Hudson Brothers Limited

NATURA IMPACT STATEMENT

Appropriate Assessment Screening and Natura Impact Statement

40000328.R06
FEBRUARY 2024

PUBLIC

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1 INTRODUCTION

1.1 BACKGROUND

1.1.1. WSP Consulting Ireland Ltd (WSP) has been commissioned to provide ecological support to inform a planning application from Hudson Brothers Ltd (the Applicant) to An Bord Pleanála (ABP) for the further development of an existing quarry over approximately 64.0 hectares (ha) located in the townlands of Athgarrett, Philipstown and Redbog, Co. Kildare; hereafter referred to as the 'Proposed Development'.

1.1.2. The further development of the quarry is proposed over areas directly adjacent to the main operational lands already excavated as well as within the existing quarry for the purpose of recovering the economic reserve that remains in the void. The Proposed Development is situated at Irish Ordnance Survey Grid Reference: N 97013 16659; hereafter referred to as the 'Site', and is illustrated in Figure 1-1.

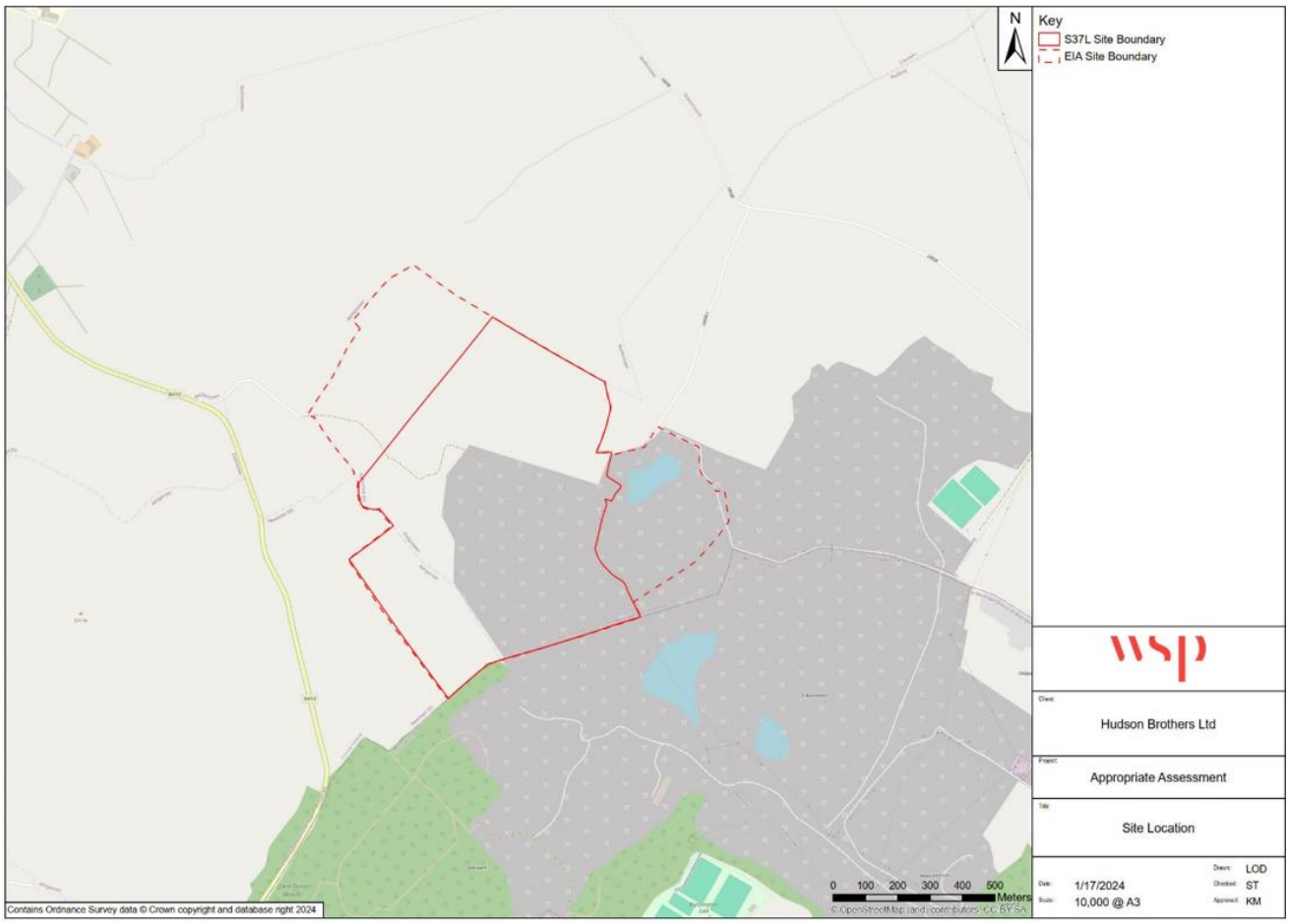

Figure 1-1 - Site Boundaries

1.2 THE HABITATS DIRECTIVE

1.2.1. 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

Directive1'), ABP are required to undertake a Screening for Appropriate Assessment (AA), to determine whether the Proposed Development may have likely significant effects (LSEs) upon European sites, i.e. those that may be present within the Proposed Development's Ecological Zone of Influence (EZoI)[2], 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, 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 developments upon European sites prior to granting consent. The Competent Authorities' 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 Authorities to carry out an AA to determine if the Proposed Development may have adverse effect 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 Statement (NIS) (Section 6 of this Report) which would determine whether those LSEs are likely to have an adverse effect on the integrity of any European Site, in light of their Conservation Objectives.

1.3.3. In support of Hudson Brothers Ltd.'s planning application, WSP have produced a combined AA Screening report and NIS.

1.4 REPORT PURPOSE

1.4.1. The objectives of this report include:

- Introduce the Proposed Development and provide ecological context within the existing landscape;
- Identify the potential environmental impacts associated with the Proposed Development during both its construction and operation;
- Identify European sites which lie within the EZoI[2] of the Proposed Development;

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

[2]The CIEEM EcIA 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).

- Identify whether any of the impacts associated with the Proposed Development, both alone and in combination with other plans or projects, could have 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 AA);
- Produce a Natura Impact Statement (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 Proposed Development alone and in combination with other plans or projects and determine whether they are likely to have an adverse effect on the integrity of any European site(s). The purpose of the NIS is to inform the decision-making process of the Competent Authority in carrying out AA.

1.5 CONTRIBUTORS TO THIS REPORT

1.5.1. Field surveys and subsequent reporting were designed and carried out by WSP ecologists Lisa O'Dowd (Consultant Ecologist) and Steven Tooher ACIEEM (Principal Ecologist), who have 3- and 8-years' experience respectively of habitat and protected species survey assessments, as well as AA reporting. They are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and are either 'Capable' or 'Accomplished' in such work, in accordance with the competency framework from the Chartered Institute of Ecology and Environmental Management (CIEEM) (2021).

2 PROPOSED DEVELOPMENT

2.1 OVERVIEW

2.1.1. The quarry at the Site has been in use since the early 1950s and has been registered with Section 261, 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.

2.1.2. The further development of the quarry is proposed over areas directly adjacent to the main operational lands already excavated as well as within the existing quarry for the purpose of recovering the economic reserve that remains in the void.

2.1.3. Under this programme, it is expected that the duration of the proposed extraction operations will be 13 to 15 years depending on market conditions. The restoration phase of the Proposed Development will last between 2 to 3 years.

2.1.4. The application area holds the main pit extraction area of the quarry and a proposed northern extension (approximately 21.2 ha in total with an internal extraction area of approximately 17.7 ha) and a proposed western extension (approximately 10.2 ha in total with an internal extraction area of approximately 9.4 ha).

DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1.5. The activity at the existing quarry currently involves the extraction of sand and gravel, and rock (predominantly greywacke) by digging and blasting respectively, and subsequent crushing (rock), washing and screening (sand and gravel), and processing to produce aggregates. It is proposed to extend the existing quarry in both a westerly direction for the extraction of sand and gravel, and rock; and a northerly direction for the extraction of sand and gravel only, with the extraction of additional sand and gravel from the northernmost part of the Site only.

2.1.6. The extraction of sand and gravel at the Site will involve the following:

- Continuation of excavation of sand and gravel using excavators;
- Continuation of washing and screening of the sand and gravel at the existing ‘wet’ aggregate processing plant (which has a ‘water recirculation’ system) into stockpiles of specific fragment sizes;
- Loading of material onto road going trucks for sale and distribution to market; and
- Trucks passing through an existing wheelwash before travelling onto the N81.

2.1.7. The extraction of rock at the Application Site will involve the following:

- Continuation of excavation of rock using a variety of methods, including drilling and blasting, digging and rock-breaking;
- Continuation of mobile crushing, and screening of the rock into stockpiles of specific fragment sizes on the quarry floor;
- Loading of material onto road going trucks for sale and distribution to market; and
- Trucks passing through an existing wheelwash before travelling onto the N81.

2.1.8. It is considered that the recovery of the valuable aggregate resources from within the Site will be a more environmentally sustainable option than recovering aggregates from a greenfield site elsewhere.

2.1.9. It is proposed to extend the existing quarry void in a phased manner. This will allow time for stripping and storage of topsoil and overburden; and the blending of material types depending on the extent of variation in the quality of the materials within the deposit at any given time. Phasing may be dependent on the quality of materials encountered and market demands. In addition, having a number of different operating faces will also facilitate this blending of materials and help to ensure efficient use of this valuable resource, however, it should be noted that not all faces identified in the plans below will be operational at any one time.

2.1.10. There will be no direct discharge to surface or groundwater from the quarry operations. Water laden with silt from the processing of sand and gravel will managed in a silt lagoon, which will be subsequently used in the restoration of the Site. Where practicable, overburden, and materials not suitable for sale (i.e., generated from the processing of the aggregate) will be used in the restoration of worked-out areas.

2.1.11. Mobile plant maintenance activities will use a dedicated concrete hardstanding apron (with associated interceptor) – at the Maintenance Shed. Static plant or tracked excavators will be refuelled with care by appropriately trained members of staff. In addition, spill kits will be maintained on site to deal with all spills and leaks, and spill training will be provided to relevant staff members.

2.1.12. The proposed finished floor level for each phase will not take place below a level of at least 1 m above the highest seasonal water table level on site, as permitted in KCC Reg. Ref.: 07/267. The finished floor levels are dependent on groundwater levels and how the groundwater may fluctuate both seasonally and due to changes over the lifetime of the quarry. The proposed operational phases to be undertaken at the Site are presented below. Aspects of the proposed Phases may be required to be altered in line with market demands for aggregate products, and site circumstances including the quality of resources identified upon extraction of particular areas.

Operational Plan - Phase 1

2.1.13. It is proposed to maintain the existing fence along the length of the Application Site boundary and to maintain native hedging inside the fence. In addition, new areas for extraction will be securely fenced around their perimeter and planted with native species where appropriate to provide screening.

2.1.14. A buffer area will be developed around the existing pond/surface water body located to the north of the main extraction area and east of the northern lateral extension, (Figure 2-1). The area surrounding this waterbody will be planted and will extend 3-5 m surrounding the feature. The buffer will be composed of a wet woodland mix of willow and alder and the remainder of the buffer areas will be allowed to naturally colonise with aquatic and marginal plants. It is anticipated that this buffer would help significantly improve the health and biodiversity of the waterbody in comparison to the immediate adjacent agriculture/livestock operations currently surrounding the feature and utilising the feature as a water source. The corridor of lands to the east of the northern lateral extension will be planted with native species and with species of local provenance displayed in hedgerows in the area. The approximate area of this waterbody and buffer feature is 1.6 ha.

2.1.15. Topsoil and overburden stripped from the proposed extraction areas (Areas A, B, C, D and E) will be removed and used to construct safety/screening berms in appropriate locations to screen active

working areas. A new 6 m safety/screening berm in the northeast of the lateral northern extension will be constructed to establish visual, safety and acoustic screening. Topsoil and overburden will also be used as appropriate to construct and strengthen other proposed and existing safety/screening berms running along the perimeter of the Site for similar screening (Figure 2-1). Topsoil will be stripped and stored in such a way to protect quality, integrity and also existing seed bank. Lands that are currently in agricultural use and not required for immediate extraction and site preparation shall be kept in agricultural use for as long as possible.

2.1.16. Quarry operations will extract sand and gravel in the north of the main pit and an access ramp will be extended from an existing haul route in the existing work area to access Area A. The ramp and haul route will progress westerly along the border of the existing main pit and Area A down to grade.

2.1.17. Rock will continue to be extracted in the quarry void, with overburden stripping in advance to expose these areas and provide access. The stripping of Area B in a phased manner to the west will provide access to additional sand and gravel resources initially. As each phase of sand and gravel becomes worked out in Area B, bedrock will become exposed for extraction. In this way Area B will be quarried in a series of sub-phases until the perimeter of the Site is reached. It is proposed that excavations will be to a depth that is 1 m above the seasonal highest watertable.

2.1.18. Rock will be extracted in series of benches (7.5 m wide to allow for safety edge protection), which will be no more than 20 m high depending on ground conditions. Rock extraction will be continued using the existing site practices of drilling, blasting, digging and rock-breaking.

2.1.19. The stripping of topsoil and overburden in a phased manner will allow for faces to be 'opened-up' to provide for the blending of rock, and sand and gravel of variable quality. No rock is expected to be recovered from Areas C and D, as the bedrock deepens in these areas. Existing hedgerows will be remediated by the planting of additional native species. Excess topsoil and overburden will be used for phased restoration of the Site. Once constructed, the majority of screening berms will be 2 m in height. The width of the berm crest will be 2 m and the base of the berm will be 8 m wide. The berms will be planted with a mixture of native grass species and shrubs. Trees are not proposed to be planted on berms as the stored topsoil and overburden therein may be used as required for quarry restoration. As well as visual mitigation into the Site, the berms will provide acoustic screening of the site operations. If required, areas of the proposed screening berms may be left intact for the lifetime of the quarry and will be incorporated into the final restoration plan for the Site.

2.1.20. The security fence around the perimeter of the Site will be maintained (with warning signage) in the interest of safety to both humans and livestock. A perimeter access track will be maintained around the inside of the security fence and the screening berm.

2.1.21. As currently permitted, the water supply for the aggregate processing plant will continue to be sourced from the pond on the base of the pit floor. Silt settlement lagoons will be established in the southern area of the main pit, (Figure 2-1).

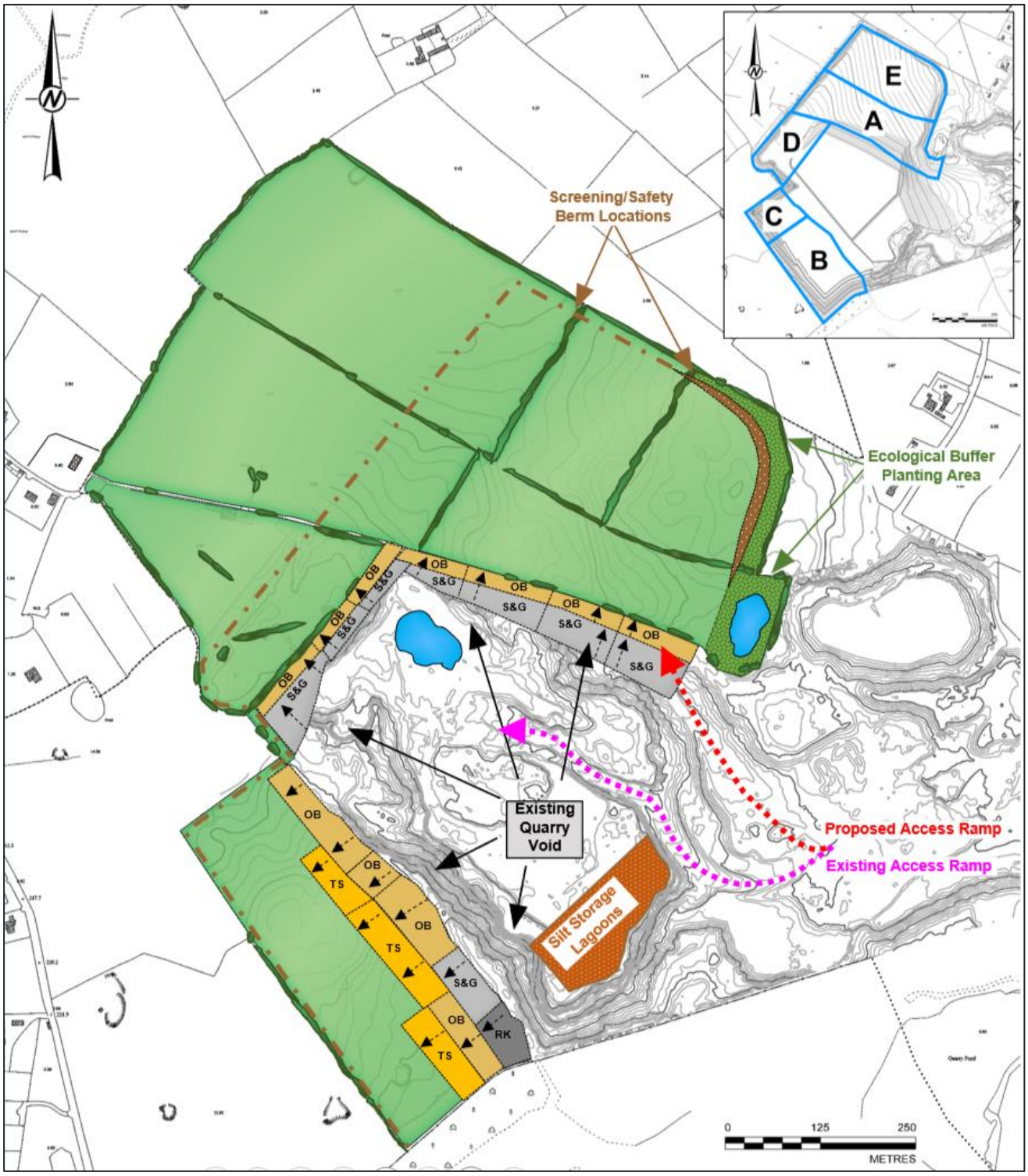

Figure 2-1 - Operational Plan - Phase 1.

Operational Plan - Phase 2

2.1.22. During this phase of the development, it is proposed to continue to develop the quarry in Areas B, C and D to allow for blending of this valuable resource, with topsoil and overburden being striped ahead of the advancing faces (Figure 2-2). As identified in Phase 1, the proposed finished floor level for each phase will not take place below a level of at least 1 m above the highest seasonal water table level on site. The following quarry design criteria (based on the HSA's 'Guidelines to the Safety, Health and Welfare at Work (Quarries) Regulations 2008') were used in the design of the proposed quarry excavation:

- 3D topographical survey of the site;
- Planning boundary for the site;
- 3 m wide access track between planning boundary and outside edge of screening berm;
- 2 m high screening berm with 1 in 1.5 slopes on either side:
    - Screening berm 2 m wide along crest;
- 3 m wide access track along inside edge of screening berm;
- 1 in 2 excavation slope from edge of inside access track surface to base of overburden;
- 1 in 1.5 excavation slope from base of overburden to base of sand and gravel;
- 3 m stand-off on rock-head (i.e. between base of sand and gravel slope and top of rock 'cut');
- 7.5 m wide benches with edge protection,
- 70º slope from top of rock-head to bottom of quarry face (depending on ground conditions);
- Maximum 20 m high benches where design and ground conditions allow; and
- Safety berms/edge protection should be >1.5 m or higher than the radius of the largest wheel/tyre

2.1.23. The stripping of Areas A and D will continue during this Phase of the project, in preparation for the extraction of sand and gravel. Stripping of topsoil and overburden will take place to the east of the Gas Main. The exact location of the Gas Main will be confirmed with Gas Networks Ireland (GNI) prior to stripping.

2.1.24. Further rock, and sand and gravel extraction will take place in Areas B and C.

2.1.25. The existing pit access ramp and proposed access ramp will be utilised depending on the extraction face in operation.

2.1.26. Safety/screening berms will be constructed outside the appropriate GNI exclusion zones and boundary hedgerows will be developed and left intact for the life of the quarry (and in perpetuity to continue to provide biodiversity to the Site and the local environment). Berms and planting in this area will serve to mitigate against noise and potential dust emissions from the Site, as well as offer reduced visibility of the Site from surrounding lands.

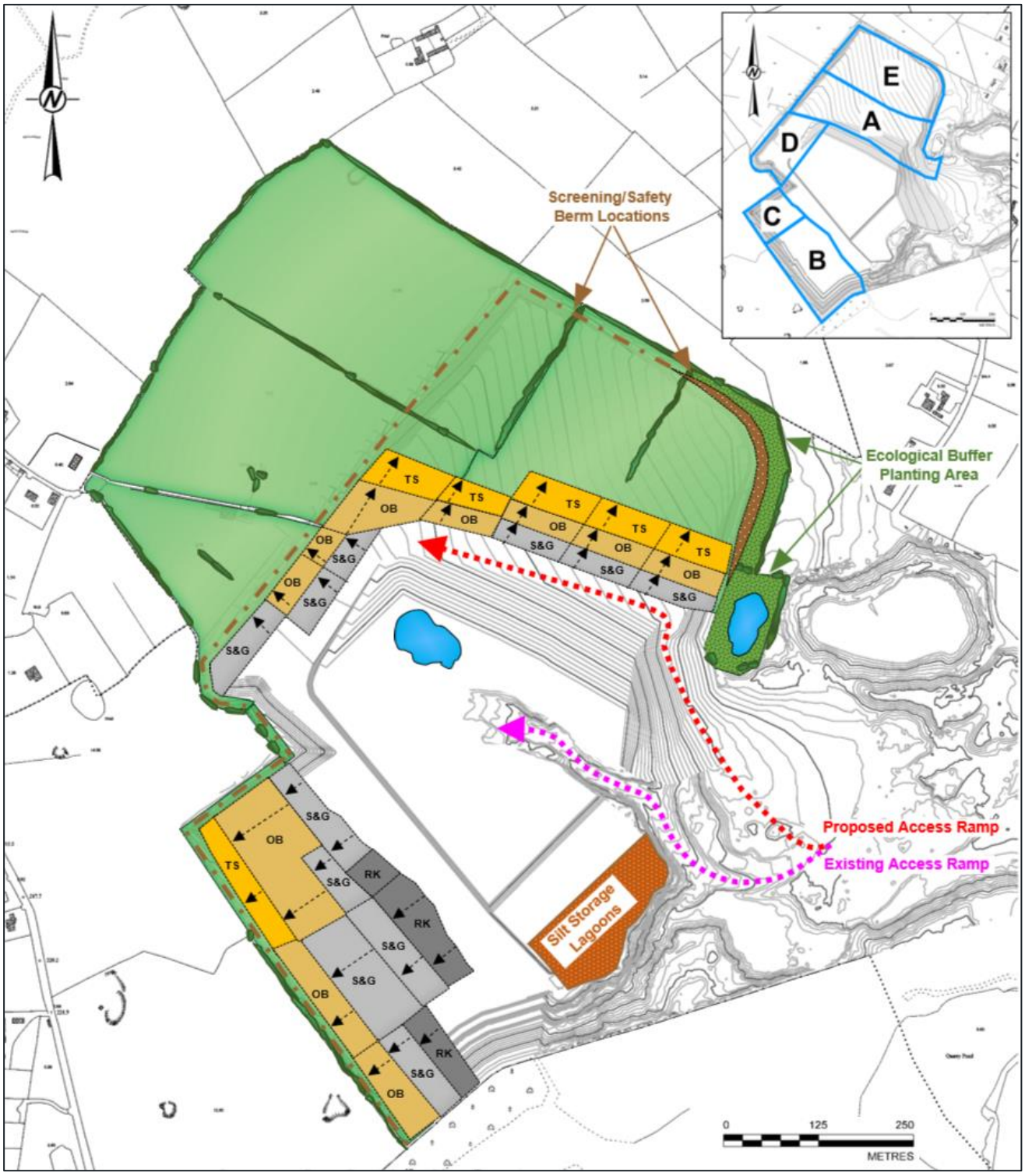

Figure 2-2 - Operational Plan - Phase 2.

Operational Plan - Phase 3

2.1.27. It is proposed that during this Phase of the development, ongoing production from Area B will take place for rock, and from Areas C, and Area E for sand and gravel (Figure 2-3).

2.1.28. Extraction of rock will continue in Area B in a westerly direction to the Site boundary, with extraction of sand and gravel continuing in Areas C, but ceasing in Area D.

2.1.29. Stripping of topsoil and overburden to continue in Area E, with stripped materials used in the construction of screening berms. Surplus stripped materials from Area E will be stored in temporary stockpiles for use in the restoration on cessation of quarrying. During this Phase of the operation, Area D will undergo restoration.

2.1.30. Conducting these stripping and excavation works in an north and easterly direction within Area E will provide acoustic screening by the topography of the operational quarry face and will provide a reduction in noise impacts on the closest noise sensitive receptors, (see Chapter 9 Noise and Vibration). For further noise attenuation the haul truck routes will be diverted around the edges of the pit to ensure maximum topographic screening as opposed to taking a route through the centre of the voids.

2.1.31. Having a number of different operating faces will allow for blending of materials of variable quality from different parts of the Site and help to ensure efficient use of this valuable resource, however, as noted previously, not all faces identified will be operational at any one time. The proposed finished floor levels in this section of the site will vary due to the topography and incline of hill, however extraction in each phase will not take place below a level of at least 1 m above the highest seasonal water table level.

2.1.32. During this phase of the operation, the quarry faces will be pushed back to their extraction limits.

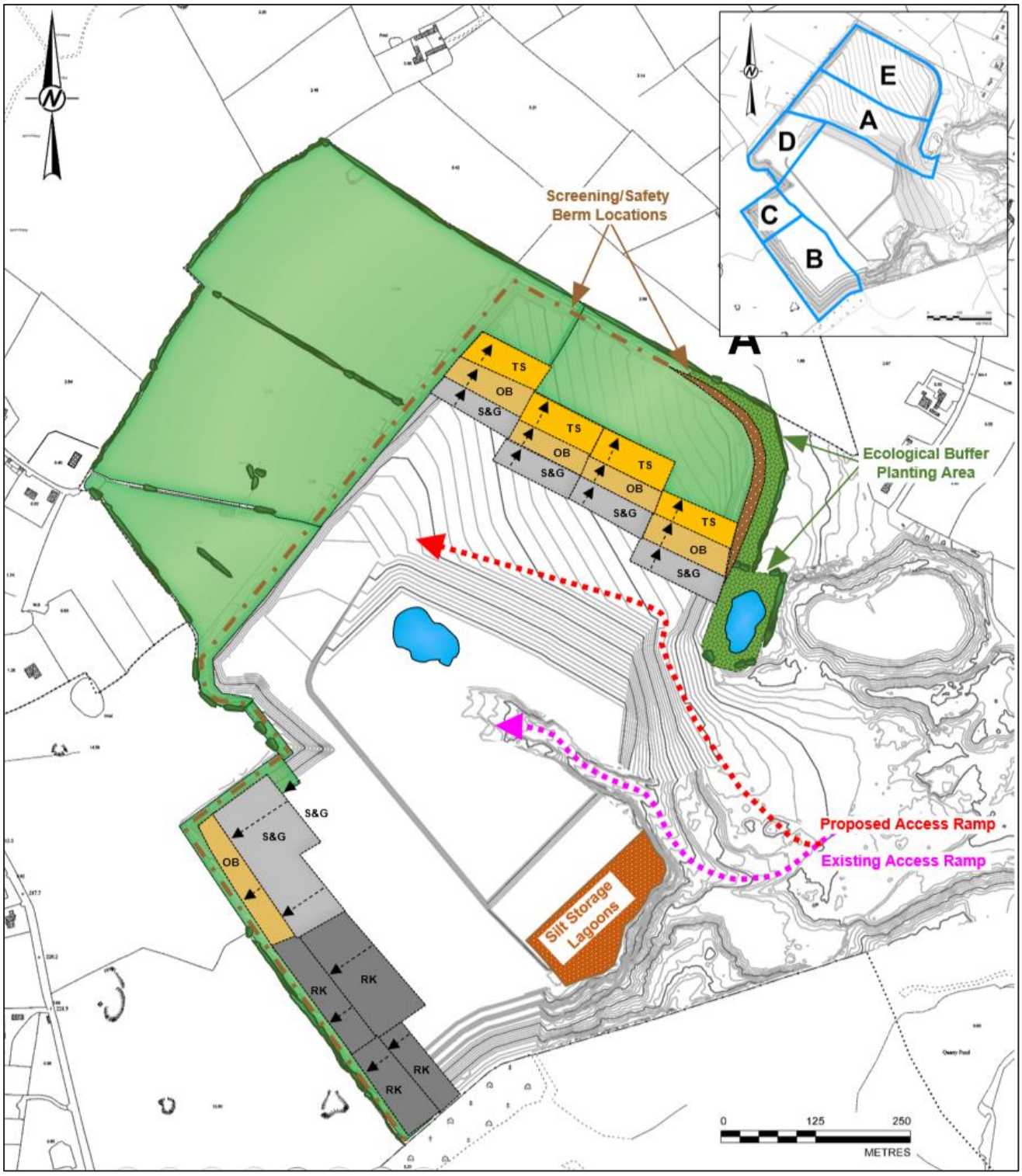

Figure 2-3 - Operational Plan - Phase 3.

Restoration - Phase 4

2.1.33. Following cessation of extraction, the Site will be restored to a mixture of grassland, hedgerows, woodland and a waterbody (Figure 2-4). The Site restoration will be carried out in line with the Site Restoration Plan (submitted with this Application).

2.1.34. It is expected that the final restoration will be completed in 2 to 3 years following the cessation of extraction activities. The waterbody will also add to the biodiversity of the area following cessation of quarrying. The surface water waterbody will be located in the northern section of the main pit. Water is trapped by clay/silt layers in the sand and gravel deposit in this region. Similar features exist throughout the landscape to the west and north of the Site and also the Red Bog SAC. It is anticipated that this waterbody and the waterbody identified in Phase 1 will be of similar composition and complement each other in the restored landscape.

2.1.35. In addition, the Site will undergo planting of grassland, native tree and shrub species. Indigenous plant species will be encouraged to re-colonize worked out areas (benches) to develop unique habitats and provide for increased biodiversity in the area. A native wildflower and grassland mix will be planted on finished sand and gravel faces (not steeper than 1(V) : 2.5(H)). All seed mixes will be agreed with the local authority in advance. Steeper faces will be allowed to recolonise and will be promoted for sand martin habitats where appropriate. All seed mixes will be agreed with the local authority in advance. Agricultural grassland with hedgerow boundaries will be reinstated in the north of the Site. Hedgerow mixes will be sown on the western perimeter of the site outside the GNI wayleave. Grassland mixes will be sown within the GNI wayleave. Planting within and adjacent to the GNI wayleave will be agreed with GNI and KCC in advance.

2.1.36. Inter-mixed with the planting of native trees and scrubs, restoration surfaces will be seeded with native grasses and wildflowers to provide increased biodiversity. Areas for grassland restoration will be dressed with ca. 0.3 m of topsoil and re-seeded with a grass seed mixture, similar to that used on adjoining lands.

2.1.37. Vertical faces which remain along the southern and western part of the Site will be maintained and enhanced to promote biodiversity in terms of nesting birds such as raven (Corvus corax), jackdaw (Coloeus monedula), peregrine falcon (Falco peregrinus) and bats species. Bench heights will be in accordance will any current or future Health and Safety Quarry Regulations. Furthermore, attention will be given to the Environmental Protection Agency's (EPA) 2006 Guidance Document on Environmental Management in the Extractive Industries (or subsequent issues guidance) when implementing the final restoration measures.

2.1.38. The final depth of the pit floor will vary across the Site due to natural variations in aggregate depths and groundwater. Upon decommissioning of the Site, it is the Applicant's intention to reinstate the majority of the site back to agricultural use, with a waterbody in the mid-western part of the Site (Figure 2-4). All plant, equipment and temporary structures shall be decommissioned and removed from the Site.

Figure 2-4 - Operational Plan - Phase 4 - Restoration. Overview of main features. Please refer to Chapter 11 (Landscape and Visual) for detailed Restoration Plan.

2.2 SITE LOCATION

2.2.1. The Site is located in the townlands of Athgarrett, 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 through lands owned by the client in Co. Wicklow. The Co. Wicklow land is accessed via the N81 National Secondary Road as illustrated in Figure 2-5.

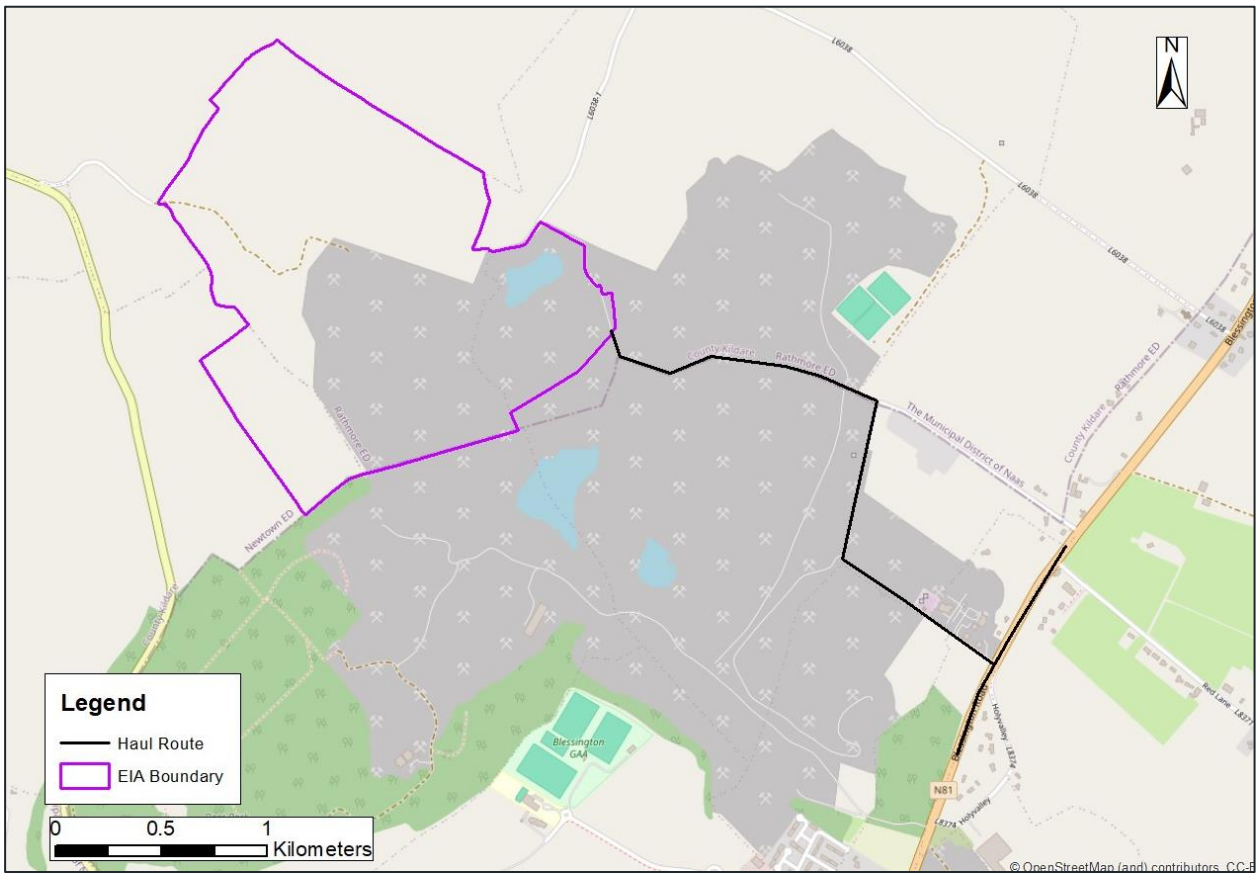

Figure 2-5 - Site Location

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 Environmental Impact Assessment Report (EIAR) (WSP, 2024a) and information considered pertinent to AA is summarised in the main text body.

SITE WATER REQUIREMENTS AND MANAGEMENT

2.3.2. At the present time, rock is processed at the quarry face and does not require the use of water, expect 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. The water abstracted from Pond K2 passes through the Water Treatment Plant before being sent to the Maintenance Shed and Aggregate Processing Plant (see Figure 2-6).

2.3.3. 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.

2.3.4. 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.

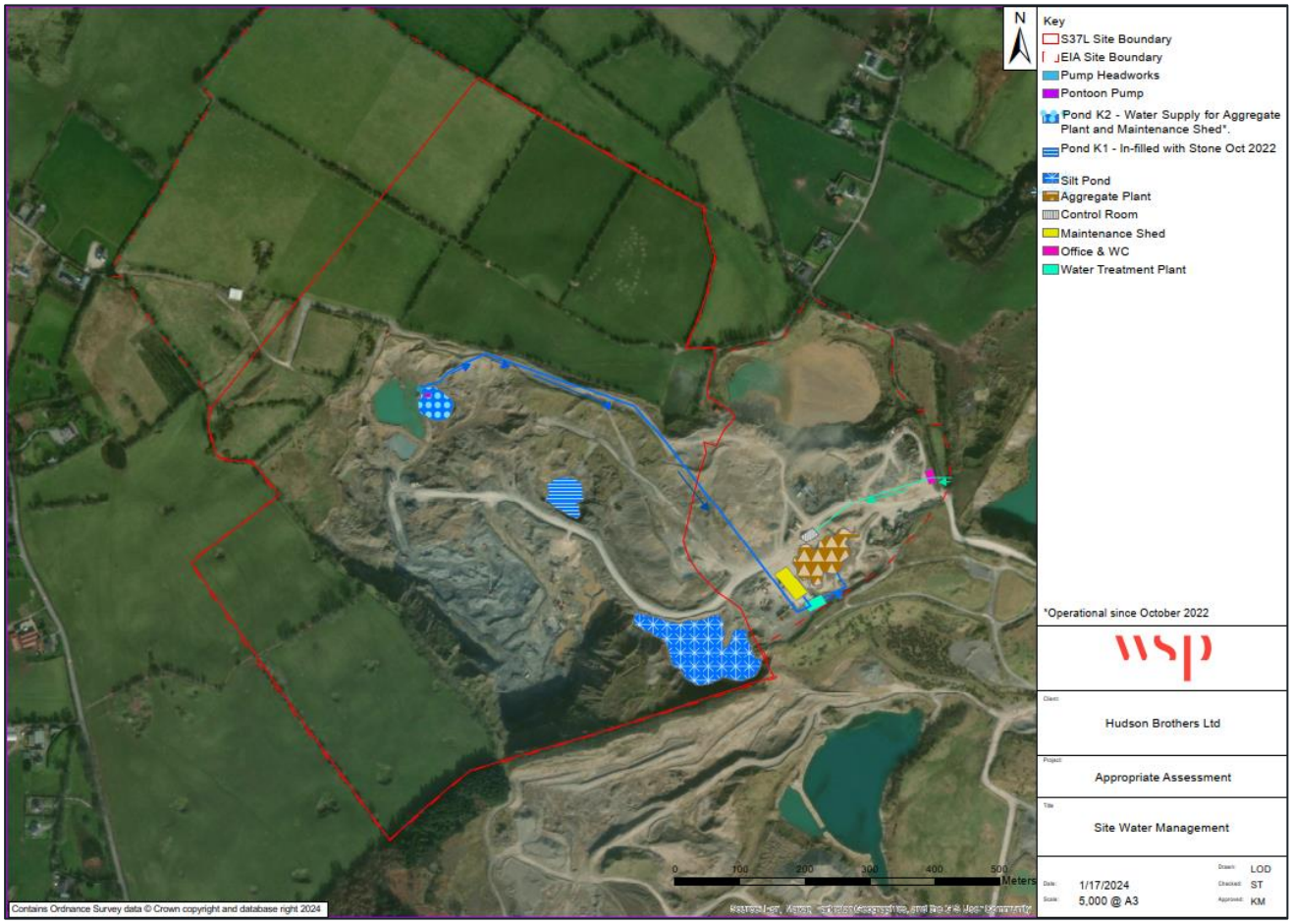

Figure 2-6 - Site Water Management

GROUNDWATER – HYDROGEOLOGY

LOCAL AQUIFERS AND THEIR PROPERTIES

2.3.1. The information contained in this section has been adapted from Chapter 7 (Water) of the EIAR – submitted separately.

2.3.2. 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 Geological Survey Ireland (GSI) aquifer designation (2023) for the sand and gravel and bedrock aquifers underlaying the Site is illustrated in Figure 2-7.

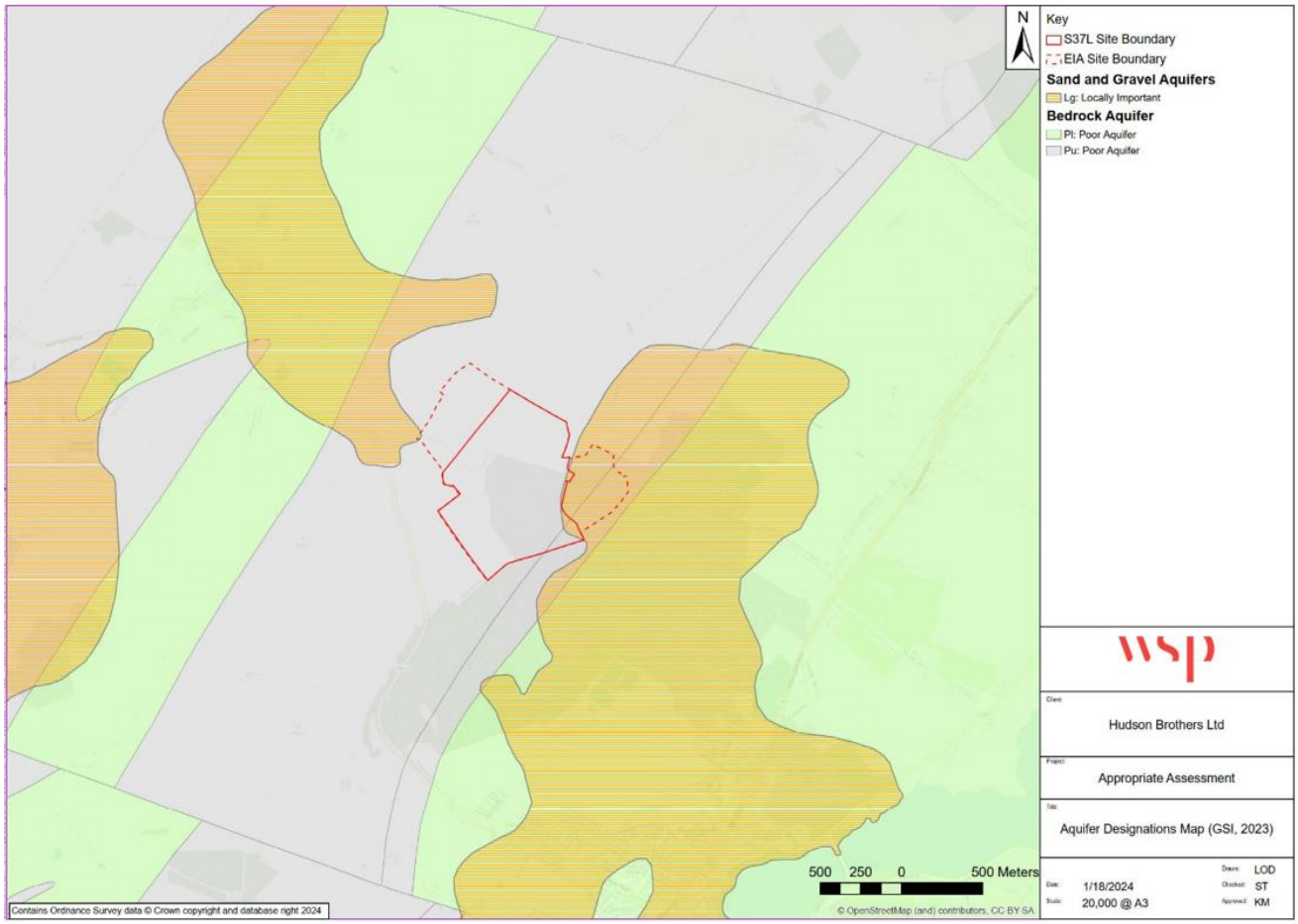

Figure 2-7 - Aquifer Designation Map (GSI, 2023)

GROUNDWATER ELEVATION

2.3.3. There were previously six existing monitoring wells reported. 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 existing monitoring wells is presented in Figure 2-8.

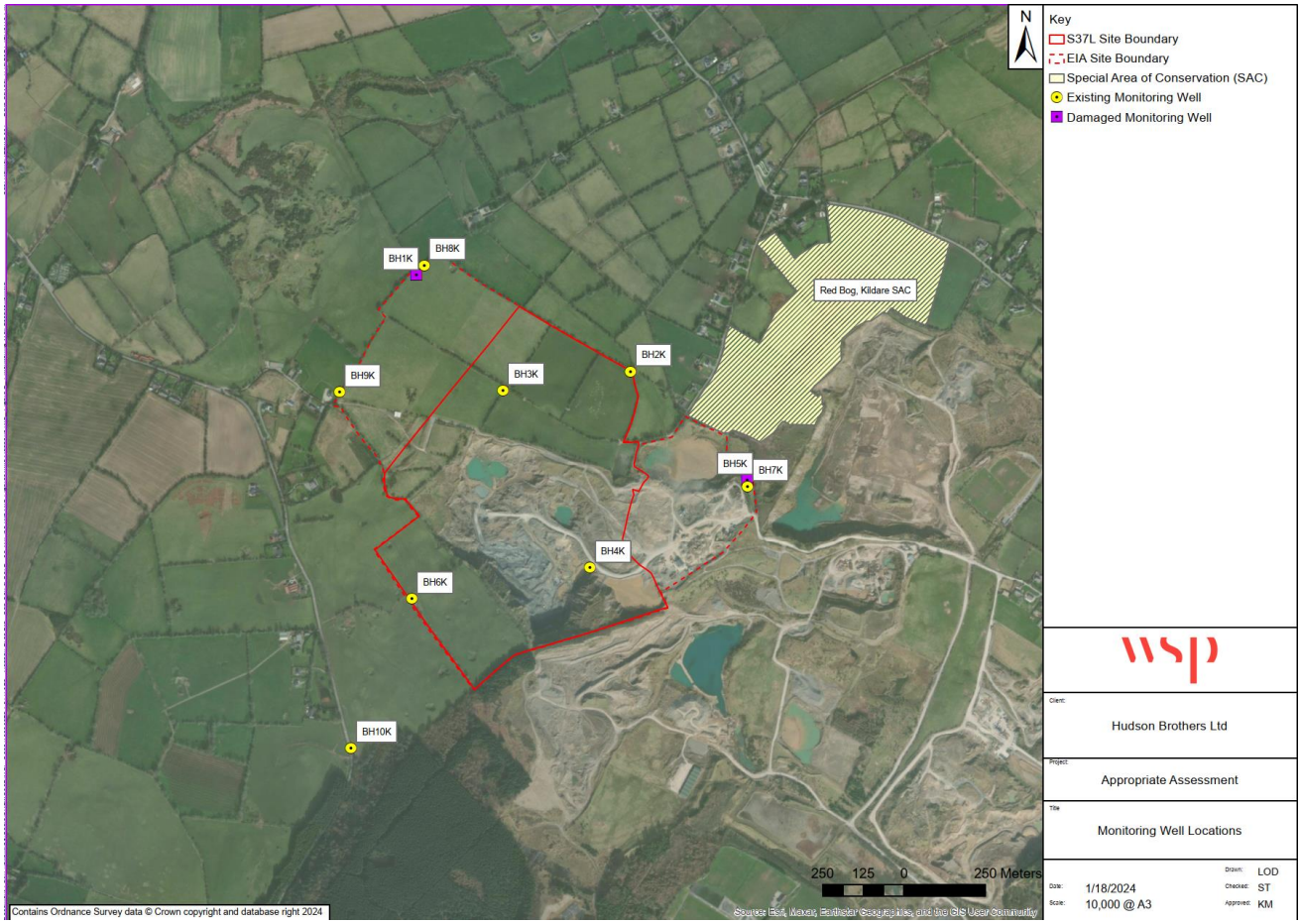

Figure 2-8 - Monitoring Well Locations

2019-2023 Groundwater Elevations

2.3.4. Manual groundwater elevations in Metres Above Ordnance Datum (mAOD) since January 2020, are displayed in Figure 2-9 for the existing monitoring wells shown in Figure 2-10. Since January 2023, the frequency of recording water levels has been increased with monthly visits to site.

2.3.5. Water levels have remained relatively stable, 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).

2.3.6. 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.

2.3.7. 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).

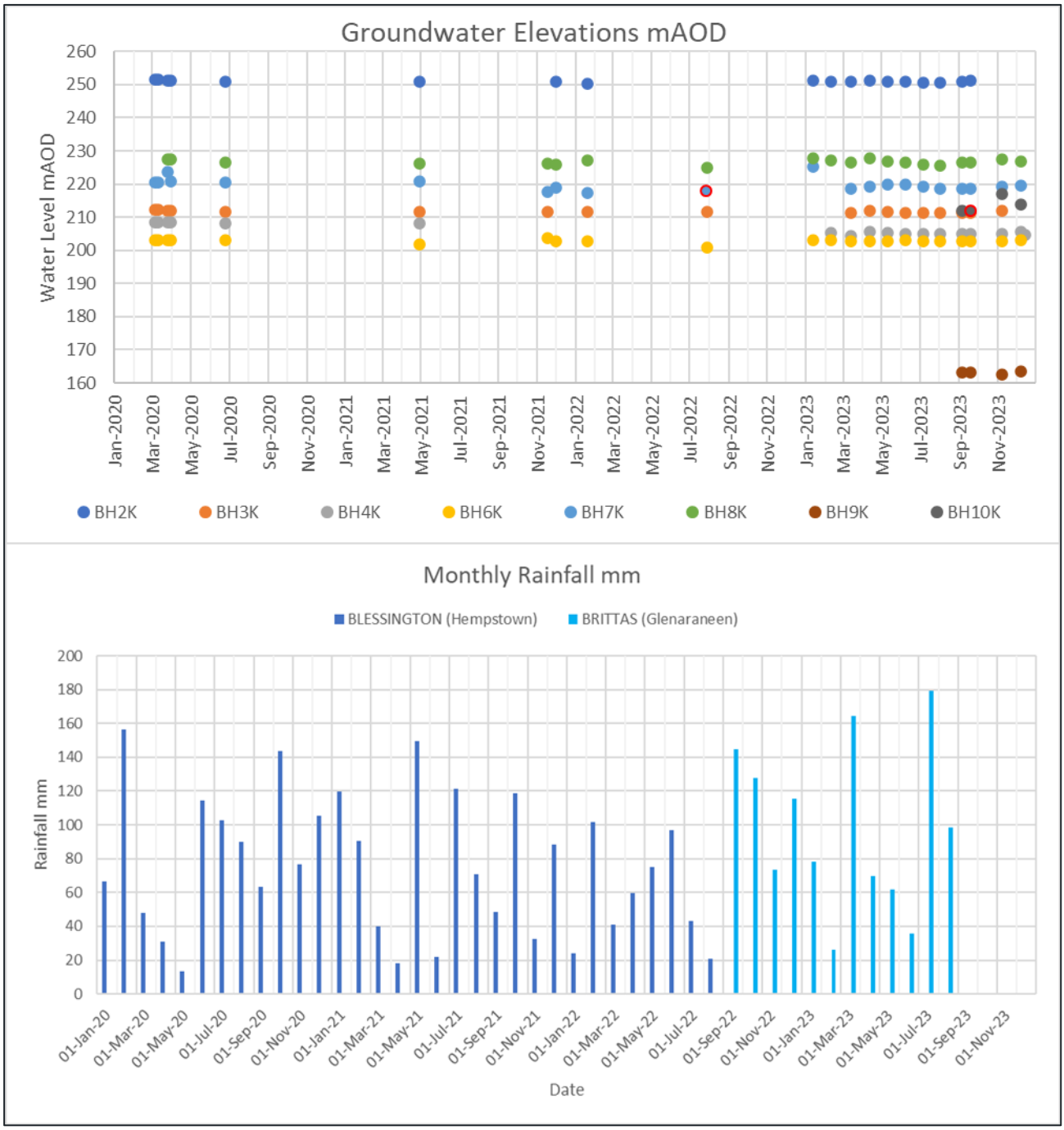

Figure 2-9 - Groundwater Elevations Over Period 2020-2023

2.3.8. The available groundwater levels show no indication of drawdown and there are no declining trends with recent activities at the Site. This confirms that there has not been any active dewatering with mining activities of the sands and gravels or greywacke rock. This therefore signifies that mining activities have not intercepted the groundwater confined within the greywacke or siltstone bedrock, even though they have continued beneath the maximum winter groundwater elevation of 200 mAOD (Golder, 2020).

2.3.9. 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 as displayed in Figure 2-10. 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.

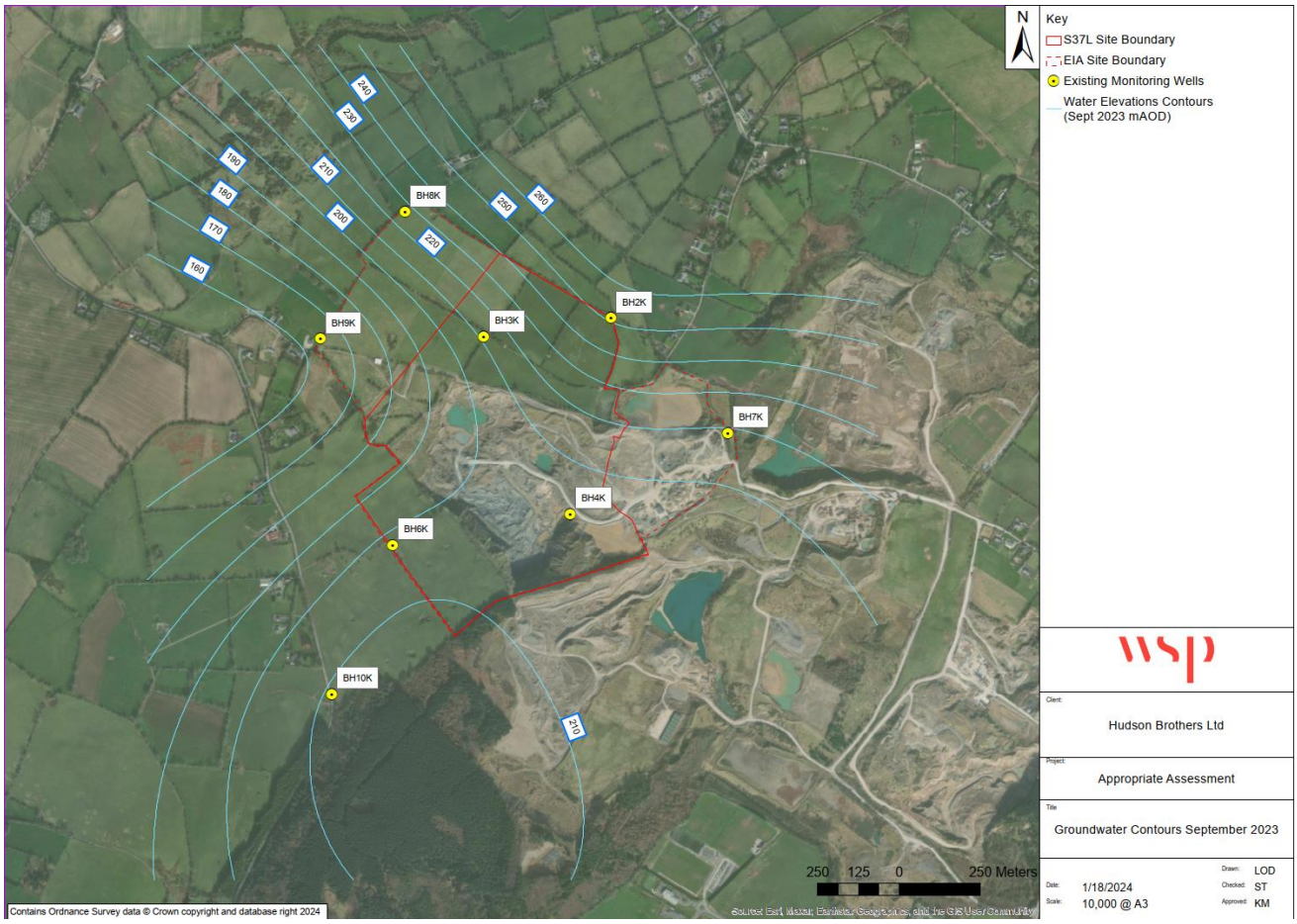

Figure 2-10 – Groundwater Contours September 2023

GROUNDWATER QUALITY

2.3.10. There was no water quality sampling conducted between May 2020 and January 2023. Water quality samples were collected on five occasions in 2023 (January, May, September, 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 EIAR – Chapter 7).

2.3.11. 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

2.3.12. Dust emissions from the Site were monitored monthly for the duration of the review period. Monitoring locations are shown in Figure 2-11.

2.3.13. Overall, the average concentrations of deposited dust during the assessment period were 231.2 mg/m2/day, which includes any recorded exceedances. This amounts to 66% of the limit value of 350 mg/m2/day.

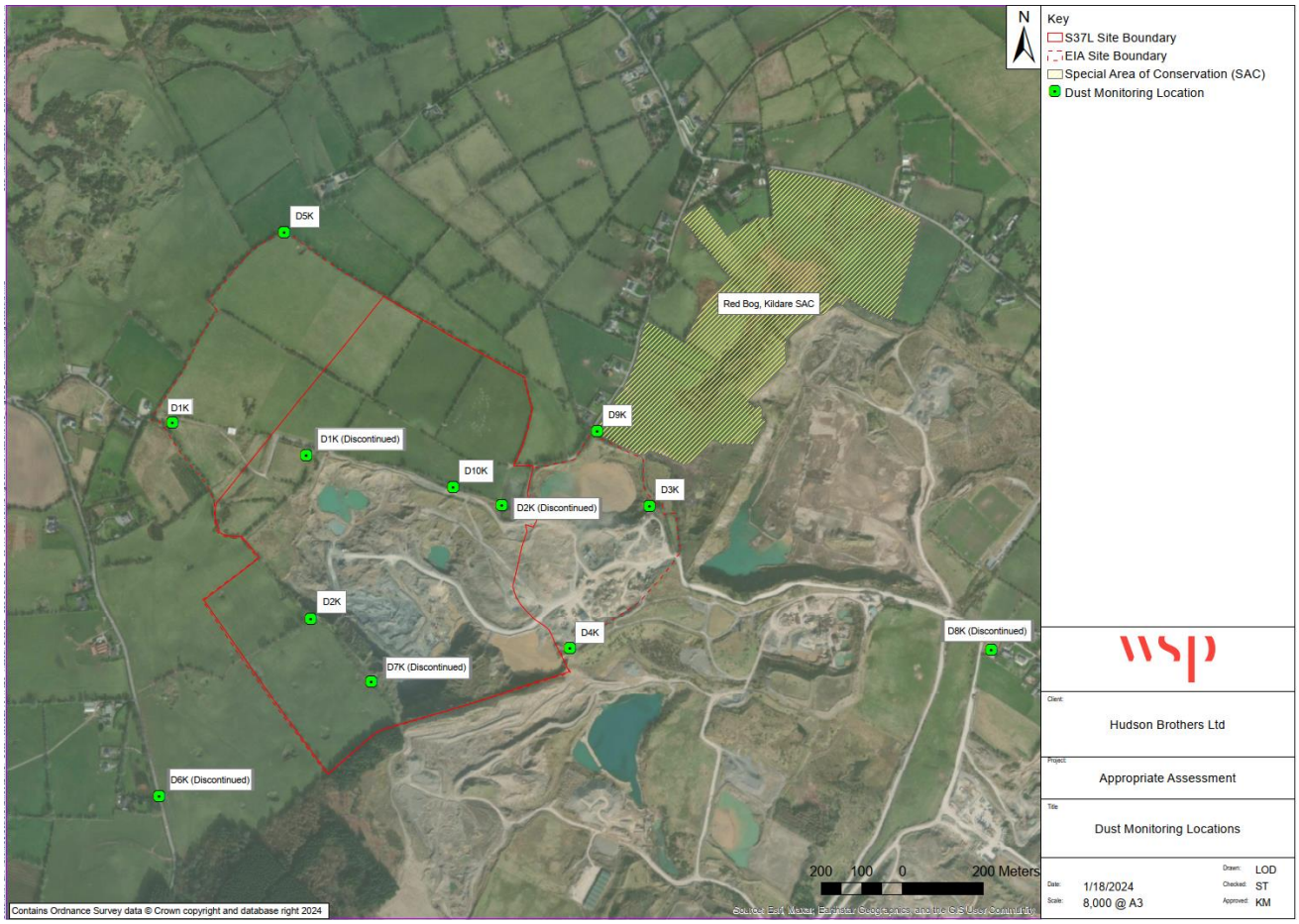

Figure 2-11 - Dust Monitoring Locations

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 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 proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required.
- **Stage 2** (NIS to inform AA) - A Stage Two AA is a focused and detailed examination, analysis and evaluation carried out by the Competent Authority of the implications of the plan or project, alone and in-combination with other plans and projects, on the integrity of a European sites in view of that site's conservation objectives. Case law has established that such an AA, to be lawfully conducted, in summary:

  i. must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;
  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 proposed development will not adversely affect the integrity of any relevant European site where the Competent Authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three and, if necessary, stage four.

- **Stage 3** - This stage of the potential process arises where adverse effects on the integrity of a European site cannot be excluded and examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site.
- **Stage 4** - Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the 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 AA of plans or projects which adversely affect the integrity of a European site (SPAs, SACs and candidate SACs (cSACs)) based on their proximity, or connectivity to the Proposed Development:

- Any plan or project not directly connected with or necessary to the management of a European site, but which is likely to have a significant effect upon such a site, either individually or in combination with other plans or projects, shall undergo an AA to determine its implications for the 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 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 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 and NIS has been informed by the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government (DoEHLG). Dublin. (DoEHLG, (2009)
- Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission, 2002) Communication from the Commission on the Precautionary Principle
- CIEEM (2018) Guidelines for Ecological Impact Assessment 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."

4 APPROPRIATE ASSESSMENT SCREENING (STAGE 1)

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, 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 Proposed Development were identified based on their proximity, as well as their potential to be connected, either directly (e.g., via watercourses) or indirectly (e.g., whereby associated qualifying species use habitats within, or their proximity to the existing development for foraging or roosting habitat (termed 'functionally connected' habitat[3])). The EZoI 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, 2016).

4.1.3. Table 4-1 provides details of the Qualifying Interests (QIs)[4] of each of the European sites identified within the EZoI of the Proposed Development, the approximate distance and direction of each European site, and if there is potential connectivity[5]. 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).

[3] 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.

[4] 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.

[5] 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

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 100 m of quarrying activities.

Table 4-1 - European Sites within the EZoI

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
Red Bog, Kildare SAC (000397)	The SAC boundary[6] is adjacent to the Site. The SAC and the Site are separated by a local (L) road.	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). 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 Site are presented later in the report. At this stage, it is concluded that there is **potential groundwater connectivity** between this SAC and the Site**.** The SAC boundary is more than 100 m from the nearest source of dust emissions, which is outside the typical range in which significant impacts are likely to occur (IAQM, 2016). Further detail on the likely impacts of dust emissions from the Site on this SAC are discussed later in the report. At this stage it is concluded that there is **potential connectivity for dust emissions** between this SAC and the Site.	▪ Transition mires [7140]
Poulaphouca Reservoir SPA (004063)	2.2 km southeast	There is **no hydrological connectivity** between this SPA and the Site. The SPA is designated for its greylag goose population and wintering lesser black-backed gull *Larus fuscus*. A small pond situated in the north-east of the Site is suitable for these waterfowl. Three settlement lagoons are also found within the quarry pit. The magnitude of disturbance associated with the activities at the Site is such that the lagoons are completely devoid of vegetation (see Section 4.2) and do not provide a foraging resource for waterfowl.	▪ Greylag goose [A043] ▪ Lesser black-backed gull [A183]

[6] The SAC boundary surrounds the main area of qualifying habitat (transition mire), as well as up to 240 m of peripheral improved agricultural grassland.

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		The SPA provides a main roost for the geese with feeding occurring on the improved grassland outside the SPA (NPWS, 2014). Such improved grassland is present around the periphery of the existing quarry pit. 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. 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.	
Wicklow Mountains SAC (002122)	4.7 km southeast	There is **no hydrological connectivity** between this SAC and the Site. This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Site.	▪ Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] ▪ Natural dystrophic lakes and ponds [3160] ▪ Northern Atlantic wet heaths with *Erica tetralix* [4010] ▪ European dry heaths [4030] ▪ Alpine and Boreal heaths [4060] ▪ Calaminarian grasslands of the Violetalia calaminariae [6130] ▪ Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] ▪ Blanket bogs (* if active bog) [7130] ▪ Siliceous scree of the montane to snow levels *Androsacetalia alpinae* and *Galeopsietalia ladani* [8110] ▪ Calcareous rocky slopes with chasmophytic vegetation [8210]

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
			▪ Siliceous rocky slopes with chasmophytic vegetation [8220] ▪ Old sessile oak woods with *Ilex* and Blechnum in the British Isles [91A0] ▪ Otter *Lutra lutra* [1355]
Wicklow Mountains SPA (004040)	7.9 km southeast	There is **no hydrological connectivity** between this SPA and the Site. 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 5.7 km. 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. 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. 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. 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.** 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. **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**	▪ Merlin [A098] ▪ Peregrine falcon [A103]

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		outside the remit of AA, but are addressed separately through the Ecological Impact Assessment process, as presented in the EIAR.	
Glenasmole Valley SAC (001209)	12.6 km northeast	There is **no hydrological connectivity** between this SAC and the Site. Petrifying springs are GWDTEs however, this SAC is located in a different groundwater body as the Site. Therefore, there is **no groundwater connectivity**. This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Proposed Development.	▪ Semi-natural dry grasslands and scrubland facies on calcareous substrates Festuco-Brometalia (*important orchid sites) [6210] ▪ *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] ▪ Petrifying springs with tufa formation (Cratoneurion) [7220]
Moud's Bog SAC (002331)	15.7 km west	There is **no hydrological connectivity** between this SAC and the Site. 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 Proposed Development.	▪ Active raised bogs [7110] ▪ Degraded raised bogs still capable of natural regeneration [7120] ▪ Depressions on peat substrates of the Rhynchosporion [7150]
Ballynafagh Lake SAC (001387)	17.3 km northwest	There is **no hydrological connectivity** between this SAC and the Site. Alkaline fens are GWDTEs however, this SAC is located within a different groundwater body compared to the Site. There is **no groundwater connectivity**. Desmoulin's whorl snail *Vertigo moulinsiana* 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. Marsh fritillary *Euphydryas aurinia* rarely fly more than 100m from where they hatch with the caterpillars feeding exclusively on Devil's-bit Scabious *Succisa pratensis* (Phelan, et al., 2021), which is a species of plant commonly associated with peatland and not present onsite. Given that there is no hydrological connectivity, and given the distance between the SAC and the Site, there is therefore **no functional**	▪ Alkaline fens [7230] ▪ Desmoulin's whorl snail [1016] ▪ Marsh Fritillary [1065]

Site Name and Code	Distance to Existing Development	Connectivity	Qualifying Interests [Habitats/Birds Directive Code]
		connectivity.	
Ballynafagh Bog SAC (000391)	17.7 km northwest	There is **no hydrological connectivity** between this SAC and the Site. This SAC is not designated for a GWDTE so therefore, there is **no groundwater connectivity** with the Site This SAC is designated for habitats only; there is therefore **no functional connectivity** with the Site.	▪ 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)	18.4 km west	There is **no hydrological connectivity** between this SAC and the Site. The qualifying habitats (Calcareous fens, petrifying springs and alkaline fens) are GWDTEs however, this SAC is located within a different groundwater body compared to the Site**. There is no groundwater connectivity** with the Site**.** All species of *Vertigo* for which this SAC is designated are dispersed via transportation in the water column. Given that there is no hydrological connectivity, there is therefore **no functional connectivity**.	▪ Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae [7210] ▪ Petrifying springs with tufa formation (Cratoneurion) [7220] ▪ Alkaline fens [7230] ▪ Geyer's Whorl Snail *Vertigo geyeri* [1013] ▪ Narrow-mouthed Whorl Snail *Vertigo angustior* [1014] ▪ Desmoulin's Whorl Snail [1016]
Rye water Valley/Carton SAC (001398)	18.8km north	There is **no hydrological connectivity** between this SAC and the Site. 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** with the Site. The fauna associated with this SAC are species of *Vertigo* snails. Given that there is no hydrological connectivity, there is therefore **no functional connectivity** with the Site.	▪ Petrifying springs with tufa formation (Cratoneurion) [7220] ▪ Narrow-mouthed Whorl Snail [1014] ▪ Desmoulin's Whorl Snail [1016]

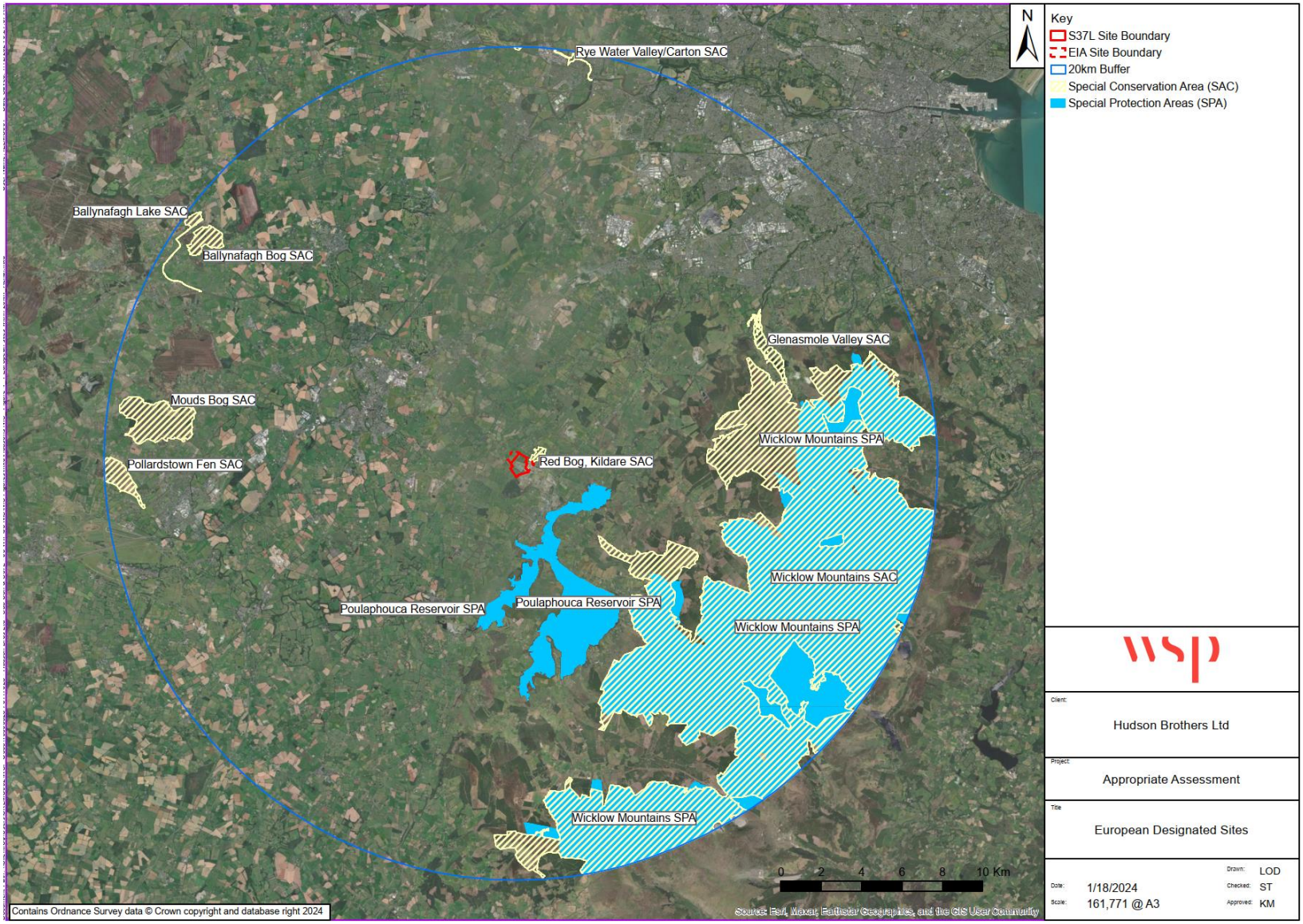

Figure 4-1 - European sites within 20 km of the Site.

4.1.6. Based on the information presented in the above table, it has been concluded that the Site is potentially connected three European designated sites as described in Table 4-2.

Table 4-2 - European Designated Sites with Potential Connectivity to the Site

Designated Site	Reason for Connectivity
Red Bog, Kildare SAC	The Site is located adjacent to this SAC and is situated above the same groundwater body.
Poulaphouca Reservoir SPA	The Site is located within the core foraging range of greylag goose, which is one of the qualifying species of the SPA. Suitable foraging habitat exists within the Site.
Wicklow Mountains SPA	The Site is located within the maximum observed foraging range of peregrine falcon, which is one of the qualifying species of the SPA. Suitable foraging habitat exists within the Site.

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 September 2020. The existing quarry pit, as well as surrounding lands within the EIA boundary, as illustrated in Figure 2-1**,** were surveyed, hereafter referred to as the Survey Area.

4.2.2. Much of the data gathered was relevant to Ecological Impact Assessment (EcIA) and outside the scope of AA. This report only presents those results which are relevant to AA, specifically if relevant to European sites with which the Proposed Development has potential connectivity. Full survey results are included in the EIAR (WSP, 2024a).

4.2.3. The survey was 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 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.
- Cattle were observed grazing inside the boundary of Red Bog, Kildare SAC.
- Greylag geese were not observed during surveys;

- No invasive[7] flora were observed during the survey (either in 2019 or 2023);
- One Sika deer (*Cervus nippon*) was observed in 2020 and two in 2023 (Third Schedule of S.I. 477/2011);
- One 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 Proposed Development.

LIMITATIONS

4.2.5. The 2023 survey was undertaken at a sub-optimal time for detailed 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*. Management of the adjacent lands has not greatly changed in the time elapsing between the 2019 and 2023 survey reducing the risk of the spread of new invasive flora. With regard to CIEEM's (2019) *Advice Note – On the Lifespan of Ecological Reports & Surveys* and the reasons outlined above, the timing of the survey in November 2023 is not considered a significant limitation.

4.2.6. Targeted wintering geese surveys were not undertaken prior to the assessment of the Proposed Development. The site presents suitable foraging habitat for greylag geese from Poulaphouca SPA. However, following the application of the precautionary principle, it was considered that adequate information was available to carry out a robust impact assessment. Therefore, the absence of wintering bird surveys targeting greylag geese is not considered to be a significant limitation.

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

5 ASSESSMENT OF LIKELIHOOD OF SIGNIFICANT EFFECTS

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

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;
- Physico-chemical analysis of groundwater within, and down-gradient of the Site indicate that groundwater quality perturbations to date have not occurred. Therefore, such perturbations are unlikely to occur with future works.

5.2.4. A hydrogeological report on Red Bog, Kildare SAC (100 m from Site boundary) carried out for Hudson Brothers Ltd. Golder Associates (2008) state 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, Kildare 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.

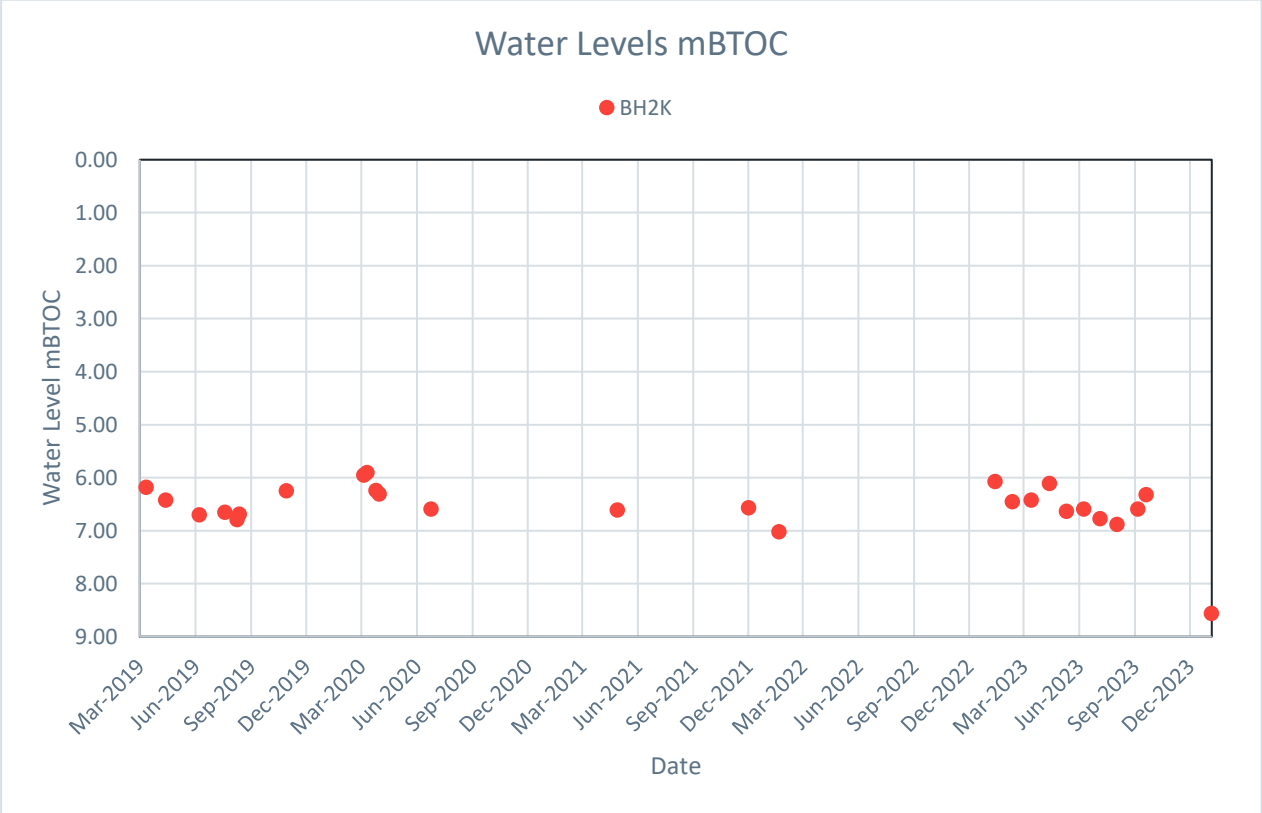

Figure 5-1 – Groundwater Levels at Monitoring Well BH2K

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/m^2/day[8]) and the likelihood of a significant effect is therefore very low except on the sites with the highest dust release close to sensitive habitats."

[8] >1000 mg/m^2/day

5.2.7. Prajapati (2012) states that chemical effects of reactive materials (such as cement dust, and particulate sulphates/nitrates[9]) become evident at concentrations of approximately 2 g/m^2, 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 sensitive bryophyte communities[10] alongside a major road in Alaska. It was found that species of *Sphagnum* declined. Where dust deposition was between 1000-2500 mg/m^2/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 (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 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[11], 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 (Holman et al. , 2014)

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

SITE DUST EMISSIONS

The most recent area of lateral expansion occurred in 2023 to the west of the Site. The two nearest dust monitoring locations to this area are D1K and D2K. The maximum recorded dust emissions in 2023 was 118 mg/m^2/day and 135 mg/m^2/day for D1K and D2K respectively. The average dust emissions for the overall site (comprising records from 2019-2023) is 231.2 mg/m^2/day (refer to Chapter 9 of the EIAR for additional details).

[9] It should be noted that no cement dust, nor any sulphate/nitrate mineral dust is produced by the Site.
[10] Relevant in the context of Red Bog, Kildare SAC.
[11] This is consistent with the studies cited by Farmer (1993).

The shortest distance between the S.37L boundary (area of proposed new extraction) and Red Bog SAC is ca. 150 m.

NOISE

5.2.10. Modelling of predicted noise emissions has been carried out and the results are presented in Chapter 10 (Noise) of the EIAR. Modelling is informed by recent monitoring results[12] and site topography, and four hypothetical scenarios are assessed for their potential noise emissions in relation to 24 different noise receptors in the surrounding landscape. The modelling predicts that:

- The maximum increase in noise emissions as a result of the Proposed Development (in any of the 4 scenarios) is 3.1 dB
- Increases are only predicted at 4 locations;
- At each of the other locations, future noise emissions will be lower than current emissions and;
- None of the predicted emissions at any of the locations exceeds the limit of 55 dB.

5.2.11. The threshold for noise emissions (55 dB), as referenced above, 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 - 2023. 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.

INVASIVE SPECIES

Flora

5.2.12. Considering the nature of the proposed activities 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;
- It is not proposed to import soil from offsite for the purpose of restoration – topsoil will be retained onsite for that purpose.
- 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 and Wicklow Mountains SPA are not considered to be sensitive to the potential movement of terrestrial invasive flora. However, over a prolonged period, greylag goose terrestrial foraging habitat might be lost to (e.g.) Japanese knotweed scrub.

[12] Historical monitoring indicates that noise levels at all locations have been consistently below the 55 dB threshold.

Fauna

5.2.13. 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. Sika deer and feral goats were observed during both surveys, so their presence does not represent the recent introduction of invasive fauna.

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: ■ Groundwater gradient is to the west/northwest (and therefore away from the SAC); ■ Deterioration in habitat condition. ■ Changes to groundwater regime (i.e. fluctuations in level)	As per Sections 5.2.2 - 5.2.5: ■ Groundwater gradient is to the west/northwest (and therefore away from the SAC); ■ Physico-chemical analysis of groundwater within, and down-gradient of the Site indicate that groundwater quality perturbations will not occurred; and ■ The SAC is a perched water feature and therefore does not interface with the groundwater table. It can therefore be concluded that significant effects to qualifying habitat (transition mires) will not occur as a result of groundwater emissions. **No LSE**	None
	Dust emissions: ■ 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 will not be of a magnitude to give rise to significant effects on the qualifying habitat of the SAC (transition mires). **No LSE**	None
	Spread of invasive species: ■ Deterioration in habitat condition and; ■ A decrease in area coverage of qualifying habitat.	As per Sections 5.2.12 and 5.2.12, the spread of invasive flora into the Proposed Development is theoretically possible, but the likelihood of seeds and/or viable plant tissue being transported inside the SAC boundary (from the Proposed Development specifically) is considered extremely low – for this to occur the same vehicles, machinery and/or personnel would need to enter both sites, and viable seeds/tissue transported in tyre treads and/or the soles of footwear. There is no scope for this eventuality as part of the Proposed Development. It has therefore been concluded that significant impacts to qualifying habitat (transition mires) will not occur as a result of the spread of invasive flora. Considering the current and ongoing presence of sika deer and feral goats within the Proposed Development Site, and that the barriers preventing their ingress to the SAC (i.e. stock-proof fencing) are not proposed to change, the Proposed	None

Site Activity	Potential Impacts	Screening Assessment	LSEs
		Development in the absence of mitigation does not represent any change in circumstance. **No LSE**	
Poulaphouca Reservoir SPA (004063)			
Continuation of existing quarrying activities and proposed expansion	Habitat loss: ▪ Reduction of foraging habitat for greylag geese (a QI species).	Expansion of the quarry will result in the loss of ca. 28 ha of suitable foraging habitat for greylag geese. In the absence of survey data, the precautionary principle is applied and this effect is therefore assumed to be significant. **LSE**	Loss of foraging habitat
	Habitat loss: ▪ Spread of Invasive Species Resulting in the decrease of available foraging habitat for greylag geese.	As per Section 5.2.17 and 5.2.18, the spread of invasive species from the Site during the Proposed Development is considered highly unlikely to occur. Even in such an event, a substantial period of time needs to elapse before significant effects to occur in this context. **No LSE**	None
	Disturbance: ▪ To foraging greylag geese in fields within and adjacent to the Proposed Development.	Whilst noise emissions are unlikely to result in disturbance (see Section 5.2.11) visual disturbance is possible as a result of the incursion of plant and personnel into areas where greylag geese are foraging. **LSE**	Disturbance and deterrence from foraging.
Wicklow Mountains SPA			
Continuation of existing quarrying activities and proposed expansion	Habitat Loss: ▪ Reduction of available foraging habitat for peregrine falcon (a QI species).	The Proposed Development will result in the loss of ca. 28 ha of foraging habitat for peregrine falcon from this SPA. The species' diet is composed almost exclusively of birds and is dominated by thrushes, pigeons and crows (Rizzolli, et al., 2005) which are readily found throughout the Irish landscape. The loss of this land is not considered to be important to the species as the Site is located outside the core foraging range for peregrine falcon (Scottish Natural Heritage, 2016) combined with the abundance of other supporting land surrounding the SPA. **No LSE**	None

CONCLUSION – EFFECTS IN ISOLATION

5.3.1. When considered in isolation, the Proposed Development was found to have the potential to result in significant effects on **Poulaphouca Reservoir SPA** as outlined in Table 5-2. No LSEs to Red Bog SAC or Wicklow Mountains SAC were determined. All other European sites are 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 occur. 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, Kildare SAC), the potential for these to act in combination with other projects must be considered. The scope of this in-combination assessment considered other plans and projects within a radius of 500 m of the Site. This distance was chosen based on the distance of noise monitoring station N1K from the edge of the existing quarry pit. N1K 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 5.2.11). As such, 500 m has been chosen as a representative distance beyond which noise impacts will not occur. In addition, in accordance with Table 5-1, dust impacts are considered up to 50 m from the boundary of Red Bog, Kildare, 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 radius[13] 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 thought highly unlikely greylag geese that may graze at the Site would also graze at a location so remote. Instead, a search for large infrastructural projects within 2 km of the Site was undertaken, which were deemed likely to have resulted in large-

[13] In accordance with the core foraging range of greylag geese.

scale loss of grassland. This approach was chosen to capture projects which may be used by the same population of greylag geese that may also graze at the Site.

5.4.6. As the Proposed 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 within the last five years, 2019-2024 inclusive[14]. Refused applications, applications for retention and incomplete applications 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. The result of this search for planning applications are displayed in Table 5-3. The following sources were used in the search:

- Planning Enquiry System – Kildare County Council[15]
- Planning Enquiry System – Wicklow County Council[16]
- EIA Portal[17]

5.4.8. Kildare County Development Plan 2023-2029 (Kildare County Council, 2023) and Wicklow County Development Plan 2022-2028 (Wicklow County Council, 2022) were also consulted.

[14] Planning permission generally has a lifespan of 5 years in Ireland (Planning and Development Act 2000, Section 40)
[15]https://webgeo.kildarecoco.ie/planningenquiry [Accessed 23 January 24]
[16]https://www.eplanning.ie/WicklowCC/searchtypes [Accessed 23 January 24]
[17]https://www.gov.ie/en/publication/9f9e7-eia-portal/?referrer=http://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal [Accessed 23 January 24]

Table 5-3 – Planning Applications Considered for In-Combination Assessment

Planning Reference	Status/Year Consented	Location	Approximate distance to European Site	Description of the proposal, and conclusion in respect of LSE in combination with the Proposed Development
23503 (Kildare)	Granted 12/09/2023	Red Bog, Blessington, Co. Kildare. North side of L6038-1. Property entrance is ca. 50 m from the boundary of Red Bog, Kildare SAC.	50 m to Red Bog, Kildare SAC	The construction of a detached domestic shed (ca. 60 m^2) and all associated site works. 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. The proposed works area is at the rear (north) of an existing dwelling and is screened by hedging on all other sides. Whilst the property boundary is ca. 50 m from the SAC boundary, the proposed works area is ca. 290 m from the qualifying habitat (transition mire). Kildare County Council did not raise any objections on the grounds of potential adverse dust emissions. 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. **No LSE**

CONCLUSION – EFFECTS IN COMBINATION

5.4.9. A single project was identified within 500 m of Red Bog SAC and was assessed for dust that could act in combination with the Proposed Development. No further projects or plans were identified within 500m of Red Bog SAC.

5.4.10. No projects or plans were identified within 500m of Poulaphouca Reservoir SPA.

5.4.11. Similarly, no large projects or plans were identified within 2km of Poulaphouca Reservoir SPA that could act in combination with the Proposed Development.

5.4.12. Considering the information outlined in this section, the Proposed Development is highly unlikely to act in combination with other plans or projects to result in significant effects to any European site.

5.5 CONCLUSION OF SCREENING ASSESSMENT

5.5.1. The AA screening process (Stage 1) has determined that significant effects from the Proposed Development are possible on Poulaphouca Reservoir SPA. These effects may arise due to loss of functionally connected habitat and due to disturbance to a QI species.

5.5.2. The Proposed Development is not affiliated with or necessary for the management of the SPA and so, Poulaphouca Resevoir will be taken forward for the further consideration in the Stage 2 of the process (NIS). This will determine the implications for Poulaphouca Reservoir SPA in view of its conservation objectives, in order to determine the effects (if any) on the integrity of the SPA.

6 NATURA IMPACT STATEMENT (STAGE 2)

6.1 INTRODUCTION

6.1.1. As described in Section 3.1.1, and in accordance with DoEHLG (2009), as the proposed project has the potential to have significant negative impacts on a Natura 2000 site, Appropriate Assessment must be carried out. DoEHLG (2009) states the following:

6.1.2. "*At Stage 2, the impact of a project or plan alone and in combination with other projects or plans on the integrity of the Natura 2000 site is considered with respect to the conservation objectives of the site and to its structure and function*."

6.1.3. This NIS investigates the impacts of the LSEs identified in Section 5 in relation to the integrity of Poulaphouca Reservoir SPA considering its conservation objectives. Identified LSE are described in relation to details of the Proposed Development, European site information, ecological supporting information and impact avoidance and mitigation measures. The assessment considers the effects of the Proposed Development alone, as no other plans or projects were identified to have in-combination effects.

6.2 ASSESSMENT OF POTENTIAL EFFECTS ON SITE INTEGRITY

6.2.1. The screening process in Section 5 concluded that the Proposed Development has the potential to result in the following significant effects on Poulaphouca Reservoir SPA:

- Habitat loss for foraging greylag geese; and
- Disturbance/displacement of foraging greylag geese.

6.2.2. With reference to Table 5-2, the potential significant effects, and the qualifying features to which these effects apply, are presented in Table 6-1 alongside their respective conservation objectives. The assessment considers the potential for the Proposed Project to undermine the European site's conservation objectives.

CONCLUSION – EFFECTS ON SITE INTEGRITY

6.2.3. This assessment has concluded that the Proposed Development will not have any effects on the integrity of Poulaphouca SPA. As such, mitigation is not proposed.

Table 6-1 – Assessment of Effects on Site Integrity

QI	Status	Conservation Objectives	Potential Impacts	Assessment of Effects to Site Integrity
Greylag goose [A043]	Published literature indicates the marked decline of greylag geese at Poulaphouca Reservoir SPA. The mean number of individual greylag geese recorded in peak counts between 1995 and 2000 is 701 (Department of Arts, Heritage and the Gaeltacht, 2013). Annual peak counts in 2017, 2018 and 2019 reported 96, 73 and 8 geese respectively (Burke, et al., 2022).	The following has been directly transposed from the '*Conservation Objectives for Poulaphouca Reservoir SPA [004063]* (NPWS, 2022) To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests[4] for this SPA. The favourable conservation status of a species is achieved when: ■ Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; ■ The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future and;	Population declines of greylag goose due to loss of functionally linked habitat.	The area of affected habitat (28 ha) represents ~0.027% of available foraging habitat (a maximum of approximately 104321 ha[18]) for greylag geese from Poulaphouca SPA. Furthermore, it has been concluded that greylag geese prefer large, elevated fields remote from human settlements (Rosin, et al., 2012). This would suggest the presence of an active quarry and associated human presence at the Site for approximately 70 years would deter any foraging geese. Due to the factors described above, **no significant effects on greylag goose** are anticipated as a result of loss/degradation of functionally linked habitat. Therefore, **no adverse effect on site integrity** has been identified.
			Population declines of greylag goose due to disturbance and displacement. The species has potential to be disturbed on foraging grounds such as those within and adjacent to the	Considering: ■ The abundance of suitable foraging habitat in the surrounding landscape;

[18] 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.

QI	Status	Conservation Objectives	Potential Impacts	Assessment of Effects to Site Integrity
		▪ There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis (NPWS, 2022).	Site. Greylag geese are considered to have medium sensitivity to disturbance and are recommended a nonbreeding season buffer zone up to a maximum of 600 m. Disturbance may change the energy intake/expenditure, alter breeding success, and eventually impact their population (Goodship & Furness, 2022).	▪ The size of the affected area relative to the available habitat (~0.027% as described above); ▪ The most recent peak count data for Poulaphouca Reservoir suggest that greylag geese are present in very small numbers (8 individuals); ▪ The quarry has been in operation since the 1950s and fauna have become acclimatised to conditions arising from Site operations; ▪ The Proposed Development is temporary in nature, it is considered that disturbance from the Proposed Development will not undermine the conservation objectives of the SPA. Due to the factors described above, **no significant effects on greylag goose** are anticipated as a result of disturbance/displacement impacts. Therefore, **no adverse effects on site integrity** have been identified.

7 CONCLUSION – NATURA IMPACT STATEMENT

7.1.1. This Appropriate Assessment Screening and NIS has been completed in compliance with the relevant European Commission and national guidelines. The potential effects during, and after, the proposed works have been considered in the context of the European Sites potentially affected, their Qualifying Interests, Special Conservation Interests and Conservation Objectives.

Based on the best scientific knowledge available, it is concluded that there will be no significant adverse impacts on the integrity of Poulaphouca Reservoir SPA as a result of the Proposed Development. For this reason, mitigation is not deemed necessary.

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