2 SITE LOCATION

- 2.2.1 The Site is located in the townlands of Philipstown and Redbog. The Site is located within an area of historical quarrying. The Site is accessed via a privately-owned track connecting to the N81 national road. The town of Blessington is located ca. 1.8 km south of the Site along the N81. The undulating land surrounding the Site slopes upwards in a north-westerly direction to the north of the Site, and away in a south-easterly direction to the south of the Site. The southern boundary of the Site lies adjacent to the Kildare-Wicklow County border. The quarry is accessed via Danker Lane (shared with other quarry operators) through lands owned by the Applicant in Co. Wicklow. The HBL Wicklow land is accessed via the N81 National Secondary Road (refer to Figure 2-1).

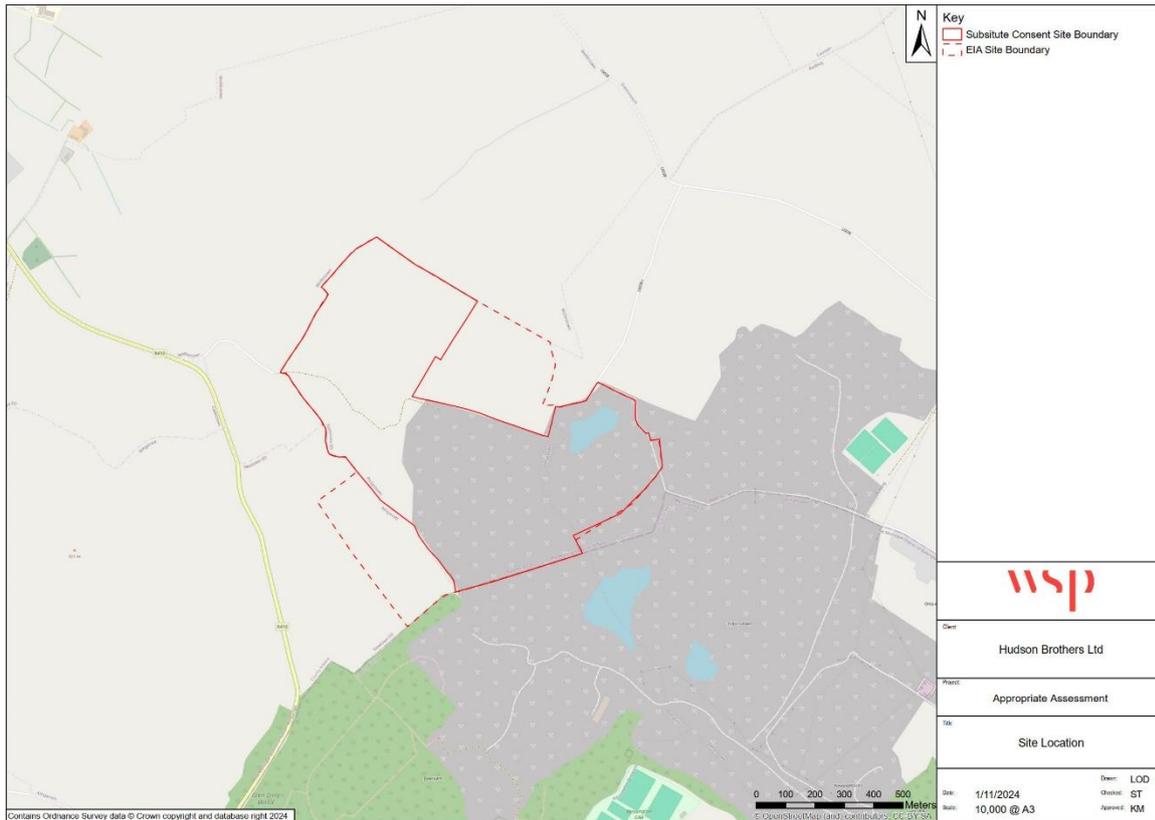


Figure 2-1 - Site Location

2.3 DESCRIPTION OF THE SITE

- 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 Remedial Environmental Impact Assessment Report (rEIAR – WSP, 2024) and information considered pertinent to Appropriate Assessment is summarised in the main text body.
- 2.3.2 The development consists of a quarry over an area of 71.9 ha. with a final floor of approximately 188 mAOD. The reserve consists of sand and gravel which is extracted by mechanical means, and sandstone (greywacke) which is extracted by blasting and mechanical means. The excavated sand and gravel is transported to a plant area for washing, grading and processing. The excavated rock material is crushed and graded at the working face by mobile plant. The quarry has an existing processing plant and maintenance area of approximately 5 ha. that currently holds 1 no. maintenance shed (including underbody truck wash on a concrete apron surrounding the shed, staff welfare facilities [shower and toilet], proprietary wastewater treatment system and percolation area, interceptor and soakaway), 1 no. generator/power house (within a shipping container), 1 no. control room, 1 no. office and canteen, a water recycling plant, an aggregate processing plant (washing, crushing, and screening), 1 no. bunded fuel tank and generator room, 1 no. storage shed, 1 no. shipping container storage structure, and 1 no. shipping container. Within this plant/maintenance shed area is a fuel storage and refuelling area. The quarry is located predominantly in Co. Kildare but accessed via a shared laneway connecting to a single location on the N81 which is located within Co. Wicklow. Other items not specified in this application will be the subject of a separate planning application and the requisite statutory process of consultation and determination.

SITE WATER REQUIREMENTS AND MANAGEMENT

- 2.3.3 At the present time, rock is processed at the quarry face and does not require the use of water, except for dust suppression. Sands and gravels are extracted from the working face and are transported to the east of the Site where they are processed in the plant area. Processing includes pre-screening, washing and crushing of the aggregate material in a closed-circuit Aggregate Processing Plant (Figure 2-2). The water abstracted from Pond K2 (Figure 2-3), passes through the Water Treatment Plant before being sent to the Maintenance Shed and Aggregate Processing Plant.
- 2.3.4 Water for the processing of the sands and gravels is abstracted from Pond K2, following Pond K1 being drained and infilled with stone by October 2023. There are two pumps abstracting from Pond K2, which operate at 1,000 L/min and 500 L/min and can be run independently or simultaneously. The Water Treatment Plant does not use all of the water pumped from Pond K2. There are blow off valves and ball-cocks used to regulate abstraction when it is not required for use. Water that is not used is therefore returned to Pond K2.
- 2.3.5 No formal discharge takes place from the Site, with most of the water used on-site in the processing of sands and gravels in a closed-circuit system. Silt-laden water from the Aggregate Processing Plant is discharged to a silt pond (for use in future restoration) and recirculates back to the clean water pump in Pond K2. The only water that is lost off site is the water that has not yet had the opportunity to evaporate from the washed products.

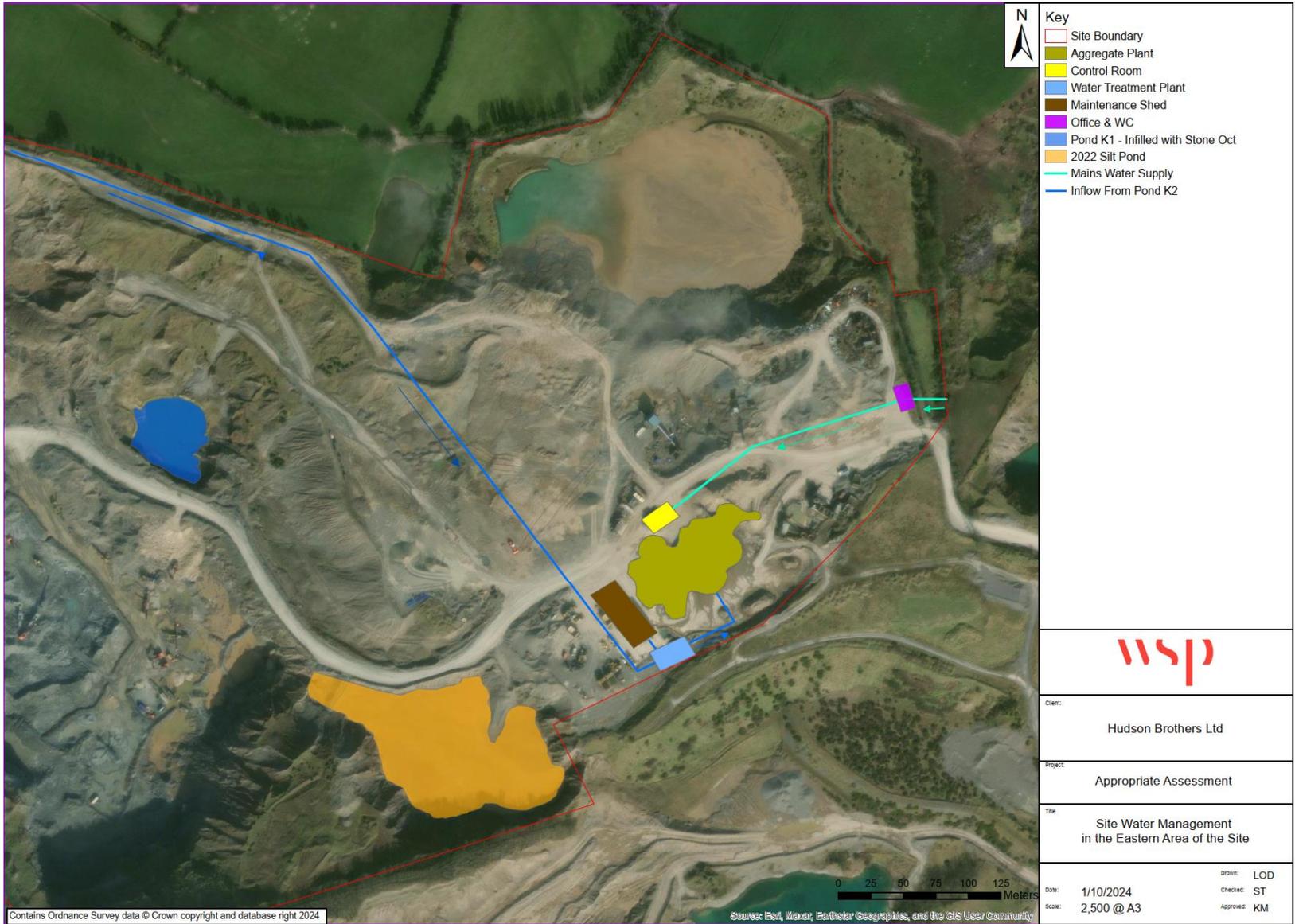


Figure 2-2 – Site Water Management in the Eastern Area of the Site

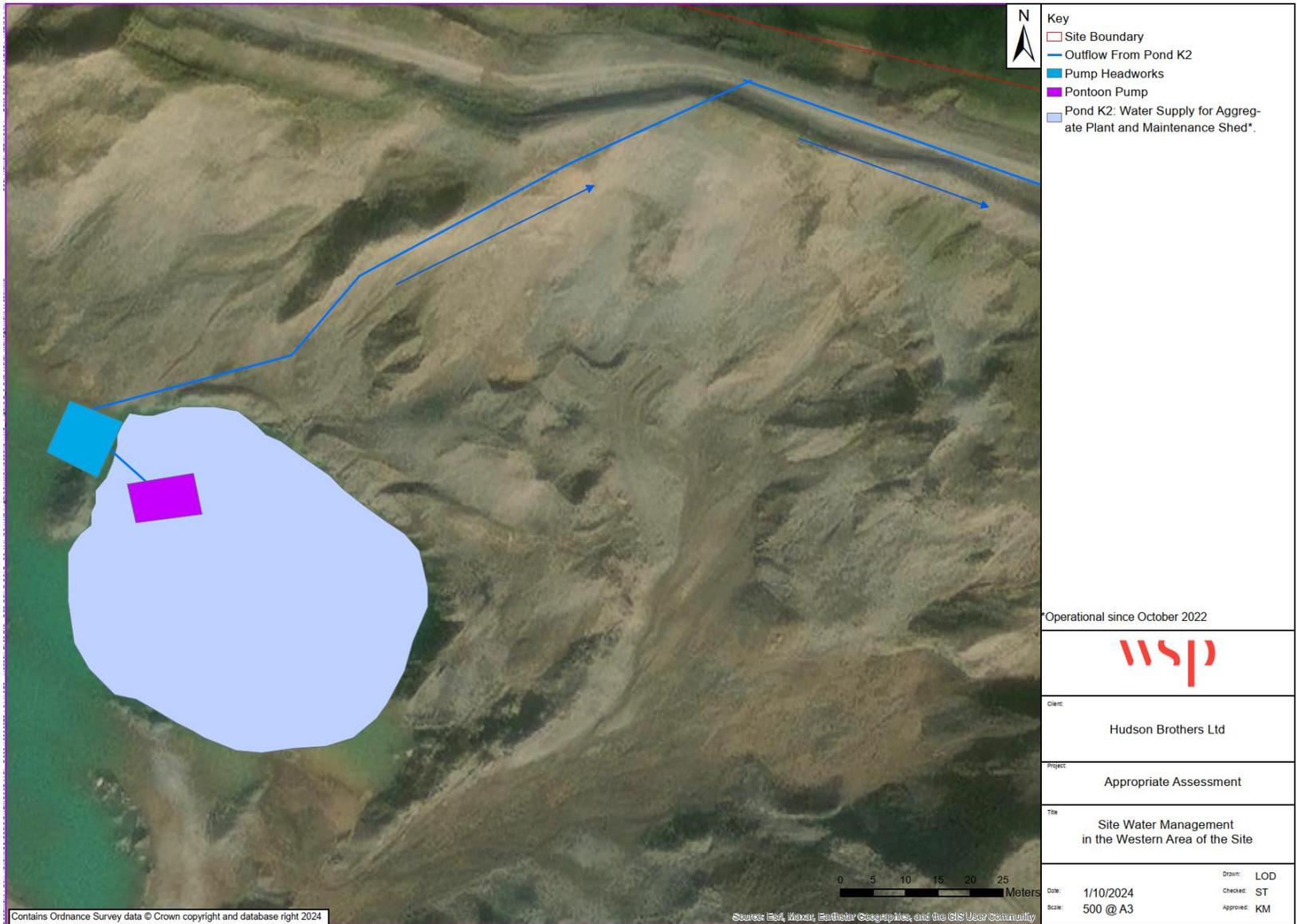


Figure 2-3 – Site Water Management in the Western Area of the Site

GROUNDWATER – HYDROGEOLOGY

LOCAL AQUIFERS AND THEIR PROPERTIES

- 2.3.6 The information contained in this section has been adapted from Chapter 7 (Water) of the rEIAR – submitted separately.
- 2.3.7 Based on a review of borehole logs, site conditions and published information, it is understood that two hydrogeological units underlie the Site: Permeable sands and gravels - Locally important aquifer - Lg; and Low permeability greywackes and shales of the Glen Ding Formation in the west and the Slate Quarries Formation in the east - Poor aquifer - Pu. The GSI aquifer designation (GSI, 2023⁴) for the sand and gravel and bedrock aquifers underlying the Site is shown in Figure 2-4.

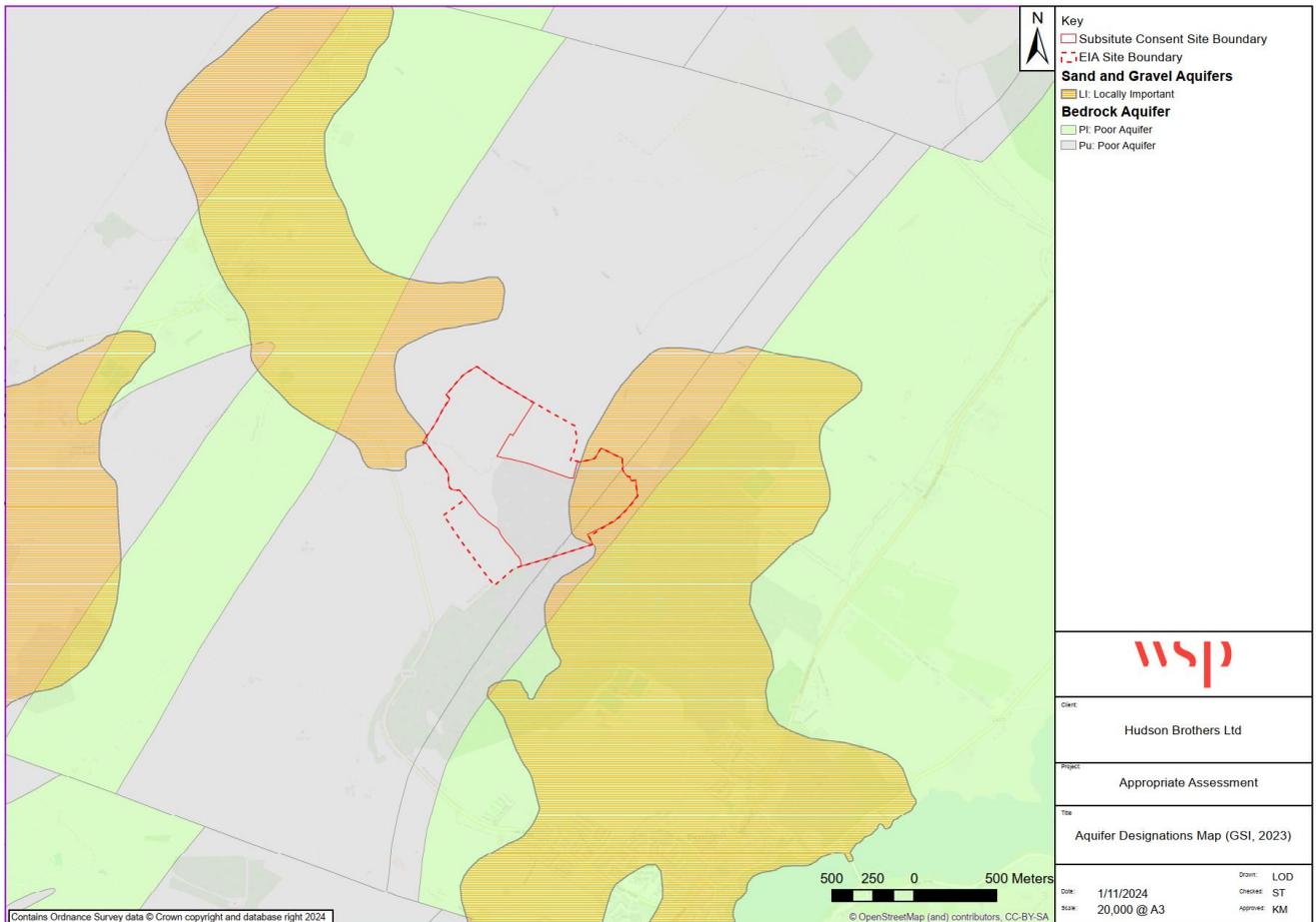


Figure 2-4 - Aquifer Designation Map (GSI, 2023)

GROUNDWATER ELEVATION

- 2.3.8 There were previously six existing monitoring wells installed on site prior to the assessment period. During 2023 two additional bores (BH9K and BH10K) were installed to provide further information on the underlying geology, groundwater quality and groundwater elevation. The location of the monitoring wells is presented in Figure 2-5.

⁴ Geological Survey Ireland – Map Viewer. Available at: <https://dcanr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>

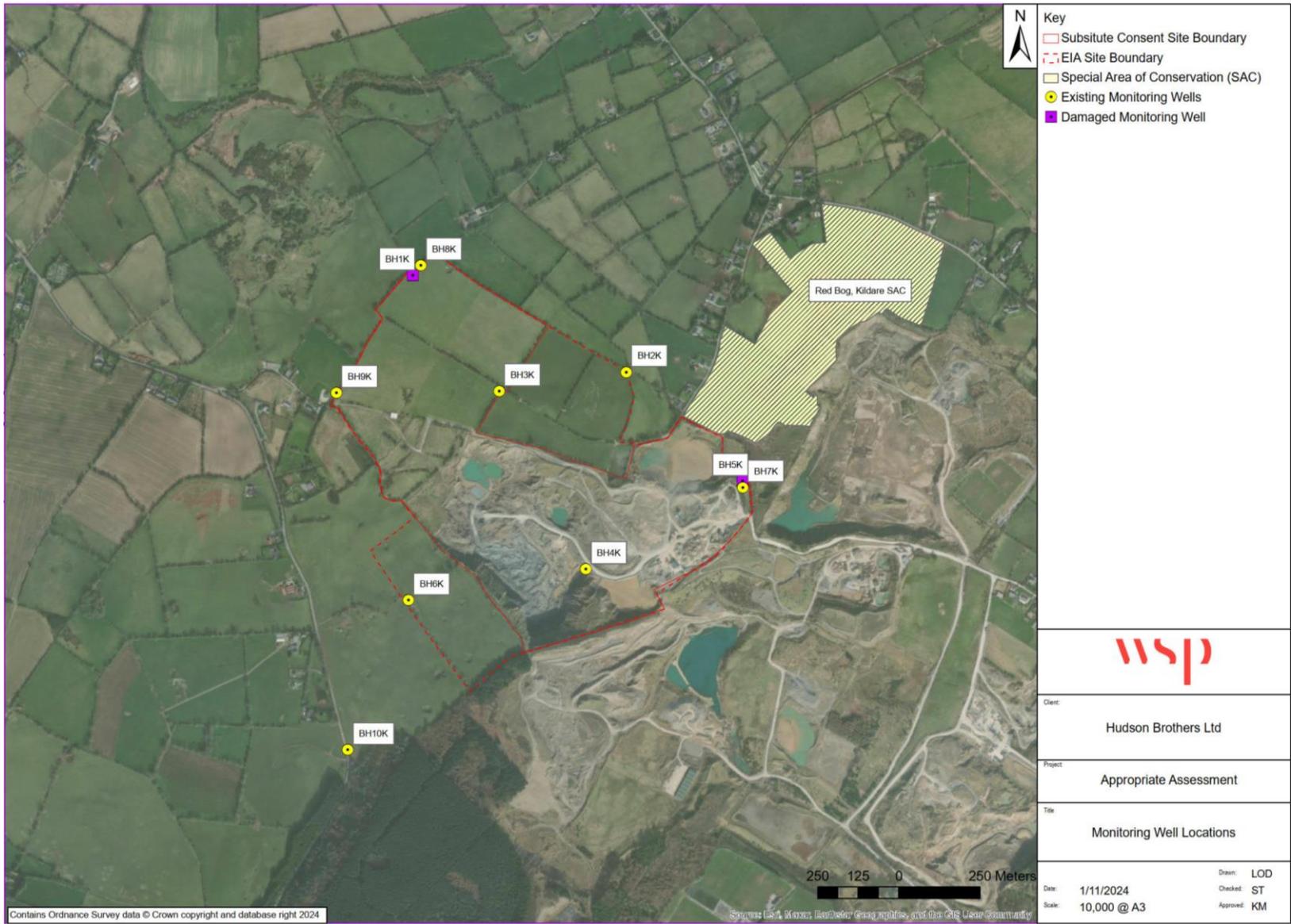


Figure 2-5 - Monitoring Well Locations

2019-2023 GROUNDWATER ELEVATIONS

- 2.3.9 Manual groundwater elevations in Metres Above Ordnance Datum (mAOD) over the assessment period are displayed in Figure 2-6 for the existing monitoring wells shown in Figure 2-5. Since January 2023, the frequency of recording water levels has been increased with monthly visits to site.
- 2.3.10 Water levels remained relatively stable throughout the assessment period, which is reflective of the confined nature of the groundwater within fractures and seams of the bedrock greywacke and slate. There are no rising or falling trends in any of the monitoring wells. There are two likely outlying water levels recorded in January 2023 for BH7K and in November 2023 for recently installed BH10K (further monitoring will confirm if this is anomalous or in response to rainfall).
- 2.3.11 Water levels respond to the March 2023 rainfall event when there was a total of 164.5 mm over the month. The biggest response is shown in BH8K, with a sharp rise in level of 1.37 m. This sharp rise indicates a component of direct rainfall recharge and good connectivity between the siltstone aquifer and overlying sands and gravels at this location. A rise in water levels of 1.33 m in BH7K over a period of 3 months (to March 2023) indicates slower groundwater recharge through the overlying sands and gravels and into the bedrock. The steady rise in water levels in this monitoring well is consistent with it being at a higher elevation (to the northeast of the Site), within an area of recharge.
- 2.3.12 Monitoring wells BH2K and BH6K show very little response to rainfall. This indicates that they receive little recharge due to having water contained within poorly connected fractures deep within the slate (as in BH2K), or by being overlain with a clay rich unit of sands and gravels (as in BH6K).

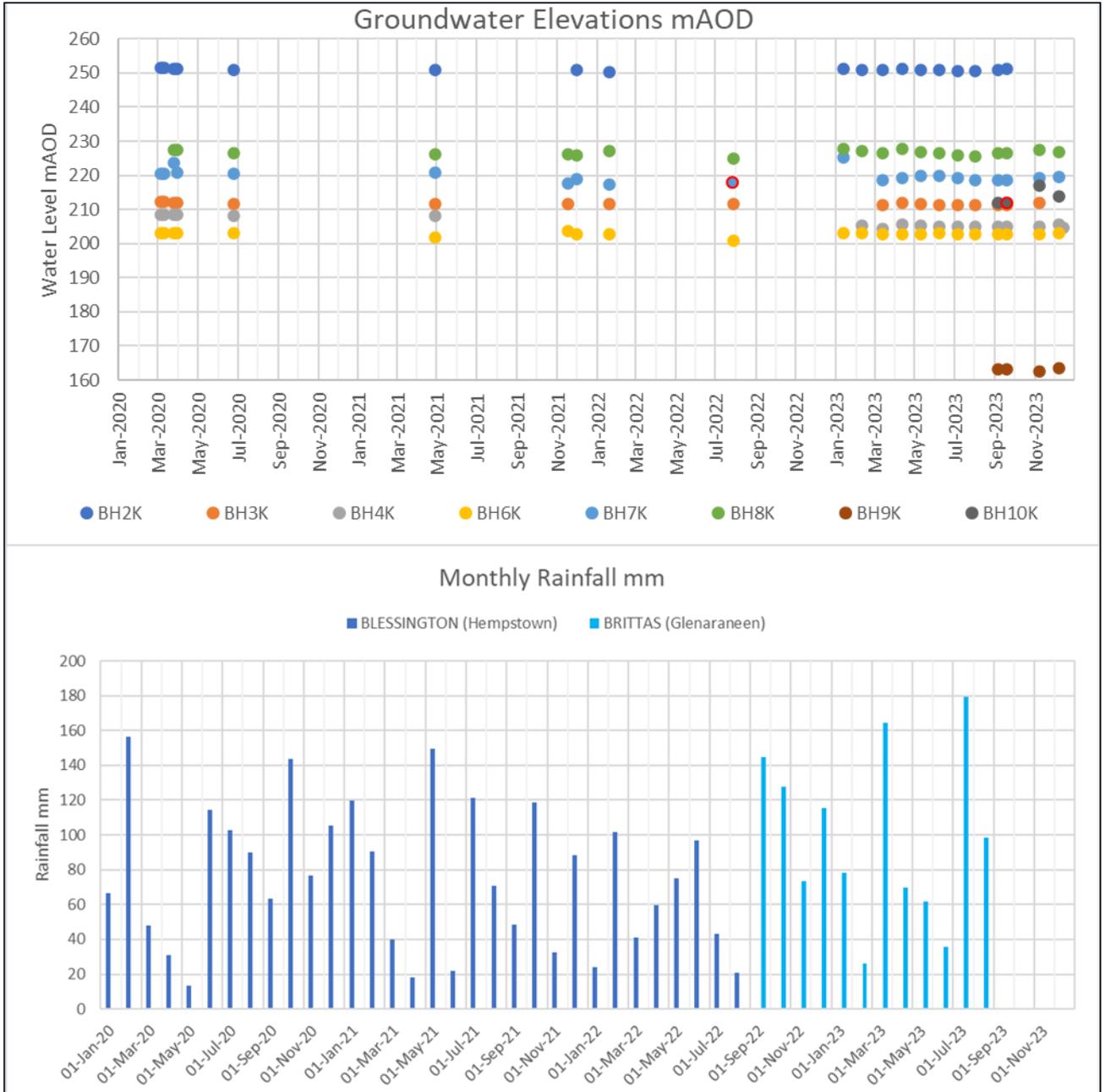


Figure 2-6 - Groundwater Elevations Over Period 2020-2023

- 2.3.13 The available groundwater levels show no indication of drawdown over the review period. This confirms that there has not been any active dewatering with mining activities of the sands and gravels or greywacke rock. This confirms that mining activities have not intercepted the groundwater confined within the greywacke or siltstone bedrock.
- 2.3.14 Groundwater contours generated for September 2023 indicate that groundwater movement into the middle of the Site is predominantly from the northeast, and leaves the Site in a north-westerly direction (Figure 2-7). Recent water levels from BH10K indicate that there is a groundwater high beneath Glen Ding Wood to the southwest of Site. This forms a secondary area of recharge to that to the northeast of site. A deep water level recorded in BH9K has steepened the groundwater gradient in this area in comparison to previous understanding.

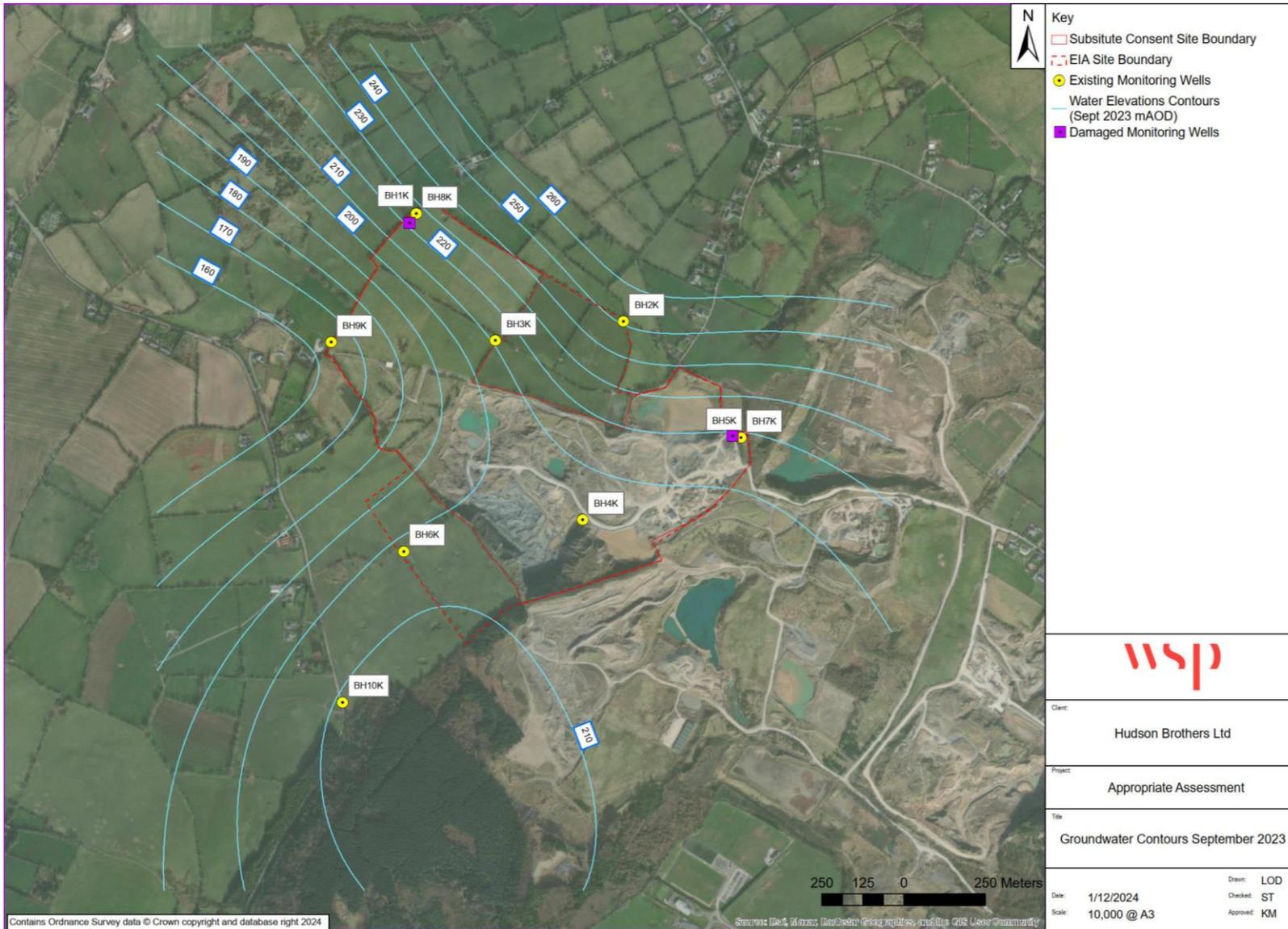


Figure 2-7 - Groundwater Contours September 2023



GROUNDWATER QUALITY

- 2.3.15 There was no water quality sampling conducted in 2022. Water quality samples have been recorded on four occasions in 2023 (January, May, November, and December). Samples were collected from monitoring wells and artificial ponds/lagoons. They were subject to field measurements - pH, conductivity and temperature for all samples, and dissolved oxygen (DO) and redox potential for monitoring wells only. They were also subject to a standard suite of laboratory analyses. Sampling was not possible from BH3K or BH4K due to complications in with hydraulic head and accessing the base of the well (please refer to rEIAR – Chapter 7).
- 2.3.16 Average field measurement values for the artificial lagoons were found to be within normal ranges. For monitoring wells, conductivity, temperature and pH were within normal ranges. DO and Redox values indicate the groundwater to be well oxygenated and displays aerobic characteristics.

DUST MONITORING

- 2.3.17 Dust emissions from the Site have been monitored monthly for the duration of the review period. Monitoring locations are shown in Figure 2-8.
- 2.3.18 Overall, the average concentrations of deposited dust during the assessment period were 231.2 mg/m²/day, which includes the recorded exceedances. This amounts to 66% of the limit value of 350 mg/m²/day.

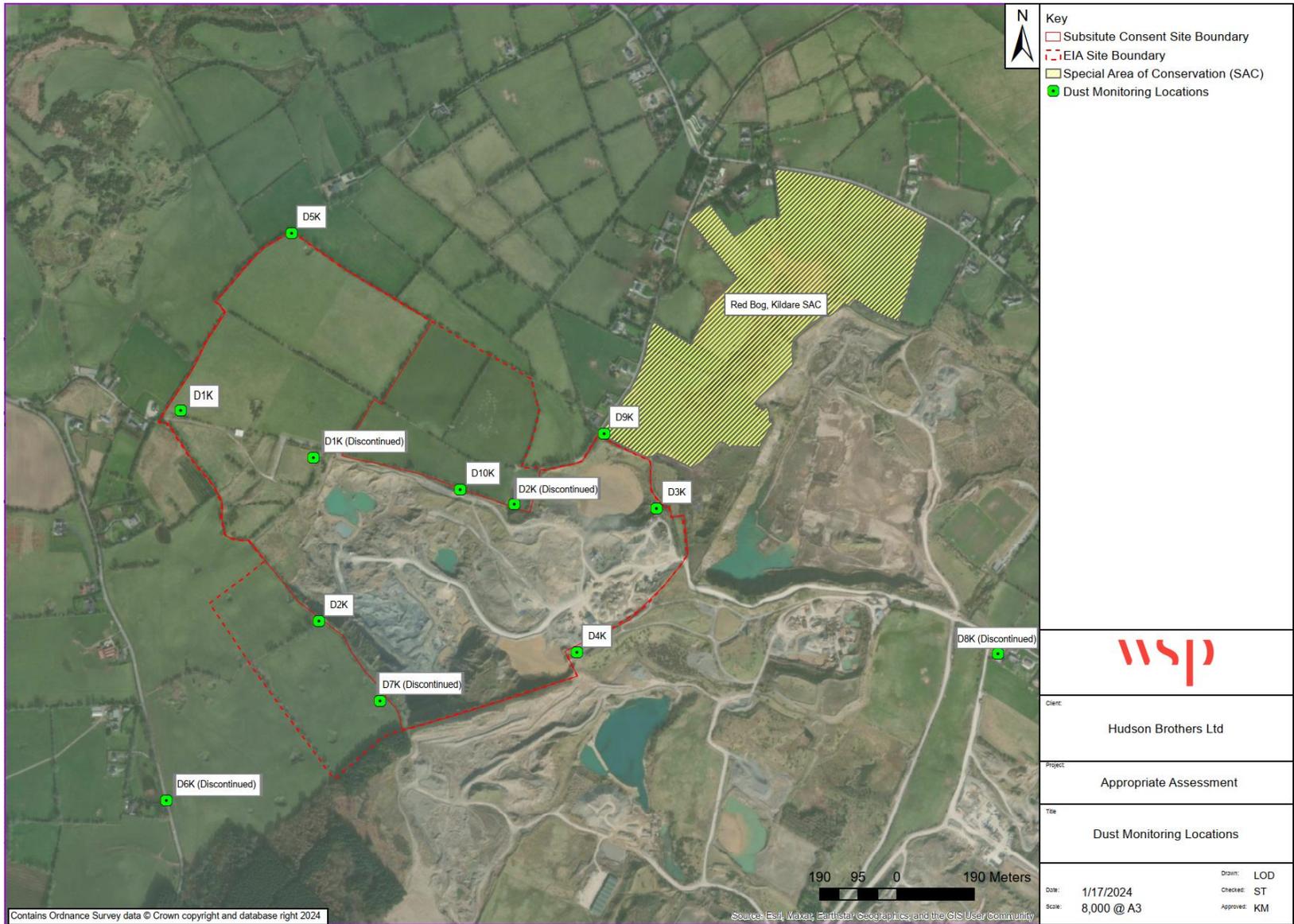


Figure 2-8 - Dust Monitoring Locations

3 APPROPRIATE ASSESSMENT CONTEXT

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 remedial 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 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 Appropriate Assessment, to be lawfully conducted, in summary:
 - i. must identify, in the light of the best scientific knowledge in the field, all aspects of the development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;
 - ii. must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and
 - iii. may only include a determination that the 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 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

EUROPEAN UNION HABITATS DIRECTIVE

3.2.1 Article 6(3) of the Habitats Directive sets out the need for 'Appropriate Assessment' 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 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 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 or not 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 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.

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 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.

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 or not 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 Remedial 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 (EC, 2021) Communication from the Commission on the Precautionary Principle (European Commission 2021).
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- European Commission (2018). 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 DG Environment (2013) Interpretation Manual of European Union Habitats EUR28.Nature ENV B.
- Fossitt, J. (2000) A Guide to Habitats in Ireland. Heritage Council.
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018).
- 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. Species Assessments Volume 3. Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- OPR Practice Note PN01 (2021) Appropriate Assessment Screening for Development Management. Office of the Planning Regulator.
- Smith, G. F., O'Donoghue, P., O'Hara, K., Delaney, E. (2011) Best Practice and Guidance for Habitat Surveying and Mapping. Heritage Council.
- 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 Appropriate Assessment 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."

4 APPROPRIATE ASSESSMENT SCREENING (STAGE 1)

4.1 IDENTIFICATION OF RELEVANT EUROPEAN SITES

- 4.1.1 The Office of the Planning Regulator (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, 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 have been affected by the continuation of quarrying at the existing 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' habitat⁵)). The EZol was initially 15 km, extended to 20 km for SPAs based on the upper-range commuting distance of pink-footed (*Anser brachyrhynchus*) and greylag geese (*Anser anser*) (Scottish Natural Heritage (SNH), 2016).
- 4.1.3 Table 4-1 provides details of the Qualifying Interests (QIs)⁶ of each of the European sites identified within the EZol of the Development, the approximate distance and direction of each European site, and if there is potential connectivity⁷. The locations of these European sites in relation to the Site are shown in Figure 4-1.
- 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 5.2.2).

⁵ 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.

⁶ 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.

⁷ Information on designated sites was obtained from freely downloadable datasets from National Park and Wildlife Service (NPWS). Available at: <https://www.npws.ie/fag/site-designation>



A NOTE ON CONNECTIVITY FOR DUST EMISSIONS

- 4.1.5 As a point of reference, the IAQM⁸ (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.

⁸ Institute for Air Quality Management.

Table 4-1 - European Sites within the EZol of the Existing Development

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Red Bog SAC (000397)	SAC boundary ⁹ is adjacent to Substitute Consent Boundary, but separated by a local (L) road. 150 m north-east (from nearest active area – haul road)	Per Geological Survey Ireland (GSI) Spatial Resources ¹⁰ , the Site and this SAC are 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. More detail about the specific groundwater conditions surrounding the Site are presented later in the report. At this stage, it is concluded that there is potential groundwater connectivity . The SAC boundary is more than 100 m from the nearest source of dust emissions, which according to IAQM (2016) is outside the range in which significant impacts are likely to occur. The haul road in question is separated from the SAC by an earthen berm. Further detail on the likely impacts of dust emissions from the Site on this SAC are discussed later in the report. At this stage it is concluded that there is potential connectivity for dust emissions	<ul style="list-style-type: none"> ▪ Transition Mires [7140]
Poulaphouca Reservoir SPA (004063)	2.2 km south-east	No hydrological connectivity. The qualifying species of this SPA are primarily associated with large bodies of water, which are present onsite in the form of (albeit small) settlement lagoons. The magnitude of disturbance associated with the activities at the Site is such that the lagoons are completely devoid of vegetation and do not provide a foraging resource for waterfowl (see Section 4.2). Greylag goose is known to occasionally forage away from water on agricultural grassland, which is present at the Site around the periphery of the existing quarry pit. According to the Bird Foraging Table, prepared by the Department of Agriculture, Food and the Marine (DAFM, 2020), projects more than 1 km from an SPA may be screened out for impacts on foraging lesser black-backed gulls, on the grounds that it is further than its established	<ul style="list-style-type: none"> ▪ Greylag Goose [A043] ▪ Lesser Black-backed Gull <i>Larus fuscus</i> [A183]

⁹ It should be noted that the SAC boundary surrounds the main area of qualifying habitat (transition mire), as well as up to 240 m of peripheral improved agricultural grassland.

¹⁰ <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228> (accessed 21 November 2023)

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		<p>core foraging range. The core foraging range for greylag geese is accepted as being 20 km (SNH, 2016).</p> <p>Given that the Development is within the core foraging range of greylag geese, and given the presence of suitable foraging habitat on adjacent lands, there is functional connectivity with this SPA. There is no functional connectivity for lesser black-backed gull.</p>	
Wicklow Mountains SAC (002122)	5 km south-east	<p>No hydrological connectivity.</p> <p>This SAC is designated for habitats only; there is therefore no functional connectivity with the Development.</p>	<ul style="list-style-type: none"> ■ Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110] ■ Natural dystrophic lakes and ponds [3160] ■ Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] ■ European dry heaths [4030] ■ Alpine and Boreal heaths [4060] ■ Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130] ■ Species-rich <i>Nardus</i> 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 (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladanii</i>) [8110] ■ Calcareous rocky slopes with chasmophytic vegetation [8210] ■ Siliceous rocky slopes with chasmophytic vegetation [8220] ■ Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] ■ Otter <i>Lutra lutra</i> [1355]
Wicklow Mountains SPA (004040)	8.3 km south-east	<p>No hydrological connectivity.</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</p>	<ul style="list-style-type: none"> ■ Merlin <i>Falco columbarius</i> [A098] ■ Peregrine falcon <i>Falco peregrinus</i> [A103]

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		<p>of 6.5 km. In a study of Co. Wicklow peregrine populations, Burke <i>et al.</i> (2015) found that the mean distance between nests was 5.7 km.</p> <p>The Development is therefore out of the range in which SPA populations would nest at the Site. There is no functional connectivity for nesting merlins or peregrine falcons.</p> <p>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.</p> <p>Natural England (2020) states that peregrine falcons will defend a nesting territory ranging from 2-9 km from their nest. For this reason, Natural England recommends a zone of influence of 10 km for peregrine falcon.</p> <p>The Development is within the range in which SPA populations of peregrine falcon may forage and defend a nesting territory. As such, there is functional connectivity for foraging peregrine falcon. There is no functional connectivity for foraging merlin.</p> <p>Previous reporting, as well as information provided to WSP by the Applicant, indicates that peregrine falcons regularly nest at the top of one of the walls of the quarry pit.</p> <p>It should be noted that the presence of peregrine falcons at the Site does not represent connectivity with Wicklow Mountains SPA. For the reasons outlined above, these individuals are not associated with the population for which the SPA is designated. As such, they fall outside the remit of AA, but are addressed separately through the Ecological Impact Assessment process, as presented in the rEIAR.</p>	
Glenasmole Valley SAC (001209)	14.3 km north-east	<p>No hydrological connectivity.</p> <p>Petrifying springs are GWDTEs, but this SAC is not in the same groundwater body as the Site. There is no groundwater connectivity.</p> <p>This SAC is designated for habitats only; there is therefore no functional connectivity with the Development.</p>	<ul style="list-style-type: none"> ■ Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites) [6210] ■ <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
			<ul style="list-style-type: none"> ■ Petrifying springs with tufa formation (Cratoneurion) [7220]
Ballynafagh Lake SAC (001387)	18.1 km north-west	<p>No hydrological connectivity.</p> <p>Alkaline fens are GWDTEs, but this SAC is not in the same groundwater body as the Site. There is no groundwater connectivity.</p> <p>Desmoulin's whorl snail <i>Vertigo moulinsiana</i> is a climbing species of emergent vegetation living throughout the year in wet marshy habitat (Killeen, 2003). Its principal method of dispersal is by transportation in the water column. There is no hydrological connectivity with the SAC.</p> <p>Marsh fritillary rarely flies more than 100m from where they hatch with the caterpillars feeding exclusively on Devil's-bit Scabious <i>Succisa pratensis</i> invalid source specified., which is a species of plant commonly associated with peatland and not present onsite.</p> <p>Given that there is no hydrological connectivity, and given the distance between the SAC and the Site, there is therefore no functional connectivity.</p>	<ul style="list-style-type: none"> ■ Alkaline fens [7230] ■ Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> [1016] ■ Marsh Fritillary <i>Euphydryas aurinia</i> [1065]
Ballynafagh Bog SAC (000391)	18.4 km north-west	<p>No hydrological connectivity.</p> <p>This SAC is designated for habitats only; there is therefore no functional connectivity with the Development.</p>	<ul style="list-style-type: none"> ■ Active raised bogs [7110] ■ Degraded raised bogs still capable of natural regeneration [7120] ■ Depressions on peat substrates of the Rhynchosporion [7150]
Pollardstown Fen SAC (000395)	18.7 km west	<p>No hydrological connectivity.</p> <p>Petrifying springs and alkaline fens are GWDTEs, but this SAC is not in the same groundwater body as the Site. There is no groundwater connectivity.</p> <p>All species of <i>Vertigo</i> for which this SAC is designated are dispersed via transportation in the water column.</p>	<ul style="list-style-type: none"> ■ Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae [7210] ■ Petrifying springs with tufa formation (Cratoneurion) [7220] ■ Alkaline fens [7230] ■ Geyer's Whorl Snail <i>Vertigo geyeri</i> [1013] ■ Narrow-mouthed Whorl Snail <i>Vertigo angustior</i> [1014] ■ Desmoulin's Whorl Snail [1016]



Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		Given that there is no hydrological connectivity, and given the distance between the SAC and the Site, there is therefore no functional connectivity .	
Moud's Bog SAC (002331)	16.4 km west	No hydrological connectivity. This SAC is not designated for a GWDTE so therefore, there is no groundwater connectivity . This SAC is designated for habitats only; there is therefore no functional connectivity with the Development.	<ul style="list-style-type: none">▪ Active raised bogs [7110]▪ Degraded raised bogs still capable of natural regeneration [7120]▪ Depressions on peat substrates of the Rhynchosporion [7150]

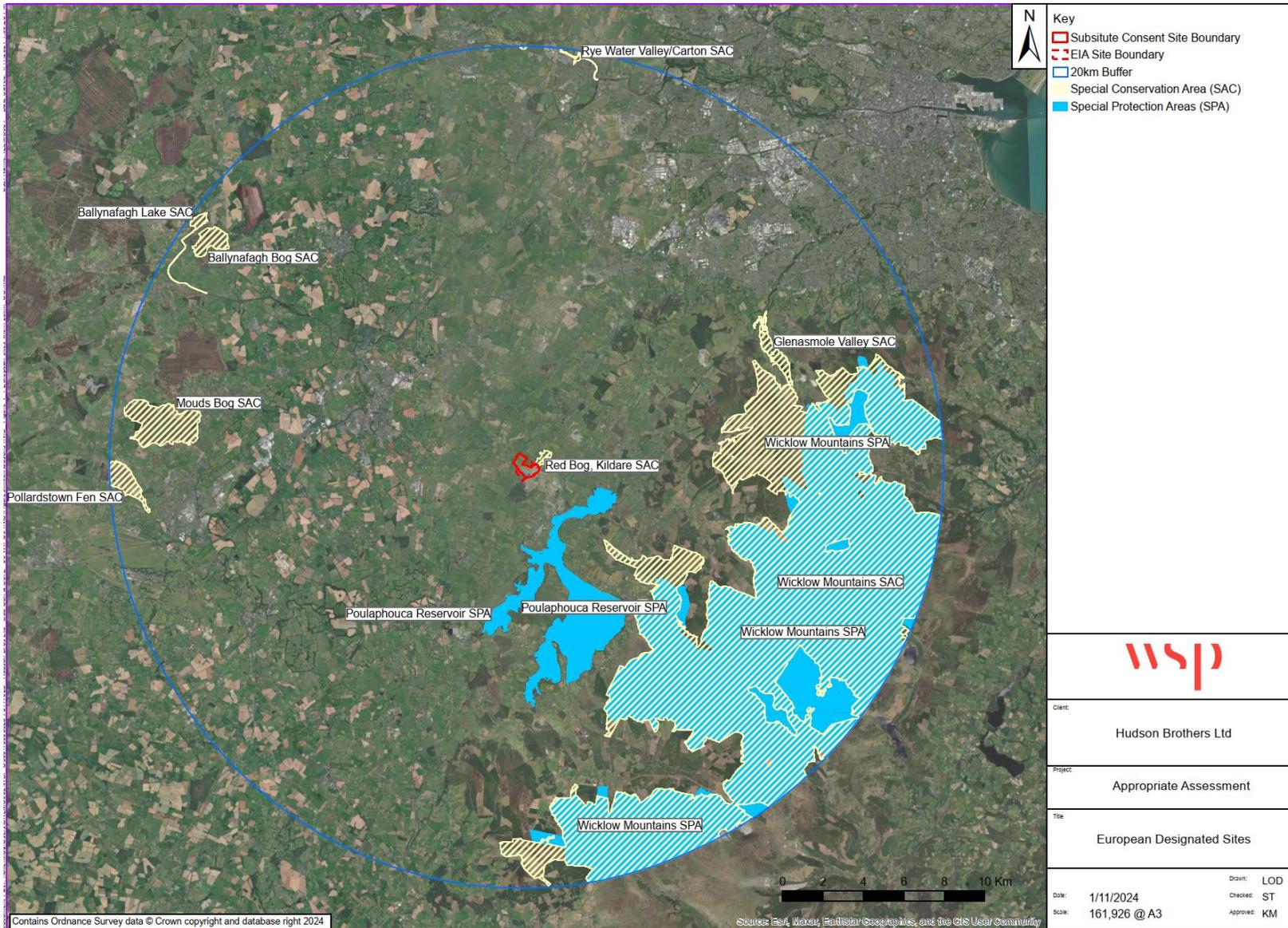


Figure 4-1 - European sites within 20 km of the Site.

- 4.1.6 Based on the information presented in the above table, it has been concluded that the Site is potentially connected to **Red Bog SAC**, by virtue of the location of the Site and the SAC being above the same groundwater body. Furthermore, the Development is considered to be functionally connected to **Wicklow Mountains SPA** and **Poulaphouca Reservoir SPA**, because of the Site'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.
- 4.1.7 The Site is not hydrologically, functionally or otherwise connected to any other European sites.

4.2 SITE SURVEY

- 4.2.1 A survey of the Site was carried out on 14 and 15 November 2023. The survey comprised a multi-disciplinary site walkover, with a view to updating baseline data since the previous surveys in August 2019 and August 2020. The survey area included the existing quarry pit, as well as surrounding lands within the EIA boundary as shown in Figure 2-1.
- 4.2.2 Much of the data gathered is relevant to Ecological Impact Assessment (EclA) but outside the scope of AA. The results of the Site 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 Development has been deemed to have connectivity. Full survey results are included in the rEIAR.
- 4.2.3 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).

RESULTS

- 4.2.4 The following observations are relevant to the AA 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. Silt lagoons were present (classified as 'FL8 – Artificial Lakes and Ponds'), although one of those recorded previously had since been filled in, and a new one created. No flora or fauna were observed in association with any of these silt lagoons.
 - Approximately 1.12 ha of improved agricultural grassland has been removed. Aerial imagery (see **Figure 4-2**) indicates that excavation occurred between January and October 2023.
 - Aside from the above-mentioned loss of grassland, the existing quarry pit has not extended laterally so as to result in the loss of any other peripheral habitats.
 - Cattle were observed grazing inside the boundary of Red Bog SAC.
 - Greylag geese were not observed in the quarry pit or in any of the surrounding habitats (in 2019 or 2023);

- No invasive¹¹ flora were observed during the survey (either in 2019 or 2023);
- Two Sika deer (*Cervus nippon*) were observed in 2020 and 2023 (Third Schedule of S.I. 477/2011);
- Grey squirrel (*Sciurus carolinensis*) was observed in 2020 (Third Schedule of S.I. 477/2011);
- A herd of (ca. 20) feral goats (*Capra hircus*) was observed in 2020 and 2023. Feral goats are not listed in S.I. 477/2011, but their voracious foraging habit is well-known, and are considered on equal footing to Sika deer in the context of their potential detrimental effects on ecological receptors within the development.

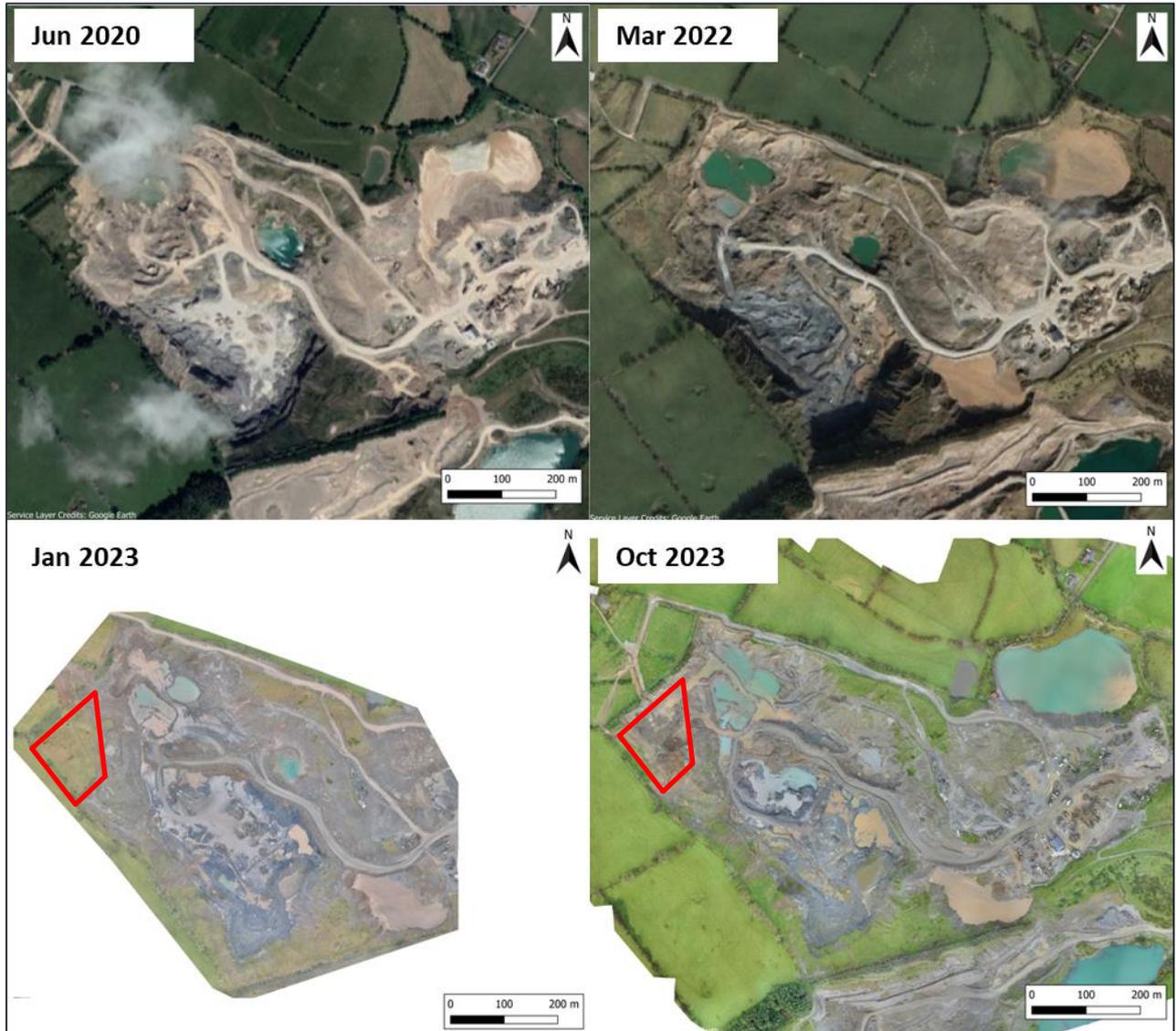


Figure 4-2 - Site Aerials in June 2020, March 2022, January 2023 and October 2023 (Images from Google Earth, ESRI and site surveys).

¹¹ 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.



LIMITATIONS

- 4.2.5 The 2023 survey was undertaken at a sub-optimal time for botanical surveys. However, the survey in 2019 was undertaken in August, which is during the optimal survey period and during which invasive flora would be visible if present. Certain species of invasive flora maintain an above-ground presence throughout the winter, such as Japanese knotweed *Reynoutria japonica* and *Rhododendron*. For these reasons, the carrying out of surveys in November 2023 is not considered a significant limitation.

5 ASSESSMENT OF LIKELIHOOD OF SIGNIFICANT EFFECTS

- 5.1.1 This section identifies whether the impacts associated with the Development are likely to have given 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 3.2.8, 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 have not been taken into account 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 existing Development. A screening conclusion is then presented for each European site, identifying if there are any LSEs from the existing Development (Table 5-2).

ARTICLE 6(3) STATEMENT

- 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.

WATER – SURFACE AND GROUND

- 5.2.2 In accordance with the surface water management arrangements at the Site (see Section 2.3) and the nature of the topography at the Site, surface water does not discharge from the Site.

- 5.2.3 With respect to groundwater:

- Groundwater gradient is to the west/northwest;
- Works have not interfaced with the groundwater table; and
- Physico-chemical analysis of groundwater within, and down-gradient of the Site indicate that groundwater quality perturbations have not occurred.

- 5.2.4 A hydrogeological report on Red Bog SAC (100 m from Site boundary) carried out for Hudson Brothers Ltd. (Golder Associates, 2008) states the following in relation to the bog’s water source:

‘Notwithstanding the possibility of intermittent springs and seepages, the source of water for this type of formation (Red Bog) is principally confined to precipitation. The hydraulic catchment for Red Bog is expected to extend little further than its surface expression. Overland flow will occur around the immediate periphery during storm events, but this influence is not expected to extend the catchment radially by more than several metres’

- 5.2.5 It should also be noted that the most up-to-date groundwater monitoring data from monitoring well BH2K (adjacent to Red Bog SAC) indicates that the groundwater table has not encroached any closer than 5.8 m below the top of the well casing (mBTOC), as illustrated in **Figure 5-1**. The original water strike depth when the well was drilled was 26m, indicating that the groundwater table

is confined at depth. Pressure has caused the water levels to rise up in the well. This is consistent with conclusions drawn in the Environmental Impact Statement (EIS) submitted with the planning application in 2007, and the EIAR submitted in 2020, both of which stated that the surface waterbody associated with Red Bog, Kildare SAC is a perched water feature. Red Bog, Kildare SAC is therefore isolated from the groundwater table.

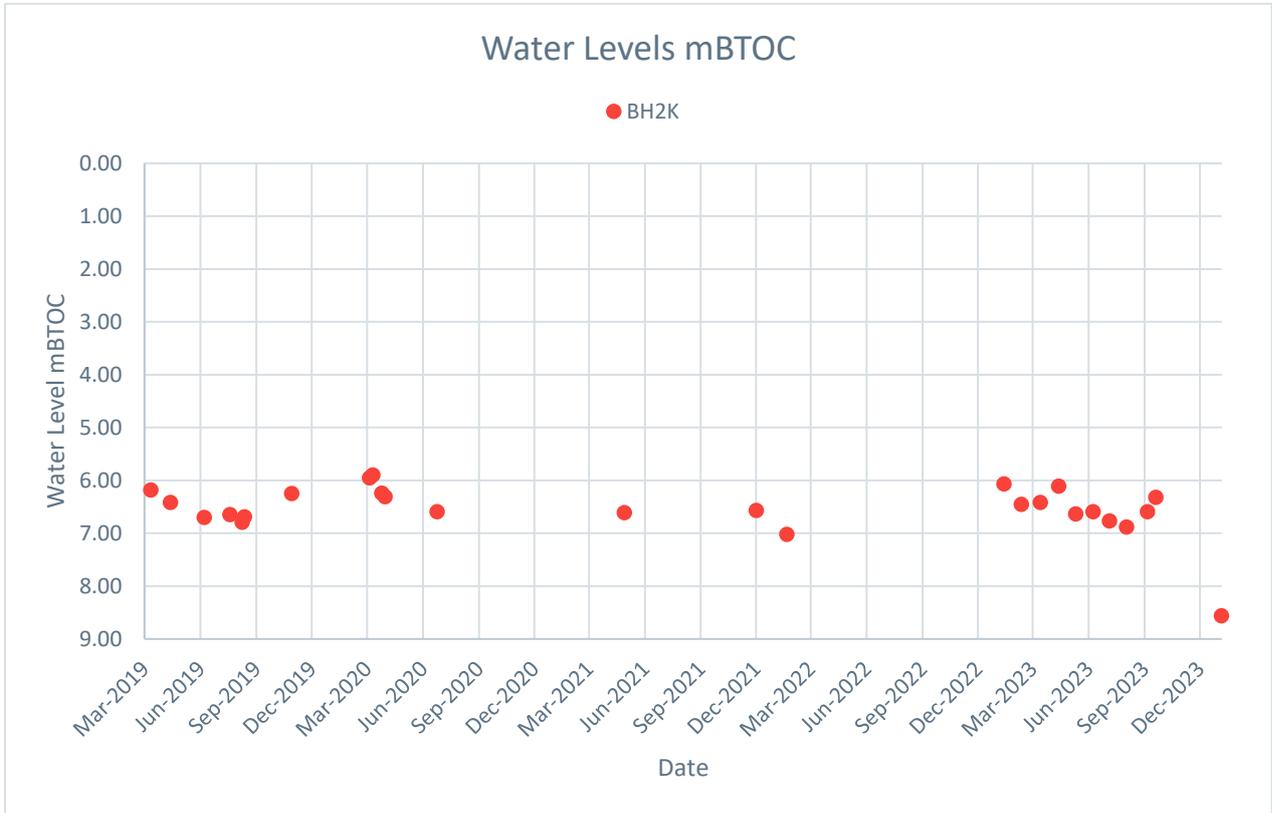


Figure 5-1 - Groundwater Levels at Monitoring Well BH2K

DUST

- 5.2.6 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/day¹²) and the likelihood of a significant effect is therefore very low except on the sites with the highest dust release close to sensitive habitats.”
- 5.2.7 Prajapati (2012) states that chemical effects of reactive materials (such as cement dust, and particulate sulphates/nitrates¹³) become evident at concentrations of approximately 2 g/m², with reference to a study by Grantz *et al.*, 2003.
- 5.2.8 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 more sensitive bryophyte

¹² >1000 mg/m²/day

¹³ It should be noted that no cement dust, nor any sulphate/nitrate mineral dust is produced by the Site.

communities¹⁴ 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.

5.2.9 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. This wording is slightly confusing – it essentially 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 Site, Red Bog 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 impacts¹⁵, 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.

Table 5-1 – Characterising the Sensitivity of an Area to Ecological Impacts (from IAQM, 2014)

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

SITE DUST EMISSIONS

5.2.10 The dust emissions at the nearest monitoring points to Red Bog SAC (D3K and D9K) are shown in Figure 5-2. Please refer to Figure 2-8, which shows the locations of dust monitoring stations. The maximum recorded emissions were 698 and 213 mg/m²/day from D3K and D9K respectively. Mean dust emissions were 190 and 119 mg/m²/day from D3K and D9K respectively.

¹⁴ Relevant in the context of Red Bog SAC.

¹⁵ This is consistent with the studies cited by Farmer (1993).

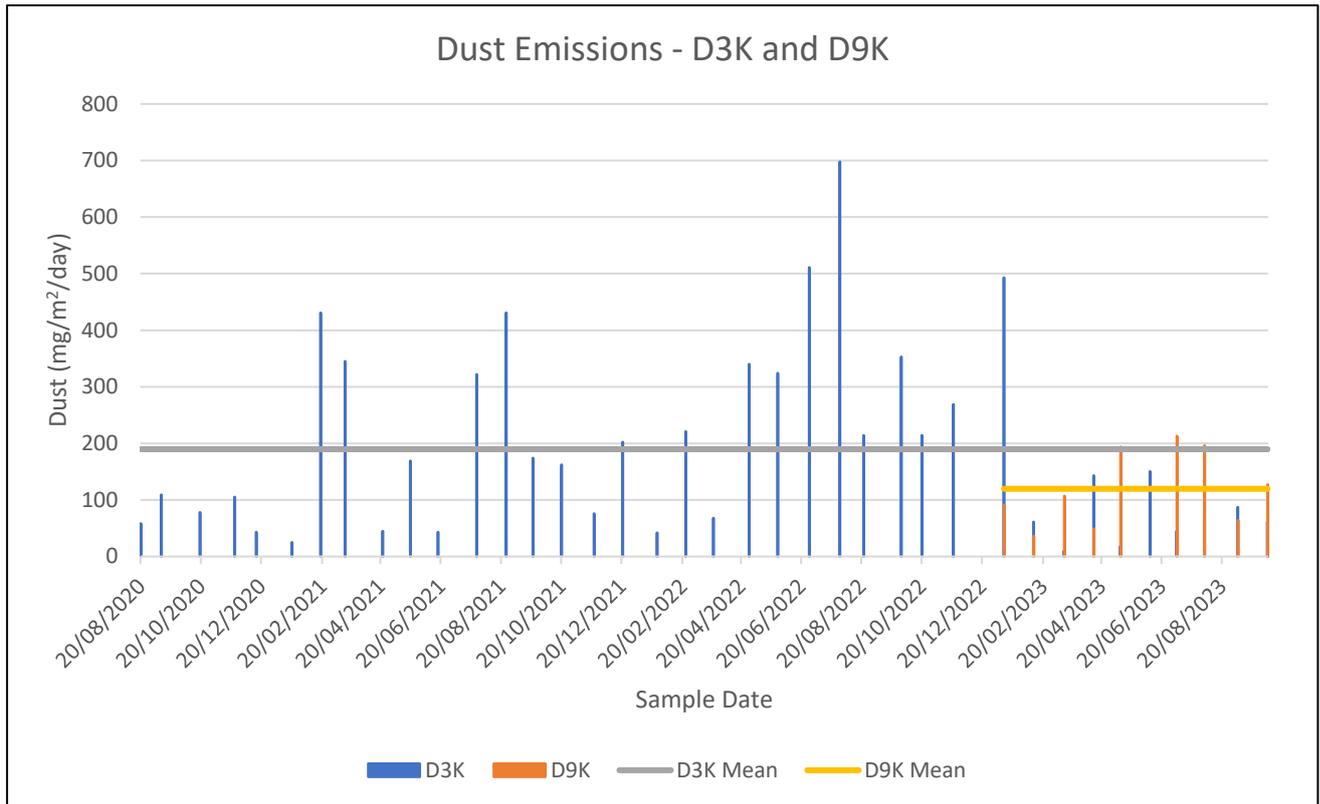


Figure 5-2 - Dust Emissions at D3K and D9K (August 2020-October 2023)

NOISE

- 5.2.11 It should be re-emphasised that the assessment period spans between September 2020 and the present day, during which there has been no intensification of operations that would have led to an increase in noise emissions.
- 5.2.12 Figure 5-3 shows the noise monitoring results between April 2019 and October 2023. It can be observed that noise emissions from the Site have remained reasonably constant, and are comparable with emissions prior to the assessment period.
- 5.2.13 The monitoring point at which the highest noise emissions were observed was N1K, located adjacent to the R410, which is the main road between Naas and Blessington.
- 5.2.14 According to the noise assessment presented in Chapter 10 (Noise) of the rEIAR, due to the proximity of traffic passing the N1K monitoring location, it is more appropriate to consider the L_{A90} noise levels (as opposed to L_{Aeq}) when assessing the magnitude of ambient noise at this point (which allows the effects of intermittent nearby traffic to be screened out). Applying this measurement, noise emissions at this location fluctuated between ca. 35-45 dB(A). Some survey observations at this location included comments that no sounds from the quarry were audible at times, even during low traffic levels. Frequent sources of noise included birdsong and rustling leaves.

The threshold for noise emissions (55 dB), as applied in the rEIAR, is based on thresholds set by the Environmental Noise Regulations (S.I. 140/2006) and incorporated into Kildare County Council's

Third Noise Action Plan 2019 - 2023¹⁶. This 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 is unlikely to cause a response in waterbirds.

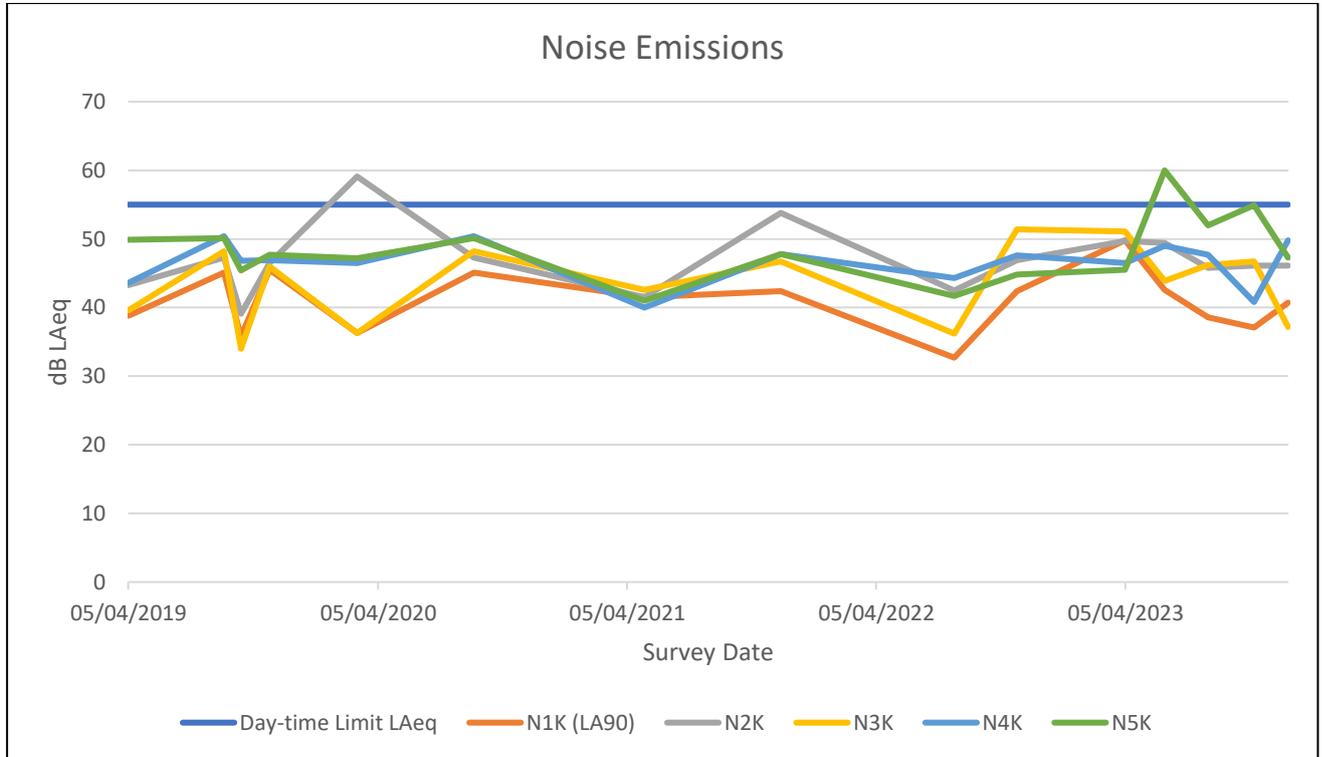


Figure 5-3 - Noise Emissions 2019-2023

HABITAT LOSS

- 5.2.15 Approximately 1.12 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 low. Peregrine falcon and greylag goose do not roost or nest on grassland.

INVASIVE SPECIES

FLORA

- 5.2.16 Considering the nature of the activity at the Site, in particular the ingress of vehicles, plant and machinery and their associated soil disturbance, the transport into the Site of seeds and viable tissue of invasive flora is an inherent possibility. However, the below points have also been considered:
- No invasive flora were observed in 2019 or 2023;
 - Access to the Site is via the haul road to the south, which does not intersect or run adjacent to Red Bog SAC;
 - The qualifying species of Poulaphouca Reservoir SPA are not considered to be sensitive to the potential movement of terrestrial invasive flora. Over a prolonged period, greylag goose terrestrial

¹⁶ <https://kildarecoco.ie/AllServices/Environment/NoiseNuisance/>

foraging habitat might be lost to (e.g.) Japanese knotweed scrub, but the assessment period (2020-present) is not long enough for such an effect to have occurred.

- 5.2.17 Considering the above, the spread of invasive species from the Site is considered highly unlikely to have occurred during the assessment period. Even in the event that this has occurred, there has been no substantial change in the landscape such that there has been a decrease in available foraging habitat for greylag goose, as a result of the spread of invasive species.

FAUNA

- 5.2.18 Grey squirrel, sika deer and feral goats were observed during site surveys. Sika deer and feral goats are known to contribute to the deterioration of habitat condition through overgrazing, and grey squirrel out-competes native red squirrel for ecosystem resources. However, the habitat assemblage in 2023, when compared to that from 2019/2020 did not exhibit signs of substantial alteration that could be attributed to invasive fauna. These species were observed during both surveys, so their presence does not represent the introduction of invasive fauna during the assessment period.



5.3 EFFECTS IN ISOLATION

Table 5-2 - Appropriate Assessment Screening – Effects in Isolation

Site Activity	Potential Impacts	Screening Assessment	LSEs	
Red Bog SAC (000397)				
Continuation of quarrying activities between 2020 and the present day.	Groundwater contamination, leading to deterioration in habitat condition; Changes to groundwater regime (i.e. fluctuations in level).	As per Sections 5.2.3 and 5.2.4: <ul style="list-style-type: none"> ■ Groundwater gradient is to the west/northwest (and therefore away from the SAC); ■ Works have not interfaced with the groundwater table; ■ Physico-chemical analysis of groundwater within, and down-gradient of the Site indicate that groundwater quality perturbations have not occurred; and ■ The SAC is a perched water feature and therefore does not interface with the groundwater table. <p>It has therefore been concluded that significant effects to qualifying habitat (transition mires) did not occur as a result of groundwater emissions over the assessment period.</p> <p>No LSE</p>	None	
	Dust emissions, leading to deterioration in habitat condition.	With reference to guidance from IAQM (2014, 2016) and literature reviews by Farmer (1993) and Prajapati (2012) (refer to Sections 5.2.6 - 5.2.10), the dust emission levels at this area of the Site have not been of a magnitude so as to give rise to significant effects on the qualifying habitat of the SAC (transition mires) over the assessment period.	No LSE	None
	Spread of invasive species, leading to a deterioration of habitat condition, and a decrease in area coverage of qualifying habitat.	As per Sections 0 and 5.2.17, the spread of invasive species from the Site during the assessment period is considered highly unlikely to have occurred.	No LSE	None
Wicklow Mountains SPA (004040)				
Continuation of quarrying activities	Habitat loss, leading to a reduction in foraging resource.	Approximately 1.12 ha of agricultural grassland was removed in 2023. Considering the abundance of this habitat in the context of the surrounding environment, and considering also the distance of the Site from the SPA (beyond peregrine falcon's core foraging range), the loss	None	



Site Activity	Potential Impacts	Screening Assessment	LSEs
between 2020 and the present day.		of this quantity of agricultural grassland is not considered to represent a significant loss of foraging resource for SPA populations of peregrine falcon. No LSE	
Poulaphouca Reservoir SPA (004063)			
Continuation of quarrying activities between 2020 and the present day.	Noise emissions, leading to disturbance of foraging greylag geese in adjacent agricultural grassland.	Since 2020, there has been no substantial change in circumstance – the area footprint of the quarry has remained the same and the intensity of activity within the quarry has not increased. As such, there has been no habitat loss, and no increase in noise emissions over the assessment period. It has therefore been concluded that significant effects to foraging greylag geese did not occur over the assessment period. No LSE	None
	Habitat loss, leading to a reduction in foraging resource.	Approximately 1.12 ha of agricultural grassland was removed in 2023. Considering the abundance of this habitat in the context of the surrounding environment, the loss of this quantity of agricultural grassland is not considered to represent a significant loss of foraging resource for SPA populations of greylag goose. No LSE	None
	Spread of invasive species, leading to a decrease in available foraging habitat for greylag goose.	As per Sections 0 and 5.2.17, the spread of invasive species from the Site during the assessment period is considered highly unlikely to have occurred. Even in such an event, a substantial period of time would need to have elapsed before significant effects can be deemed to have occurred in this context. No LSE	None

CONCLUSION – EFFECTS IN ISOLATION

- 5.3.1 When considered in isolation, the unauthorised activities at the Site were found to have **no potential** to have resulted in significant effects to Red Bog SAC or Poulaphouca Reservoir SPA during the assessment period, as outlined in Table 5-2. All other European sites have been screened out from further consideration.

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.

GROUNDWATER

- 5.4.3 Considering the lack of groundwater connectivity between the Site and Red Bog SAC as described, it is considered that there is no potential for any effects to have occurred during the assessment period. Groundwater in-combination effects are therefore screened out from further assessment.

NOISE AND DUST

- 5.4.4 Given that there is connectivity for noise (Poulaphouca Reservoir SPA) and dust emissions (Red Bog SAC), the potential for these to act in combination with other projects must be considered. The scope of this in-combination assessment has therefore considered other plans and projects with a radius of 500 m of the Site. A distance of 500 m was chosen based on the distance of noise monitoring station N1 from the edge of the existing quarry pit. N1 is the furthest monitoring station from the existing quarry pit, and noise impacts from the quarry at this location have been deemed to be insignificant (see Section 5.2). As such, 500 m has been chosen as a representative distance beyond which noise impacts did not occur. In addition, in accordance with Table 5-1, dust impacts are considered up to a distance of 50 m from the boundary of Red Bog SAC.

HABITAT LOSS

- 5.4.5 The loss of grassland as a resource for foraging birds was found to be insignificant in isolation, but it may contribute to large-scale habitat loss in the wider environment, which itself may be significant. A search for all potential grassland loss within a 20 km radius¹⁷ of Poulaphouca Reservoir SPA was considered disproportionately large. In this scenario, projects as far away as Glenmalure, Co. Wicklow would need to be considered, and it is considered highly unlikely that any populations of greylag geese that may have grazed at the Development would have also grazed at a site that is so remote from the Development. Instead, a search for large infrastructural projects within 2 km of the Development was undertaken, which were deemed likely to have resulted in large-scale loss of grassland. This approach was chosen to capture projects which may have been used by the same population of greylag geese that may have also grazed at the Development.

¹⁷ In accordance with the core foraging range of greylag geese.

- 5.4.6 Given that the Development is located beyond the core foraging range for populations of peregrine falcon associated with Wicklow Mountains SPA, the likelihood of in-combination effects is considered low enough to screen these out in the first instance.
- 5.4.7 The in-combination assessment considered planning applications for which permission was granted between September 2015 and November 2023¹⁸. Refused applications and applications for retention were not included for consideration. Retention applications refer to unauthorised works that were already complete and therefore did not interact with the operations at the Site. Similarly, applications for which a decision has yet to be made have also been excluded. Please see **Table 5-3**. Sources for the search of planning applications included:
- Planning Enquiry System – Kildare County Council (<https://webgeo.kildarecoco.ie/planningenquiry> - Accessed 04 December 2023);
 - Planning Enquiry System – Wicklow County Council (<https://www.eplanning.ie/WicklowCC> - Accessed 04 December 2023); and
 - EIA Portal (<https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal> - Accessed 04 December 2023).
- 5.4.8 Kildare County Development Plan 2023-2029¹⁹ and Wicklow County Development Plan 2022-2028²⁰ were also consulted.

Table 5-3 - Planning Applications

Planning Reference	Year Consented/Status	Location	Description of the proposal, and conclusion in respect of LSE in combination with the Development
17541 (Kildare)	Granted 16/04/2018	Redbog, Rathmore, Naas, Co. Kildare. North side of L6038-1. Property entrance is ca. 50m from the boundary of Red Bog SAC.	Construction of a dormer bungalow, domestic garage, septic tank and percolation area and all ancillary works and services. Historic imagery (Google Earth) indicates that this building was completed by March 2020. The activity associated with this project did not occur during the assessment period. The house is located at the rear (north) of the property and screened from the SAC by tall trees. Considering this, as well as the scale of the works concerned, it is highly unlikely to have contributed adverse levels of dust emissions so as to result in negative effects to Red Bog SAC. There is no scope for this project to have interacted with the Site activities occurring during the assessment period. No LSE

¹⁸ The focus of this retrospective in-combination assessment is on development that occurred at within the assessment period. Five years is the standard duration of planning permission, from the date that permission is granted (OPR, 2022). The date range includes projects that may have been granted permission in late 2015, but may not have commenced works until late 2020 (thereby within the assessment period).

¹⁹ <https://kildarecoco.ie/AllServices/Planning/DevelopmentPlans/KildareCountyDevelopmentPlan2023-2029/> - Accessed 04 December 2023

²⁰ <https://www.wicklow.ie/Living/CDP2021> - Accessed 04 December 2023

Planning Reference	Year Consented/Status	Location	Description of the proposal, and conclusion in respect of LSE in combination with the Development
15880 (Kildare)	Granted 22/07/2016	<p>Hillgate, Redbog, Rathmore, Naas, Co. Kildare.</p> <p>North side of L6038-1. Property entrance is ca. 6 m from the boundary of Red Bog SAC.</p>	<p>Removal of existing roof on north side of dwelling, and placing instead a dormer type roof this side to match height of existing dormer roof on dwelling south side, for insertion of 3 new Velux and 2 dormer windows in front/east section of new roof, and 3 new dormer windows and 1 Velux window in rear/west section of new roof, for insertion of 5 new Velux windows in existing roof to south side of dwelling, for changing of existing slate roof covering to a flat concrete tile covering to entire roof, for a new single storey rear extension to dwelling and a new external sliding door on south side ground floor, and for a new single storey detached garage to north side of dwelling and all associated works.</p> <p>Historic imagery (Google Earth) indicates that this building was completed between June 2020 and June 2022. The activity associated with this project therefore occurred during the assessment period.</p> <p>Whilst the property boundary is ca. 6 m from the SAC boundary, the works area is ca. 250m from the qualifying habitat (transition mire).</p> <p>The house is located at the rear (north) of the property and screened from the SAC by tall trees. Considering this, as well as the scale of the works concerned, it is highly unlikely to have contributed adverse levels of dust emissions so as to result in negative effects to Red Bog SAC.</p> <p>Kildare County Council made comments on waste management, wastewater treatment and the appropriate storage of heating oil, but did not query the potential for adverse dust emissions.</p> <p>Considering all of the above circumstances, it is therefore considered that there is no credible possibility for this project to have interacted with the Site activities occurring during the assessment period.</p> <p>No LSE</p>
23503 (Kildare)	Granted 12/09/2023	<p>Red Bog, Blessington, Co. Kildare.</p> <p>North side of L6038-1. Property entrance is ca. 50m from the boundary of Red Bog SAC.</p>	<p>The construction of a detached domestic shed (ca. 60 m²) and all associated site works.</p> <p>Given the recent grant of planning permission, it is not clear whether works have commenced. For the purpose of this assessment, it is assumed that they have.</p> <p>The proposed works area is at the rear (north) of an existing dwelling, and is screened by hedging on all other sides.</p> <p>Whilst the property boundary is ca. 50m from the SAC boundary, the proposed works area is ca. 290m from the qualifying habitat (transition mire).</p>

Planning Reference	Year Consented/Status	Location	Description of the proposal, and conclusion in respect of LSE in combination with the Development
			<p>Kildare County Council did not raise any objections on the grounds of potential adverse dust emissions.</p> <p>Considering all of the above circumstances, it is therefore considered that there is no credible possibility for this project to have interacted with the Site activities occurring during the assessment period.</p> <p>No LSE</p>
18545 (Wicklow)	Granted 10/07/2018	<p>Deerpark and Dillonstown townlands, Blessington, Co. Wicklow.</p> <p>Roadstone Limited quarry, adjacent to the south of the Site.</p>	<p>Extension of planning duration by 5 years. Original planning permission (07441) was granted in 2009 in relation to the below activities:</p> <p>Continuation of extraction of sand & gravel on lands that have been used for this purpose since before 1st October 1964, extending to 16.12 hectares & to a final level not lower than 204 m OD (Malin Head); and extraction of sand & gravel on lands extending to 13.36 hectares to a final level not lower than 240m OD (Malin Head), on a site registered under Section 261 of the Planning & Development Act 2000 all on a 29.48 hectare site for a ten year period.</p> <p>Historical aerial imagery (Google) indicates that there has been no notable change in circumstance (no increase in quarry footprint) during the assessment period.</p> <p>As such, baseline dust and noise emission levels are deemed not to have increased so as to contribute to adverse effects on Red Bog SAC or Poulaphouca Reservoir SPA.</p> <p>No LSE</p>

CONCLUSION – EFFECTS IN COMBINATION

- 5.4.9 Considering the information contained in this section, the Site is highly unlikely to have acted in combination with other plans or projects so as to have resulted in significant effects to any European sites during the assessment period.

6 CONCLUDING STATEMENT

- 6.1.1 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 Appropriate Assessment 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.”
- 6.1.2 The potential impacts of the activities at the Site 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 noise and dust emissions did not have significant effects on Red Bog SAC or Poulaphouca Reservoir SPA, which were the two European sites deemed to have connectivity with the Site. This was found to be the case for the Site alone and in combination with other plans or projects.
- 6.1.3 As significant effects on European sites from the unauthorised activities at the Site have been deemed unlikely, it is therefore determined that Remedial Appropriate Assessment is not required.

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