

Proposed Extension to Ballinrooaun Quarry, Screen, Co. Wexford

ASSESSMENT FOR SCREENING
AS REQUIRED UNDER THE 2011 EUROPEAN COMMUNITIES
(BIRDS AND NATURAL HABITATS) REGULATIONS

Prepared for:



By:



February 2018

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Abstract: This document comprises a Screening Stage appraisal, in support of the Appropriate Assessment process, of the proposed extension of quarrying at Ballinrooaun, Screen, Co. Wexford. It is proposed to progressively extract and restore the application site using imported inert material to fill the quarry void. The proposed quarry extension will progress from the northeast towards the south. Appropriate Assessment is required under Article 6(3) and 6(4) of the Habitats Directive for any project or plan that may give rise to significant effects on a Natura 2000 site. This screening report follows the methodological guidelines set out in the document 'Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites' (2001) and published guidelines from the Department of Environment, Heritage and Local Government (2009). It is concluded that there is no risk of adverse impacts on any designated Natura 2000 site or their qualifying interests associated with the proposed extension of quarrying at Ballinrooaun Quarry, Screen, Co. Wexford.

Table of Contents

	Page
1. INTRODUCTION	1
1.1. BACKGROUND TO AA PROCESS.....	2
2. METHODOLOGY.....	4
3. METHODOLOGY.....	9
4. STAGE 1: SCREENING	11
4.1. BRIEF DESCRIPTION OF THE PROJECT & SITE	11
4.2. BRIEF DESCRIPTION OF THE NATURA 2000 SITES.....	16
5. STAGE 1: ASSESSMENT CRITERIA	25
5.1. ELEMENTS OF THE PROJECT LIKELY TO IMPACT ON THE NATURA 2000 SITES.....	25
5.2. LIKELY IMPACTS OF THE PROJECT ON THE NATURA 2000 SITES.....	28
5.3. LIKELY CHANGES TO THE NATURA 2000 SITES.....	31
5.4. LIKELY IMPACTS ON THE NATURA 2000 SITES AS A WHOLE.....	32
5.5. INDICATORS OF SIGNIFICANCE AS A RESULT OF THE IDENTIFICATION OF EFFECTS SET OUT ABOVE	32
5.6. ELEMENTS OF THE PROJECT LIKELY TO SIGNIFICANTLY IMPACT ON THE NATURA 2000 SITES OR WHERE THE SCALE OR MAGNITUDE OF IMPACTS ARE UNKNOWN	33
FINDING OF NO SIGNIFICANT EFFECTS REPORT.....	34
6. REFERENCES	38

APPENDIX 1: Site Synopses and Conservation Objectives of Designated Natura 2000 sites under consideration

1. INTRODUCTION

Ecology Ireland Wildlife Consultants Ltd. was commissioned by Tom Phillips & Associates (on behalf of Sean and Michael Kelly) to produce a Screening Stage appraisal in support of the Appropriate Assessment (AA) process, in relation to the proposed extension of quarrying activities at Ballinrooaun, Screen, Co. Wexford (Figure A6.1). This appraisal report has been completed in parallel with the planning application being prepared for the site, including an Environmental Impact Assessment Report (EIAR). The following Stage 1 Screening Report considers the potential impacts on Natura 2000 sites in the hinterland arising from the proposed quarrying activities at Ballinrooaun Quarry, Co. Wexford.

Ballinrooaun Quarry is a permitted sand and gravel pit quarry (Planning ref. 20082323). The existing permitted quarry site is c. 5.5 ha in area. It is proposed to extend quarrying for sand and gravel within an area of agricultural grassland (and comprising part of the existing quarry) of c. 8.45 ha. The quarry floor will remain at a minimum of 5m above the high-water table at all times. As a result, there will be no requirement for pumping or storage of groundwater. Due to the permeable substrates in the proposed site, rainfall will permeate the quarry floor to re-charge groundwater, and surface water run-off is predicted to be minimal.

Ecology Ireland Wildlife Consultants Ltd. (Ecology Ireland) completed a comprehensive desktop review and detailed field surveys to inform this ecological impact assessment (EclA). Ecology Ireland previously prepared the EclA for an application for the extension of the quarrying activities at this site (P2016/0261 & PL26.246680). The 2016 planning application unsuccessfully sought permission for a considerably larger site with a greater range in elevation. The current application covers a considerably smaller footprint than applied for in 2016 (8.45 ha). The extraction plan will involve the stripping of the topsoil (c. 0.3m) and upper 3m of sandy soil will be stockpiled separately to be used in progressive site restoration. The site boundary overlaps the current area of extraction and includes lands to the west and southwest of the existing quarry (Figure 6.2). The current application site also excludes the lands to the north which are more elevated, and which were included in the 2016 application.

The lands are well drained agricultural grassland with no ponds or watercourses of any note. The restoration plan for the proposed extension area involves filling the quarry void with imported inert soil from pre-approved external sites. No peats, topsoil, non-hazardous wastes or contaminated soils will be accepted as suitable infill material. The lifetime of the quarry is estimated at 20 years, with extraction occurring from years 1-14 and infilling being carried out as part of a progressive restoration plan from years 4-20. It is proposed that extraction will commence in the northeast, proceeding southwards. It is proposed that the quarry access road would also be progressively realigned as the extraction and infilling/restoration process develops. Extractive depth will be kept a minimum of 5m above the groundwater level.

In terms of site services, there are no built structures proposed as part of the new application. There is no water supply or foul water drainage serving the site. Persons employed on site use the facilities available at the Applicants family farm yard located to the west of the site (c. 750 m west) and will be maintained for the proposed development.

Once infilling is completed in an area the stockpiles of sandy soil and topsoil will be used to reinstate the top 3.3m of overburden. The existing seedbank will naturally revegetate the restored areas to grassland habitat.

1.1. BACKGROUND TO AA PROCESS

A screening assessment is undertaken to establish if any proposed plan or project is likely to have a significant effect or impact on any site that has been designated under the E.U. Habitats Directive (92/43/EEC) as a Special Area of Conservation (SAC), or the E.U. Birds Directive (79/409/EEC as amended 2009/147/EC) as a Special Protection Area (SPA). Collectively, SAC's and SPA's are known as Natura 2000 sites. The E.U. Habitats Directive was initially transposed into Irish law under the European Communities (Natural Habitats) Regulations 2007 (SI 94/1997), which were subsequently amended under SI 233/1998 and SI 378/2005. More recently, these regulations were revised through the European Communities (Birds and Natural Habitats) Regulations 20011 (SI 477/2011). Also, the management of sea-fisheries within Natura 2000 sites is now legislated nationally through the European Union (Birds and Natural Habitats) (Sea-Fisheries) Regulations 2013 (SI 290/2013) to implement responsibilities in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 and 2013.

A screening assessment is part of an appropriate assessment process that consists of up to four steps, where each step follows on from the preceding one. The need to undertake one or more phases of this process has arisen from Articles 6(3) and 6(4) of the Habitats Directive; where the former Article is primarily concerned with the protection of sites from likely significant effects and the latter allows derogation from such protection in very specific circumstances involving imperative reasons of overriding public interest. Designated Natura 2000 sites have a set of qualifying interests and associated conservation objectives that are considered in detail in the assessment of the potential impacts of a project or plan.

The first part of the assessment is a screening process to identify whether significant¹ effects on a Natura 2000 site are likely to arise from the project or plan in question. If significant effects are likely to occur or if it is unclear whether significant effects are likely to occur, then the process moves onto the next phase where an appropriate assessment (AA) considers potential mitigation measures for adverse impacts identified in Screening. Typically, a Natura Impact Statement (NIS) is prepared by consultants on behalf of the promoter/developer of a plan or project and this is part of the information used by the competent authority in carrying out an Appropriate Assessment of the proposed plan or project. If it is considered that mitigation measures will not be able to satisfactorily reduce potential adverse impact on a Natura 2000 site then an assessment of alternative solutions is considered in third phase of the assessment process. If adverse effects remain and the proposed activity or development is deemed to be of Imperative Reasons of Overriding Public Interest (IROPI), the final assessment step permits consideration of permission for development with consideration of compensatory measures.

¹ A European Court of Justice ruling in 2013 (Case C-258/11) has stated the following regarding significant effect: "Where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site."

While a screening assessment appraisal or NIS may be provided by the advocate of the plan or project in question, the AA itself is undertaken by the competent authority (*e.g.* the planning authority and An Bord Pleanála). So, in this case, the screening assessment for the project, described herein, is undertaken by Wexford County Council; informed by this Stage 1 Screening Statement and any other relevant information provided to the statutory body.

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2. METHODOLOGY

This report presents the outcome of screening assessment to identify whether significant effects or impacts are likely to arise from the proposed quarry extension at Ballinrooaun, Screen, Co. Wexford. It is important to emphasize that a screening assessment does not have to ascertain the existence of a significant effect or impact on a Natura 2000 site as such; it only has to establish whether a significant effect or impact is possible or may occur (as per judgement by Ms. Justice Finlay Geoghegan; see guidelines below). Also, mitigation measures that are an intrinsic part of a project may be considered as part of an Appropriate Assessment Stage 1 Screening process (as per judgement by Mr. Justice Hedigan; see guidelines below). This report has been completed as part of a planning application by the client to extend the existing sand quarry at Ballinrooaun. The projected lifetime of this project is approximately 20 years, including the restoration process.

The conservation objectives of Natura 2000 sites have been compiled by the National Parks & Wildlife Service (NPWS) in relation to the habitats and species (*i.e.* qualifying interests) for which the sites are selected. These conservation objectives are referred to when carrying out appropriate assessments for plans and projects that might impact on these sites.

Documents associated with the development and relevant ecology databases were consulted as part of this assessment (as outlined in Sections 4 & 5 below). Detailed field assessments of flora, habitats and fauna were also carried out in 2015 by Ecology Ireland Wildlife Consultants Ltd. In addition, the following guidance documents and legal rulings were considered in the preparation of this Screening Assessment.

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – European Commission Methodical Guidance on the provisions of Article 6(3) and 6(4) of the ‘Habitats’ Directive 92/43/EEC (European Commission 2001)
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009)
- Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner’s Manual (EPA 2013)
- European Court of Justice Ruling 11th April 2013 Case C- 258/11 Peter Sweetman and Others v An Bord Pleanála - Criteria to be applied when assessing the likelihood that N6 Galway City Outer Bypass road scheme will adversely affect the integrity of Lough Corrib SAC
- High Court Ruling 25th July 2014 by Ms. Justice Finlay Geoghegan; Neutral Citation [2014] IEHC 400; High Court Record No. 2013 802 JR; Kelly -v- An Bord Pleanála – Judicial review of grant of planning by An Bord Pleanála for two wind farm phases in County Roscommon
- High Court Ruling 24th November 2014 by Mr. Justice Hedigan; Neutral Citation [2014] IEHC 557; High Court Record No. 2014 320 JR; Rossmore Properties Limited & Anor -v- An Bord Pleanála
- High Court Ruling 25th February 2016 by Mr. Justice Barton. Neutral Citation [2016] IEHC 134; High Court Record No. 2013 450 JR; Balz & Anor -v- An Bord Pleanála.

The proposed site at Ballinrooan Quarry is not located within any Natura 2000 site (Figure A6.2). However, the southern boundary of the existing quarry and the southwestern portion of the proposed extension area, lies directly adjacent to Screen Hills SAC. A further 7 Natura 2000 sites are located within 15 km of the proposed development (Tables A6.1 and Figure A6.2).

Table A6.1. Designated Natura 2000 sites within wider hinterland of Ballinrooan Quarry, Co. Wexford.

Designated Site	Site Code	Distance (km)
Screen Hills SAC	000708	0 (Directly adjacent)
The Raven SPA	004019	2.3
Wexford Harbour & Slobs SPA	004076	2.3
Raven Point Nature Reserve SAC	000710	3.7
Slaney River Valley SAC	000781	4.9
Long Bank SAC	002161	9.1
Kilmuckridge-Tinnaberna Sandhills SAC	001741	10.1
Blackwater Bank SAC	002953	10.3

The Long Bank SAC and Blackwater Bank SAC comprises offshore sandbanks located >7 km off the Wexford coastline, and are designated for submerged sandbanks, an Annex I Habitat of the E.U. Habitats Directive. Kilmuckridge-Tinnaberna Sandhills SAC is a narrow coastal beach site which is designated for its Annex I dune habitats (marram/white dunes and fixed/grey dunes). There is no recognisable pathway by which any works at the proposed quarry could impact on these three Natura 2000 sites. The proposed development does not have the potential to impact (either directly or indirectly) on Long Bank SAC, Blackwater Bank SAC, or Kilmuckridge-Tinnaberna Sandhills SAC or their qualifying interests, as there are no hydrological links between these designated sites and the proposed quarrying site, and these Natura 2000 sites are located over 9 km from the proposed quarry extension. These sites are therefore not considered further in this screening report. The Raven Point Nature Reserve SAC, located 3.7 km distant, is a large sand dune system designated for a suite of coastal habitats which are listed on Annex I of the E.U. Habitats. There is no hydrological link between the proposed site and this SAC, ruling out potential impacts on its qualifying habitats. Therefore, Raven Point Nature Reserve SAC is also not considered further in this screening assessment.

The proposed quarry site lies north of and directly adjacent to parts of Screen Hills SAC (Figure A6.2) which is designated for important examples of two habitats listed on Annex I of the E.U. Habitats Directive (oligotrophic lakes and dry heath). Potential impacts of the development on this SAC and its qualifying interests will be considered here due to this proximity.

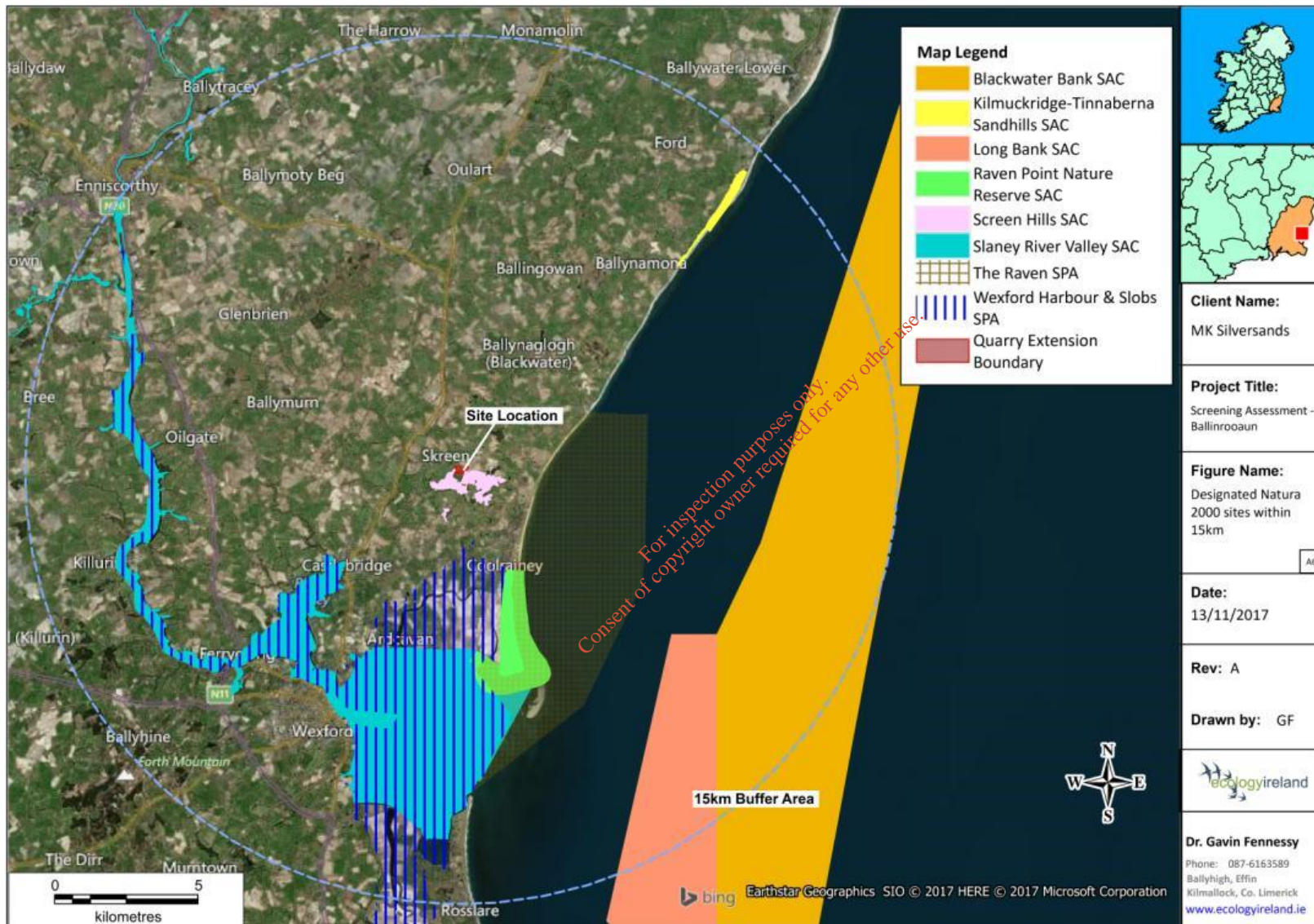
There are no hydrological links between the proposed site and The Raven SPA lying 2.2 km distant. However due to its proximity to the proposed site, potential impacts on its qualifying bird interests will be further considered in this screening assessment. The proposed site is located within the River Sow sub-catchment, which discharges into the north-east channel of the Slaney River Estuary near Castlebridge and Wexford Harbour. The estuary here is part of the Slaney River Valley SAC and Wexford Harbour & Slobs SPA. Water quality has been identified as a key indicator of conservation value for these two Natura 2000 sites. This Screening appraisal will therefore also consider the potential for indirect impacts on these sites as a result of this hydrological link, and also, in terms of bird species, due to the proximity

of Wexford Harbour & Slobb SPA (2.3 km). The four Natura 2000 sites under consideration (below) are further detailed in Section 4.2.

- Screen Hills SAC (Site Code 000708)
- The Raven SPA (004019)
- Wexford Harbour & Slobb SPA (004076)
- Slaney River Valley SAC (000781)

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3. METHODOLOGY

A screening stage appraisal is part of an appropriate assessment process that consists of up to four stages, where each stage follows on from the preceding one. In Stage 1, a screening process is undertaken to identify whether significant impacts on a Natura 2000 site are likely to arise from the project or plan in question. If significant impacts are likely to occur, then the process moves on to Stage 2 where an appropriate assessment (AA) considers potential mitigation measures for adverse impacts. If it is considered that mitigation measures will not be able to adequately minimise potential adverse impact on a Natura 2000 site then an assessment of alternative solutions is considered in Stage 3. This may then be followed by Stage 4 of the process in the event that adverse impacts remain and the proposed activity or development is deemed to be of Imperative Reasons of Overriding Public Interest (IROPI), allowing an assessment of compensatory measures to be considered. The outcome of a Stage 2 and higher assessment is presented in a report known as a Natura Impact Statement (NIS).

This Screening Stage appraisal is prepared in support of the Appropriate Assessment process which will be completed by the competent authority, Wexford County Council. The outcome of a Stage 1 screening assessment needs to identify whether significant impacts are likely to arise from the proposed development on the Natura 2000 sites in the locality. The following guidelines were used in the completion of this report;

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – European Commission Methodical Guidance on the provisions of Article 6(3) and 6(4) of the ‘Habitats’ Directive 92/43/EEC (European Commission 2001)
- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009)
- The recently delivered Opinion of Advocate General Sharpston regarding Case C-258/11 where the Irish Supreme Court sought guidance on interpreting adverse impact on Natura 2000 site integrity in relation to the N6 Galway City Outer Bypass road scheme and Article 6(3) of Council Directive 92/43/EEC (European Advocate General 2012).

Consideration of potential impacts on Natura 2000 sites as a result of the proposed quarry development has been informed by desktop review and also on the findings of a range of ecological surveys carried out at and adjacent to the proposed development site to inform the ecology assessment for the EIAR, as follows:

Desktop review sources:

- Previous planning documents relating to the quarry (Planning refs. 20082323; P2016/0261, PL26.246680)
- Environmental Impact Assessment, particularly Ecology Chapter 6, Chapter 7, Lands Soils & Geology and Chapter 8, Hydrology and Hydrogeology
- Ecological survey prepared as Condition of Permission (Goodwillie, 2009)
- Data and mapping from the National Parks and Wildlife Service, NPWS, website www.npws.ie

- Data and mapping from the National Biodiversity Data Centre website (www.biodiversityireland.ie)
- Data and mapping from the Environmental Protection Agency, EPA, website www.epa.ie
- Published literature and reports e.g. EPA (2009), Maitland & Hatton-Ellis (2000).

Baseline ecological surveys:

- General site walkover surveys
- Detailed habitat and botanical survey (Sep 2015). Habitat codes in text are from Fossitt (2000)
- General bird survey transects (Sep, Oct, Dec 2015)
- Mammal camera surveys (Aug - Dec 2015, 6 separate locations)
- Passive bat detector study (10 nights)
- Lands, Soils & Geology by AGECLTD. (Chapter 7 of the EIAR)
- Hydrology and hydrogeology surveys by Aqua GeoServices Ltd. (Chapter 8 of EIAR)

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4. STAGE 1: SCREENING

4.1. BRIEF DESCRIPTION OF THE PROJECT & SITE

Sean and Michael Kelly are seeking planning permission for the extension of quarrying works at Ballinrooaun Quarry, Screen, Co. Wexford located in the rural townland of Ballinrooaun c. 2 km north of Curracloe, and c. 2.3 km east of the Wexford coastline, as shown in Figure A6.1. The existing sand and gravel pit quarry measuring c. 5.5 ha is operating under Planning Ref. No. 20082323. The proposed quarry extension comprises an area of c. 8.45ha to the west and south-west of the existing site (Figure A6.3). The quarry is accessed through a private agricultural road.

A planning application was lodged on in September 2008 for retention, continued operation and extension of the existing sand and gravel pit on a site of c. 5.5 ha, to provide a final extracted area of 3.45 ha and to a depth of 60 m above OD. Retention was sought for an existing mobile sand and gravel screening plant, loading areas and vehicle parking areas. The development included a wheelwash, areas of stockpiling, landscaping, other site development works above and below ground and restoration of the final pit void. Permission was granted in July 2009 subject to conditions including an operational period of a maximum of seven years from the date of permission with an additional period of six months to implement a closure plan. As part of the planning conditions the site owner entered into an agreement to contain an undertaking to dedicate and maintain an area on the applicant's landholding as a 'compensation area' as part of a long term management and restoration plan for the quarry.

The surrounding area is relatively elevated (70-100m OD) with extensive views in all directions. The landscape is characteristic of the 'kettle and kame' glacial landscape. Runoff from storm water is rarely observed at the existing quarry and agricultural fields given the drainage afforded by the sand and gravel base. Rainfall infiltrates immediately and during extreme rainfall events there may be small ponds formed which soon after drain away.

In 2016 an application was lodged seeking permission for the continuation and restoration of the existing operational sand and gravel quarry of 5.5 hectares and extension area of c. 9.7 hectares (P2016/0261 and PL26.246680). The eastern portion of the application site included the existing permitted quarry and the western portion was dominated by agricultural grassland. Permission was ultimately refused with An Bord Pleanála ultimately refusing permission with the size of the proposed extension and the elevation of the quarry cited as the principal issues.

The current application covers a considerably smaller footprint than applied for in 2016 (8.45 ha). The extraction plan (over an area of c. 5.52 ha) would involve the stripping of the topsoil (c. 0.3m) and upper 3m of sandy soil which would be stockpiled separately to be used in progressive site restoration. The site boundary overlaps the current area of extraction and includes lands to the west and southwest of the existing quarry (Figure A6.3). The current application site also excludes the lands to the north which are more elevated, and which were included in the 2016 application.

The lands are well drained agricultural grassland with no ponds or watercourses of any note. The restoration plan for the proposed extension area involves filling the quarry void with imported inert soil from pre-approved external sites. No peats, topsoil, non-hazardous wastes or contaminated soils will be accepted as suitable infill material. The lifetime of the quarry is estimated at 20 years, with extraction occurring from years 1-14 and infilling being carried out as part of a progressive restoration plan from years 4-20. It is proposed that extraction will commence in the northeast, proceeding southwards. It is proposed that the quarry access road would also be progressively realigned as the extraction and infilling/restoration process develops. Extractive depth will be kept a minimum of 5m above the groundwater level.

In terms of site services, there are no built structures proposed as part of the new application. There is no water supply or foul water drainage serving the site. Persons employed on site use the facilities available at the Applicants family farm yard located to the west of the site (c. 750 m west) and will be maintained for the proposed development.

Once infilling is completed in an area the stockpiles of sandy soil and topsoil will be used to reinstate the top 3.3m of overburden. The existing seedbank will naturally revegetate the restored areas to grassland habitat.

The proposed extension of the quarrying will involve some limited removal of hedgerows internally with additional planting to improve the boundary hedgerows.

Environmental controls to prevent contamination of groundwater etc. are presented in the EIAR:

- Quarry floor a minimum of >5 m above water table
- Re-fuelling the screening machine – according to current EMS protocols. For instance, all fuel will be stored at the nearby farm yard in a bunded area with a double-skin tank with fuel delivered to the mobile screener in a double-skinned mobile fuel bowser.
- Prevention of wind-blown sand – use of sprinklers and planting boundary hedgerow
- Soil Management Plan
- Progressive Restoration Plan
- Water quality monitoring – groundwater well monitoring throughout the lifetime of the quarry
- Recommendation for before and after biological water quality for Glenbough stream
- No slurry spreading on restored agricultural grassland

This AA screening report assesses the potential impacts associated with the extension of quarrying at Ballinroaun Quarry on Natura 2000 sites.



4.1.1. EXISTING SITE DESCRIPTION

The quarry (sand-pit) is located in the townland of Ballinrooaun, near Screen in County Wexford. The landscape type in the wider area is rare in an Irish context being part of a classic kettle and kame landscape, with lake basins marking the site of former ice blocks in an acid sandy moraine. The lakes vary in size, most being pond-sized. The moraine sands are extremely base poor and very dry. This gives rise to extensive pasture-type dry heath, which is species rich and renowned for rare and scarce plants.

The site of the quarry is in an area typical of this Kettle and Kame landscape and comprises gently rolling pastureland rising northwards and falling away to the south to two small lakes which lie over 300m outside the application boundary. The proposed extension is situated directly to the west and south of the active area of works.

Much of the existing quarry site area can be classified as active quarries and mines (ED4). The open active sand pit is associated with piles of spoil and finer sand that occur along the quarry fringes. Significant re-establishment of vegetation has occurred on the quarry fringes and areas of piled spoil which now support areas of recolonising bare ground (ED3) together with a significant area of reseeded Improved Agricultural Grassland (GA1) to the north of the existing quarry. An area of less improved acid grassland (GS3) occurs to the south of the quarry developed on previously graded spoil which extends into the adjacent SAC area – as part of the agreed reinstatement process. Some scrub (WS1) is associated with field margins and slopes. The main portion of the extension area is primarily reseeded pasture (GA1) separated by hedgerows (WL1).

The proposed extension area is c. 8.45 ha (comprise part of the exiting quarry floor to be used for storage of overburden). Principal land-uses in the remainder of the landholding is cattle grazing and the lands were also under tillage in recent decades. The farm is therefore a much-managed agricultural landscape with few areas of semi-natural habitat. Some areas of semi-natural habitat do however, occur within the proposed development site and these are associated acid grassland, field margins, recolonizing bare soil, scrub and hedgerows.

Goodwillie (2009) carried out a rare plant survey at and in the vicinity of the existing quarry, including a compensation area as conditioned in the planning permission for operation of the quarry. One species of note was recorded on stored topsoil at the site: Annual Knawel, *Scleranthus annuus*, which is listed on the Flora Protection Order (FPO 2015). The sighting was of a single plant but it was concluded that the species was likely to persist in the seedbank in the topsoil material stored for future site restoration purposes. No other protected species is known to occur within the application area.

No species of flora protected under the FPO was recorded from within the application site during any of the ecological walkovers in 2015. No Annex I habitats were present within the application site. Nomenclature for habitats follows Fossitt (2000). Nomenclature for vascular plants follows Stace (1997), nomenclature for bryophytes, mosses follow Smith (1978). No invasive plant species were recorded within or immediately adjacent to the proposed site boundary (Chapter 6 Ecology, EIAR).

While there are no surface water features inside the proposed site, there is a hydrological link to Wexford Harbour & Slobbs SPA and Slaney River Valley SAC via draining groundwater as follows; the proposed

extension site is located c. 0.3 km north-east from the source of the Glenbough Stream. This stream is likely fed by groundwater at source (Chapter 8 Hydrology and Hydrogeology, EIAR). Topographical surveys indicated that the proposed extension site drains entirely south-west towards the Glenbough stream. Therefore, any contamination of groundwater could potentially impact on the quality of the Glenbough stream (Chapter 8, EIAR). This stream is within the River Sow sub-catchment (www.epa.ie). The Glenbough stream flows southward at first, turning westward and, at Sinnottsmill, joins with Sinnottsmill River, which in turn continues to flow approximately south-westward and joins the River Sow <0.5 km before it discharges to the north-east channel of the lower estuary of the Slaney River at Wexford Harbour. The mouth of the River Sow is located near Castlebridge, within the overlapping Natura 2000 sites, Wexford Harbour & Slobs SPA and River Slaney Valley SAC.

The River Sow does not merge with the main freshwater channel of the River Slaney which discharges into the west of the lower estuary of the Slaney River at Wexford Harbour >4 km away from the mouth or the River Sow. Therefore, the hydrological link from the proposed quarry only has the potential to impact on the estuarine waters here, and not on the freshwater upper regions of the River Slaney, i.e. the majority of the Slaney River Valley SAC. The River Slaney has an overall length of 117 km from its source in the Lugnaquilla Mountains in Co. Wicklow to Wexford Harbour. It is noticeably tidal as far as Edermine Bridge but with tidal influence upstream as far as Enniscorthy, i.e. along a channel of c. 19 km in length. The Wexford Harbour & Slobs SPA overlaps in extent with the Slaney River Valley SAC upstream along this c. 19 km upper estuary as far as the River Slaney's confluence with the River Urrin below Enniscorthy.

Environmental controls to prevent contamination of groundwater in the proposed site are detailed in the EIAR and summarised in Section 4.1. Chapter 8 (Hydrogeology & Hydrology) of the EIAR describes the receiving environment, mitigation by avoidance and environmental controls that will be implemented at this site. It is considered that any residual water quality impacts are highly unlikely. Furthermore, the eventual discharge point of waters originating in the Glenbough stream (located c. 0.3 km off-site) to Wexford Harbour & Slobs SPA and Slaney River Valley SAC lies >3.7 km via land. Nonetheless, potential (indirect) impacts of the proposed quarry works on Slaney River Valley SAC and Wexford Harbour & Slobs SPA via the hydrological link to the lower Slaney estuary at Wexford Harbour will be further considered in this screening assessment. The Sow or Sinnottsmill rivers are not designated as salmonid rivers. The River Sow had a biological water quality rating (Q index) of Q3-4 (moderate status) in 2014 at the nearest sampling station at Randallsmill Bridge (upstream from the confluence with Sinnottsmill River). The River Sow WFD (Water Framework Directive) Risk Score is classified as '*at risk of not achieving good status*' and its WFD Status is '*unassigned*' where it enters the lower Slaney estuary/Wexford Harbour (www.epa.ie). Q indices are not available for Sinnottsmill River, and its WFD Risk Score is classified as '*at risk of not achieving good status*' and its WFD Status is '*unassigned*' where it enters the lower Slaney estuary/Wexford Harbour (www.epa.ie).

The proposed site and The Raven SPA are not hydrologically linked, and there is no possibility of water quality impacts on wetlands there as a result of the proposed quarrying activity. However, potential impacts on its qualifying avian species through disturbance or displacement are further considered in this assessment due to its proximity to the proposed site (c. 2.3km). Further details of the four Natura 2000 sites under consideration in this screening assessment are outlined in Section 4.2.

4.2. BRIEF DESCRIPTION OF THE NATURA 2000 SITES

The proposed development site is not located within any designated conservation site. Screen Hills SAC however lies directly adjacent to sections of the boundary in the western and southeastern part of the proposed site (Figure A6.2). As discussed in Section 2 of this report, there are a further 7 Natura 2000 sites within 15 km of the development site (Table A6.1). Four of these sites (Long Bank SAC, Blackwater Bank SAC, Kilmuckridge-Tinnaberna Sandhills SAC, and Raven Point Nature Reserve SAC) have already been screened out as having no potential to be impacted (directly or indirectly) by the proposed quarry development and are not considered further here. Natura 2000 sites assessed in this screening report are:

- Screen Hills SAC (Site Code 000708)
- The Raven SPA (004019)
- Wexford Harbour & Slobbs SPA (004076)
- Slaney River Valley SAC (000781)

The latter three of these Natura 2000 sites lie directly beside or partly overlap with each other (Figure A6.2). As described in Section 4.1, the Slaney River Valley SAC and Wexford Harbour & Slobbs SPA largely overlap with each other along the lower and upper estuaries of the River Slaney and Wexford Harbour, while The Raven SPA is located northeast and adjacent to Wexford Harbour & Slobbs SPA. Screen Hills SAC is immediately adjacent to the proposed site. The Raven SPA is c. 2.3 km east of the proposed site and is not hydrologically linked, while there is a hydrological link to Wexford Harbour & Slobbs SPA and River Slaney Valley SAC via the River Sow catchment. The Natura 2000 site locations are displayed in Figure A6.2 and a summary of the conservation importance and qualifying interests of the sites is presented in Table A6.2.

Full details of the site synopsis and conservation objectives of each Natura 2000 site, as published by NPWS, are available in Appendix A6.1. In brief, Screen Hills SAC is designated for Annex I habitats 'oligotrophic waters containing very few minerals (3110)' and 'dry heath (4030)'. The Raven SPA and Wexford Harbour & Slobbs SPA (adjacent to each other) are some of the most ornithologically important sites in the country, and are listed for their wetlands and their nationally and internationally important populations of a wide range of bird species of conservation concern as listed in Table A6.2. The Slaney River Valley SAC stretches 117 km from its source in the Wicklow Mountains to its mouth in Wexford Harbour with a diverse range of qualifying interests encompassed. These include freshwater, woodland, and estuarine Annex I habitats as listed in Table A6.2, and Annex II aquatic species which are sensitive to water quality impacts, including freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, Twaite shad, Atlantic salmon, otter, and common (harbour) seal as listed (with scientific names) in Table A6.2.

The overall conservation objectives of Screen Hills SAC and Slaney River Valley SAC are to maintain or restore the 'favourable conservation status' (defined in the EU Habitats Directive for habitats and species) of habitats and species for which these sites have been selected, including the habitats of the annexed species. In its broadest sense, favourable conservation status means that an ecological feature is being maintained in a satisfactory condition, and that this status is likely to continue into the future. The

overarching conservation objective for Wexford Harbour & Slobs and The Raven SPA is to ensure that waterbird populations and their wetland habitats are maintained at, or restored to, favourable conservation condition. This includes, as an integral part, the need to avoid deterioration of habitats and significant disturbance; thereby ensuring the persistence of site integrity.

As described in Section 4.1, there is a hydrological link through potential groundwater flow from the proposed site to the source of the Glenbough Stream which eventually discharges into the northeast channel of the lower estuary of the River Slaney. Environmental controls to prevent contamination of groundwater in the proposed site are included in the proposed development as described in Section 4.1, rendering water quality impacts highly unlikely. Furthermore, the eventual discharge point of waters originating in the Glenbough stream (located c. 0.3 km off-site) to Wexford Harbour & Slobs SPA and Slaney River Valley SAC lies >3.7 km via land and >5km by water. Nonetheless the potential to impact on qualifying interest Annex II species which are sensitive to water quality impacts in the Slaney River Valley SAC are considered and screened out below.

Freshwater pearl mussel (*Margaritifera margaritifera*) (1029)

The freshwater pearl mussel is listed as one of the conservation interests of the Slaney River Valley SAC. This species listed under Annex II and V of the E.U. Habitats Directive and is endangered throughout its worldwide distribution. It is highly sensitive to the negative impacts of nutrients and silt into rivers, and can only survive in very high quality rivers with clean (unsilted) river beds and waters with very low levels of nutrients. Pearl mussels may live to over one hundred years. They have a complicated life cycle, involving an early juvenile stage being transported on the gills of native salmon or trout before falling off to become filter feeders in the river bed. The decline of pearl mussel populations in Ireland has mostly occurred from the continuous failure to produce new generations of mussels because of the loss of clean gravel beds, the juvenile habitat, which have been smothered by fine silt sediment and/or overgrown by algae and macrophytes due to increased nutrient levels. Acidification of waters also inhibits their ability to form shell, and toxic pollutants such as sheep dip can also cause rapid die-offs (EPA, 2009). Within the Slaney River Valley SAC, freshwater pearl mussel is confined to the upper reaches within the tributary catchment of the Dereen River in counties Wicklow and Carlow (EPA, 2009). The hydrological link from the proposed quarry to the lower estuary of the River Slaney at Wexford Harbour (described in Section 4.1) thus precludes any impact on the freshwater pearl mussel. Therefore, this species will not be considered further in this screening assessment.

Sea lamprey (*Petromyzon marinus*) (1095); brook lamprey (*Lampetra planeri*) (1096); River lamprey (*Lampetra fluviatilis*) (1099)

The brook lamprey is the only one of the three native lamprey species (above) that is non-parasitic and spends all of its life cycle in freshwater. The river lamprey and sea lamprey are parasitic during some of their life cycle and anadromous (spend most of their adult lives in salt water, and migrate to freshwater rivers and lakes to reproduce). All three lamprey species are listed as conservation interests of the Slaney River Valley SAC. While river lamprey and sea lamprey migrate upstream to spawn through the lower estuary, spawning does not take place in the lower estuary of the Slaney River Valley SAC. The hydrological link to the proposed site via the River Sow catchment has no potential to impact on spawning habitats, which are the most vulnerable to water quality impacts. Potential impacts on these three lamprey species will not be considered further in this screening assessment.

Twaiite shad (*Alosa fallax*) (1103); Atlantic salmon (*Salmo salar*) (1106);

These qualifying interest fish species of the Slaney River Valley SAC are also anadromous. Similarly, to the lamprey species above, the vulnerable spawning grounds occur in the upper reaches of the Slaney Rivers and some of its tributaries. Again, the hydrological link from the proposed quarry to the lower estuary of the River Slaney at Wexford Harbour (described in Section 4.1) precludes any impact on the spawning grounds of these two fish species in the River Slaney.

Otter (*Lutra lutra*) (1355) and Common (harbour) seal (*Phoca vitulina*) (1365)

Otters and harbour seals use the area around the Slaney Estuary/Wexford Harbour for foraging and resting. Reduced water quality and ecological status downstream of the Glenbough Stream within the estuary could potentially have indirect effects on otters and harbour seal as a result of reduced food supply. Both are dependent on fish stocks, which are ultimately dependent on water quality. Given the environmental controls in the proposed quarry development to prevent contamination to groundwater (which may enter Glenbough Stream), and the distance to the proposed site, it is considered highly unlikely that the proposed quarry has the potential to adversely impact on otters and harbour seals in the Wexford Harbour area. These species will not be considered further in this assessment.

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Table A6.2. Summary of Designated Natura 2000 Sites considered in this Screening Report.

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
Screen Hills SAC	(000708)	<p>The Screen Hills are located in the south-east of Ireland, just north of the Wexford Slob. The site is characterised by a type of glacial landscape known as 'kettle and kame', a term which refers to kettlehole lakes found in hollows between small hills. The lakes, which are mostly small, mark the positions of former ice blocks in an acidic, sandy moraine. The Screen Hills contain important examples of two habitats listed on Annex I of the E.U. Habitats Directive, with the heath area being particularly unusual. The area is very important as a good example of a 'kettle and kame' glacial landscape. The presence of several Red Data Book plant species adds further importance to this site.</p> <p>The site is selected for the following habitats listed on Annex I of the E.U. Habitats Directive (numbers in brackets are Natura 2000 codes):</p> <ul style="list-style-type: none"> • [3110] Oligotrophic Waters containing very few minerals • [4030] Dry Heath <p>The lakes in the site are of two broad types. The first type are low-lying and in contact with groundwater, and these are influenced by what is occurring over a wide area. The second type are suspended at a height above the regional water table, and are influenced by the area immediately surrounding them. These lakes can usually be considered oligotrophic (low in nutrients), although nutrient input from the adjacent land may change this.</p> <p>Dry heath at the site is extensive and species-rich. The heath vegetation at the site differs from most heaths elsewhere in the virtual absence of Heather, and in the presence of a diverse range of annual species. Substantial populations of the following Red Data Book species have been found at this very important and complex site, and in other localities on and adjoining the moraine: Slender Cudweed (<i>Logfia minima</i>), Wood Cudweed (<i>Omalotheca sylvatica</i>), Hairy Bird's-foot-trefoil (<i>Lotus subbiflorus</i>) and Bird's-foot (<i>Ornithopus perpusillus</i>) Annual Knawel (<i>Scleranthus annuus</i>) and Musk Thistle (<i>Carduus nutans</i>). Four of the species mentioned above are legally protected under the Flora (Protection) Order, 2015 – Slender Cudweed, Wood Cudweed, Hairy Bird's-foot-trefoil, and Annual Knawel.</p>	0 km (Directly adjacent)

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
The Raven SPA	(004019)	<p>The Raven SPA is situated on the north side of Wexford Harbour, incorporating the dynamic sand dune system of Raven Point and the coastal strip running north to Blackwater Head. The seaward boundary of the site extends a distance of 2 km from the shoreline. The Raven sand dune system comprises a suite of coastal habitats listed on Annex I of the EU Habitats Directive.</p> <p>This site is of international ornithological importance as it provides crucial roosting habitat for the Wexford Harbour flock of Greenland White-fronted Geese, forming the principal night roost for this species in Ireland. The site also provides habitat for a range of other species, including six which have populations of <i>National Importance</i>; the Raven is probably the most regular site in the country for Slavonian Grebe. Of particular significance is that six of the wintering species are listed on <i>Annex I of the E.U. Birds Directive</i>, i.e. Red-throated Diver, Great Northern Diver, Slavonian Grebe, Golden Plover, Bar-tailed Godwit and Greenland White-fronted Goose. Little Tern, a species breeding in the site, is also listed on Annex I of this directive. Owing to the recognised importance of the area, Raven Point is a <i>statutory Nature Reserve and a Ramsar site</i>.</p> <p>The site is designated for the following bird species listed on Annex I of the E.U. Birds Directive, and also wetlands (numbers in brackets are Natura 2000 codes):</p> <ul style="list-style-type: none"> • [A001] Red-throated Diver (<i>Gavia stellata</i>), wintering 	2.2 km

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
		<ul style="list-style-type: none"> • [A017] Cormorant (<i>Phalacrocorax carbo</i>), wintering • [A065] Common Scoter (<i>Melanitta nigra</i>), wintering • [A141] Grey Plover (<i>Pluvialis squatarola</i>), wintering • [A144] Sanderling (<i>Calidris alba</i>), wintering • [A395] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>), wintering • [A999] Wetlands and Waterbirds <p>This SPA is adjacent to Wexford Harbour & Slobs SPA (004076). These SPAs partially overlap with Raven Point Nature Reserve SAC (000710) and Slaney River Valley SAC (000781) below.</p>	
Wexford Harbour & Slobs SPA	004076	<p>Wexford Harbour is the lowermost part of the estuary of the River Slaney, a major river that drains much of the south-east region. The site is divided between the natural estuarine habitats of Wexford Harbour, the reclaimed polders known as the North and South 'Slobs', and the tidal section of the River Slaney. The seaward boundary extends from the Rosslare peninsula in the south to the area just west of The Raven Point in the north. Wexford Harbour & Slobs SPA is one of the top three sites in the country for numbers and diversity of wintering birds, and one of the most important ornithological sites in the country.</p> <p>It is of <i>World Importance</i> for Greenland White-fronted Goose. The geese feed almost entirely within the Slobs and roost at The Raven SPA (004019 above). It supports <i>Internationally Important</i> populations of a further four species (Mute Swan, Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit). In addition, it has 25 species of wintering waterbirds with populations of <i>National Importance</i>. Also of significance is that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Little Egret, Whooper Swan, Bewick's Swan, Greenland White-fronted Goose, Hen Harrier, Golden Plover, Bar-tailed Godwit, Ruff, Wood Sandpiper, Little Tern and Short-eared Owl.</p> <p>The site regularly supports in excess of 20,000 waterbirds during winter. Its wetlands include extensive areas of intertidal flats exposed at low tide which are fringed with saltmarsh in places, especially in sheltered areas such as Ferrycarrig, Castlebridge and Hopeland. At Castlebridge,</p>	2.3

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
		<p>saltmarsh grades into brackish marsh which is quite extensive and diverse. Other wetland habitats include lagoons, dune slacks and reedswamp (NPWS, 2011b).</p> <p>The site is designated for the following bird species listed on Annex I of the E.U. Birds Directive, and also wetlands (numbers in brackets are Natura 2000 codes):</p> <ul style="list-style-type: none"> • [A004] Little Grebe (<i>Tachybaptus ruficollis</i>) • [A005] Great Crested Grebe (<i>Podiceps cristatus</i>) • [A017] Cormorant (<i>Phalacrocorax carbo</i>) • [A028] Grey Heron (<i>Ardea cinerea</i>) • [A037] Bewick's Swan (<i>Cygnus columbianus bewickii</i>) • [A038] Whooper Swan (<i>Cygnus cygnus</i>) • [A046] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) • [A048] Shelduck (<i>Tadorna tadorna</i>) • [A050] Wigeon (<i>Anas penelope</i>) • [A052] Teal (<i>Anas crecca</i>) • [A053] Mallard (<i>Anas platyrhynchos</i>) • [A054] Pintail (<i>Anas acuta</i>) • [A062] Scaup (<i>Aythya marila</i>) • [A067] Goldeneye (<i>Bucephala clangula</i>) • [A069] Red-breasted Merganser (<i>Mergus serrator</i>) • [A082] Hen Harrier (<i>Circus cyaneus</i>) • [A125] Coot (<i>Fulica atra</i>) • [A130] Oystercatcher (<i>Haematopus ostralegus</i>) • [A140] Golden Plover (<i>Pluvialis apricaria</i>) • [A141] Grey Plover (<i>Pluvialis squatarola</i>) • [A142] Lapwing (<i>Vanellus vanellus</i>) • [A143] Knot (<i>Calidris canutus</i>) • [A144] Sanderling (<i>Calidris alba</i>) 	

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
		<ul style="list-style-type: none"> • [A149] Dunlin (<i>Calidris alpina</i>) • [A156] Black-tailed Godwit (<i>Limosa limosa</i>) • [A157] Bar-tailed Godwit (<i>Limosa lapponica</i>) • [A160] Curlew (<i>Numenius arquata</i>) • [A162] Redshank (<i>Tringa totanus</i>) • [A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) • [A183] Lesser Black-backed Gull (<i>Larus fuscus</i>) • [A195] Little Tern (<i>Sterna albifrons</i>) • [A395] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) • [A999] Wetland and Waterbirds 	
Slaney River Valley SAC	000781	<p>This site comprises the freshwater stretches of the River Slaney as far as the Wicklow Mountains; a number of tributaries, the larger of which include the Bann, Boro, Glasha, Clody, Derry, Derreen, Douglas and Carrigower Rivers; the estuary at Ferrycarrig; and Wexford Harbour. The site flows through the Counties of Wicklow, Wexford and Carlow. The river is up to 100 m wide in places and is tidal at the southern end from Edermine Bridge below Enniscorthy. The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, and habitats listed on Annex I of this Directive, as well as important numbers of wintering wildfowl including some species listed on Annex I of the E.U. Birds Directive. The presence of wet and broadleaved woodlands increases the overall habitat diversity and the occurrence of a number of Red Data Book plant and animal species adds further importance to the site. Two rare aquatic plant species which are legally protected under the Flora (Protection) Order, 2015, have been recorded in this site: Short-leaved Water-starwort (<i>Callitriche truncata</i>), a very rare, small aquatic herb found nowhere else in Ireland, and Opposite-leaved Pondweed (<i>Groenlandia densa</i>). At the southern end of the site, the Red Data Book species Yellow Archangel (<i>Lamium galeobdolon</i>), Blue Fleabane (<i>Erigeron acer</i>), Basil Thyme (<i>Acinos arvensis</i>), and Slender Cudweed (<i>Logfia minima</i>) occur. Basil Thyme and Slender Cudweed are protected under the Flora (Protection) Order, 2015.</p>	4.9

Site Name	Site Code	Key Conservation Reasons and Qualifying Interests	Minimum Distance to Site (km)
		<p>The site is of high ornithological importance also, overlapping as it does with the Wexford Harbour & Slobs SPA (above).</p> <p>The site is selected for the following habitats and/or species listed on Annex I/II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):</p> <p>Annex I Habitats:</p> <ul style="list-style-type: none"> • [1130] Estuaries • [1140] Tidal Mudflats and Sandflats • [3260] Floating River Vegetation • [91A0] Old Oak Woodlands • [91E0] Alluvial Forests* <p>Annex II Species:</p> <ul style="list-style-type: none"> • [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) • [1095] Sea Lamprey (<i>Petromyzon marinus</i>) • [1096] Brook Lamprey (<i>Lampetra planeri</i>) • [1099] River Lamprey (<i>Lampetra fluviatilis</i>) • [1103] Twaite Shad (<i>Alosa fallax</i>) • [1106] Atlantic Salmon (<i>Salmo salar</i>) • [1355] Otter (<i>Lutra lutra</i>) • [1365] Common (Harbour) Seal (<i>Phoca vitulina</i>) 	

5. STAGE 1: ASSESSMENT CRITERIA

5.1. ELEMENTS OF THE PROJECT LIKELY TO IMPACT ON THE NATURA 2000 SITES

The proposed development is not situated within any Natura 2000 site. There are no potential direct impacts on any Natura 2000 sites as a result of the proposed extension of the sand and gravel quarry at Ballinrooan. A total of 8 Natura 2000 sites occur within 15 km of the proposed site (Table A6.1). However, only four of these sites have been identified as having the potential to be impacted (indirectly) by the proposed quarry development and will be assessed in this screening report. These are:

- Screen Hills SAC (Site Code 000708)
- The Raven SPA (004019)
- Wexford Harbour & Slobs SPA (004076)
- Slaney River Valley SAC (000781)

Screen Hills SAC is located immediately adjacent to sections of the boundary in the southern side of the proposed site. It is designated for Annex I habitats, oligotrophic lakes and dry heath. The Raven SPA lies c. 2.3 km to the east of the site and there is no hydrological link to it from the proposed site. Wexford Harbour & Slobs SPA c. 2.3 km from the site and Slaney River Valley SAC are linked hydrologically to the site via the River Sow catchment as described in Section 4.1. The Slaney River Valley SAC is designated for a range of terrestrial, freshwater, and estuarine Annex I habitats, and also for a range of aquatic Annex II fauna species. The Raven SPA and Wexford Harbour & Slobs SPA are designated for their nationally and internationally important populations of waders and wildfowl, and the wetlands that support them. The conservation importance of these Natura 2000 sites has been outlined in Section 4.2 (see also Table A6.2 and Appendix A6.1).

As detailed in Section 4.1, the proposed development is of an existing sand and gravel pit quarry operation, with proposed extension into an area of what is currently agricultural grassland. The following elements of the proposed quarry development could potentially give rise to adverse impacts on the Natura 2000 sites listed above;

- Extending the quarry and lowering the quarry floor have the potential to impact on surface water and groundwater quality draining to the Natura 2000 sites as a result of contaminated surface water run-off or contamination of groundwater during the proposed activities. Potential pollutants include fuel, oils, hydraulic fluid, wheel wash, or silt-laden run-off from the proposed site.
- Lowering of the quarry floor has the potential to effect the quantity of groundwater supplying the oligotrophic lakes within Screen Hills SAC.
- The import of infill material could inadvertently introduce new species, including 'invasives' to the site.
- Wind-blown dust or sand from quarrying operations has the potential to have impacts on Screen Hills SAC via deposition on land or water features.

No indirect hydrological impacts are expected as a result of the proposed quarry works, as there will be no generation of contaminated surface water run-off or groundwater arising from the works. Surface water run-off will be minimal and standard embedded environmental controls will prevent any potential contamination. Furthermore, there will be no change in the groundwater re-charge rate as a result of the proposed quarrying activities. It is intended to import soil from pre-approved external sites where the developer will also carry out inspections of the materials to be imported prior to delivery to the site. Furthermore the imported infill material will be subject to basic soil characterisation, visual inspection on arrival. No topsoil material will be accepted at the quarry site which will greatly reduce the risk of importing damaging botanical species. In addition, 1 in every 500 truck-loads will be subject to detailed laboratory assessment. Any material not meeting the strict criteria for acceptance will be rejected and not used in the infill of the quarry void. Deposition of wind-blown dust/sand to surface water features or land is unlikely as a result of the environmental controls detailed in the EIAR. There will be no direct or indirect loss of qualifying habitats of the adjoining Screen Hills SAC. The project does not pose a risk for displacement or disturbance of species of qualifying interest for the Natura 2000 sites in question. As a result, there is no potential for impacts on Natura 2000 sites as a result of the proposed quarry works. This is further reiterated in the following sub-sections;

Direct Habitat Loss

The proposed development site is not located within the boundaries of any Natura 2000 site, does not include any habitats relating to the conservation objectives of the designated sites in question, and will not require any resources from these sites, thereby ruling out any direct habitat loss from these conservation sites. The topsoil (and seedbank) will be stored and used to restore the quarry.

Indirect Habitat Loss or Deterioration

Deposition of dust/sand into water features, such as oligotrophic lakes, has the potential to cause siltation impacts. A limited amount of wind-blown sand does not have the potential to damage the dry heath habitat, as it can lighten the soil and improve growing conditions for some characteristic plant species. Potential wind-blown dust/sand deposition onto the adjoining Screen Hills SAC will be reduced by a number of means; the planting of a new hedgerow along the southern perimeter of the proposed site, phased excavation while progressively restoring quarried areas, limiting top-soil stripping in windy conditions, by using a wheel wash for vehicles, use of a sprinkler to keep dust/sand down during prolonged dry weather. Dust deposition into the source of the Glenbough stream c. 0.3 km south-west of the site boundary is considered highly unlikely. No indirect impacts on any Natura 2000 site arising from dust/sand deposition are anticipated as a result of the proposed quarrying activities.

While there are no ponds or lakes inside the boundary of the proposed site, there are several within the adjoining Screen Hills SAC. A survey of ten ponds/lakes near the proposed site (Chapter 8 Hydrology and Hydrogeology, EIAR) concluded that all except Glenbough Lake were shallow (<1.5 m) ponds/lakelets fed by rainfall and not interacting with groundwater. There is thus no potential for surface water run-off or groundwater drainage from the proposed site to these lakes since the proposed quarry floor will be at least 5 m above the groundwater table, and below the depth of these shallow lakes, preventing any flow of surface-water towards them (Chapter 8 Hydrogeology & Hydrology, EIAR).

There is no requirement for pumping or storage of groundwater on site in order to carry out excavations. Furthermore, no water is used in the processing of material in the proposed development. The drainage of the general area is mainly controlled by percolation into the ground. Except for the Glenbough Stream, there are no other rivers nearby, which is a good overall indicator of the permeability of the soil/subsoil. Rainfall and any temporary surface water is predicted to percolate through the highly permeable and well-drained quarry sediments to recharge groundwater. There is thus no predicted change to the quantity of groundwater or recharge pattern in the Screen Hills SAC area as a result of the proposed activities (Chapter 8 Hydrogeology & Hydrology, EIAR).

Glenbough Lake It is located c. 0.49 km south of the proposed site within the Screen Hills SAC, and corresponds to the Annex I Habitat 'oligotrophic lakes'. Glenbough Lake is deeper than the other ponds/lakelets near the proposed quarry and is the only one which is likely to be fed by groundwater. The groundwater flow direction is oriented in a south-westward direction, i.e. away from Glenbough Lake. There is thus no pathway and no potential for an indirect water quality impact on Glenbough Lake as a result of the proposed quarrying development (Chapter 8 Hydrogeology & Hydrology, EIAR).

There is no hydrological link from the proposed site to The Raven SPA, ruling out potential indirect water quality impacts to the wetlands supporting its qualifying avian species. As detailed in Section 4.1, there is a hydrological link to Wexford Harbour & Slobbs SPA and Slaney River Valley SAC via the flow of groundwater from the proposed site towards the source of the Glenbough Stream located c. 0.3 km south west of the proposed quarry. This is part of the River Sow sub-catchment (www.epa.ie). The Slaney River Valley SAC is designated for five Annex I habitat types (Table A6.2). Two of these are woodland habitats which occur upstream from the discharge of the River Sow into the lower estuary of the Slaney River; 'old oak woodlands (91A0)' and 'alluvial forests (91E0)'. There is no recognisable pathway by which these habitats can be impacted by the proposed development. The remaining three habitats, 'estuaries (1130)', 'tidal mudflats and sandflats (1140)' and 'floating river vegetation (3260)', are vulnerable to the effects of deterioration in water quality. Likewise, the wetlands supporting the qualifying avian species of Wexford Harbour & Slobbs are vulnerable to water quality impacts. Environmental controls as summarised in Section 4.1 and described in detail in the accompanying EIAR will prevent pollution of the groundwater draining from the proposed quarry. Therefore, there will be no detrimental impact on water quality at the source of the Glenbough stream, and no potential for downstream impacts upon Natura 2000 sites as a result of this hydrological link. The Annex II aquatic species for which Slaney River Valley SAC is designated have been considered in Section 4.2. There is no potential for impact on these aquatic species as a result of the proposed quarry works.

The spread of non-native invasive plant species to habitats within Natura 2000 sites is a potential threat to their conservation status. Such species can be spread through the movement of contaminated soils, or through hydrological links between sites. No invasive plant species have been recorded on the proposed quarry site. The infill material that will be accepted at the quarry will be inert and contain no topsoil. It will be subject to basic soil characterisation and visually inspected prior to acceptance. Material will only be accepted from pre-approved sites where inspections of the materials have been carried out (most likely Greenfield sites) and there will be additional soil testing of samples (1 in 500 loads) to provide more information on the quality of the imported material. The wheel-washing and vigilance during the acceptance process will further minimise the risk of introduction of invasive or other unwanted plant species. The final restoration works at the site will involve the reinstatement of the 3m of sandy soil and

0.3m of topsoil stripped from the excavated areas. The return of the original topsoil will help ensure that the original seedbank is conserved, and that natural revegetation and succession will proceed at the quarry site as the restoration process is completed.

The site will be monitored on an annual basis by an ecologist to ensure the ecological mitigation and restoration plans are progressing as planned. An annual monitoring report will be submitted to Wexford County Council for the operational lifetime of the quarry.

Disturbance / Displacement of Species

Disturbance and/or displacement of qualifying species of Natura 2000 sites could potentially be caused through noise or visual cues. However, this requires an impact-receptor pathway, where the sites would need to be relatively close to each other in relation to noise and/or visual cues. There is no requirement for the installation of artificial lighting on site. Furthermore, there is no requirement for blasting and crushing of rock due to the softer sand and gravel substrate of the quarry. There is no potential for disturbance/displacement of species occurring within local Natura 2000 sites as proposed quarry site is at least 2.3 km from the nearest site (Table A6.1). Given the distance from the quarry to these SPAs, it is not considered likely that the proposed quarrying and restoration activities would have any adverse effects on important feeding, breeding, or roosting sites of the bird species for which these SPAs are designated. Furthermore, the agricultural lands of the site do not provide suitable habitat for the wintering waterbird qualifying species of the local SPAs. During bird surveys conducted as part of the EIA, none of the qualifying species were found to use resources within the quarry site. The Annex I species, Peregrine Falcon (*Falco peregrinus*) was recorded. However, this species is not listed among the qualifying avian species of The Raven SPA or Wexford Harbour & Slobbs SPA (Table A6.2, Appendix A6.1).

5.2. LIKELY IMPACTS OF THE PROJECT ON THE NATURA 2000 SITES

The likely impacts of the extension of sand and gravel quarrying at Ballinrooan Quarry on Natura 2000 sites are discussed below in terms of:

- Size and scale and land-take;
- Distance from Natura 2000 site or key features of the site;
- Resource requirements;
- Emissions;
- Excavation requirements;
- Transportation requirements;
- Duration of construction, operation etc.;
- Others.

5.2.1. SIZE, SCALE & LAND-TAKE

The proposed extension area is c. 8.45 ha (comprise part of the exiting quarry floor to be used for storage of overburden) in area, and several fields of improved agricultural land. With the application of the embedded environmental controls described in the EIAR, there is no potential for land or water

contamination within the designated Natura 2000 sites. The quarry will be progressively restored using the stored topsoil and 3m of underlying sandy soil to overlay the imported inert infill. The quarry is likely to provide more ecological niches for flora and fauna after post-quarrying restoration than it does at present as it is restored to low-medium intensity agricultural use. Consequently, it is considered that the size, scale and land-take of the proposed development are of no concern for the Natura 2000 sites in the wider area.

5.2.2. DISTANCE FROM OR KEY FEATURES OF THE NATURA 2000 SITES

The proposed development site is adjacent to Screen Hills SAC. There is no potential however for deleterious impacts on its qualifying interests (oligotrophic lakes and dry heath) as a result of this proximity. Disturbance and displacement is not an issue for the qualifying interests of any other Natura 2000 site, as there is adequate separation distance between the development site and Natura 2000 sites (>2.3 km). Furthermore, the habitats at the site are not suitable for the wader and waterfowl species of qualifying interest in local SPAs.

5.2.3. RESOURCE REQUIREMENTS (WATER ABSTRACTION ETC.)

There will be no resource requirements (including water abstraction) from Natura 2000 sites as a result of the proposed quarry works.

5.2.4. EMISSION (DISPOSAL TO LAND, WATER OR AIR)

There will be no disposal to land, water or air as a result of the proposed quarrying works. Stripped topsoils from the site will be re-used to restore the site after quarrying ceases. The sands extracted are of high landscaping grade and transported directly to clients in covered lorries to minimise the risk of sand-blow. No indirect hydrological impacts are expected as there will be no disposal of contaminated waters via surface water run-off or via drainage into groundwater.

5.2.5. TRANSPORT REQUIREMENTS

Transport requirements during quarrying operations will use existing infrastructure and will not occur within the boundaries of any Natura 2000 sites. The proposed extraction rate is lower than currently permitted at this site and there will be no increase in truck movements associated with restoration of the void as the trucks will be backfilled/loaded on the return leg from quarry. There will be a further reduction in traffic movements when extraction is complete and only restoration taking place (post 15th year). The proposed extraction rate equates to 31 truck movements per day down from the 39 truck movements permitted at the existing quarry.

Therefore, there are no predicted increases in the levels of traffic associated with the proposed extension of the quarry. The proposed rate of extraction is similar (but lower) than is in place for the existing quarry. Consequently, there is no concern of likely impacts relating to the transport requirements of the proposed project and the Natura 2000 sites in question.

5.2.6. DURATION OF CONSTRUCTION AND OPERATION

It is estimated that quarrying will cease after c 15 years with progressive restoration continuing until c. Year 20. Quarrying is proposed to begin in the northeast and work southwards in the proposed extension area, progressively restoring exploited areas to semi-natural habitats as quarrying ceases. No potential impacts on Natura 2000 sites as a result of the extension of quarrying operations are envisaged.

5.2.7. CUMULATIVE AND IN-COMBINATION EFFECTS

There are no other known significant plans or projects in the locality that may give rise to cumulative and in-combination effects.

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5.3. LIKELY CHANGES TO THE NATURA 2000 SITES

Based on the screening assessment presented above, and with consideration of the following potential impacts:

- **Loss of habitat**
- **Habitat or species fragmentation**
- **Disturbance to key species**
- **Reduction in species density**
- **Changes in key indicators of conservation value (water quality etc.)**
- **Changes to key element of the Natura 2000 sites**

no likely changes to the qualifying interests of Screen Hills SAC, The Raven SPA, Wexford Harbour & Sloba SPA, or Slaney River Valley SAC are anticipated as a result of the proposed extension of quarrying and Ballinrooan Quarry. This is based on the following considerations:

- The proposed development site is not within any Natura 2000 site, and nor does it provide habitat suitable for any qualifying interest species of Natura 2000 sites at present. A minimum 20m buffer will be maintained between the quarrying activity and the edge of the adjoining SAC.
- Quarrying will proceed in a phased manner from north to south, in line with the topography and natural drainage regime of the landscape thus preventing pooling of water on the quarry floor.
- The proposed quarry will operate above the groundwater table of the regional aquifer at all times. There will therefore be no requirement for the abstraction of groundwater in order to excavate the site.
- No water is used in the processing of material in the proposed development.
- The soils and substrates in the proposed area are highly permeable and well-drained. Rainwater will drain through the substrates to re-charge the groundwater. No changes to the quantity of groundwater or recharge pattern in the Screen Hills SAC area as a result of the proposed activities are anticipated.
- Standard embedded environmental controls such as those in the existing Environmental Management System (EMS) for the existing quarry, will prevent the generation of contaminated surface-water run-off or contaminated groundwater, and there is no potential for indirect water quality impacts arising from the proposed works.
- The extraction plan would involve the stripping of the topsoil (c. 0.3m) and upper 3m of sandy soil which will be stockpiled separately to be used in progressive site restoration.
- The lands are well drained agricultural grassland with no ponds or watercourses of any note. The restoration plan for the proposed extension area involves filling the quarry void with imported inert soil from pre-approved external sites. No peats, topsoil, non-hazardous wastes or contaminated soils will be accepted as suitable infill material.
- In terms of site services, there are no built structures proposed as part of the new application. There is no water supply or foul water drainage serving the site. Persons employed on site use the facilities available at the Applicants family farm yard located to the west of the site (c. 750 m west) and will be maintained for the proposed development.

- Once infilling is completed in an area the stockpiles of sandy soil and topsoil will be used to reinstate the top 3.3m of overburden. The existing seedbank will naturally revegetate the restored areas to grassland habitat.
- *The proposed quarry area will be progressively* restored to semi-natural habitats using indigenous soils and substrates after quarrying ceases. This will help to retain the natural seed-bank of the area.
- Potential wind-blown dust/sand deposition onto the adjoining Screen Hills SAC will be reduced by a number of means; the planting of a new hedgerow along the southern perimeter of the proposed site, phased excavation while progressively restoring/re-seeding exploiting areas, limiting top-soil stripping in windy conditions, use of a wheel wash for vehicles, use of a sprinkler to keep dust/sand down during prolonged dry weather.
- An annual walkover of the site will be carried out by an ecologist to monitor the restoration process and to ensure that the measures are being effectively implemented. An annual report will be prepared and submitted for the attention of Wexford County Council. The monitoring will also map encroachment of scrub, invasive species and rank grassland, and recommend appropriate actions to maintain biodiversity. Management of lands within the application site will be informed by the ecological advice and successful implementation of management strategies will be tracked on an annual basis.
- A new hedgerow will be planted along the southern boundary of the proposed site, reducing the potential for wind-blown sand into the adjoining Screen Hills SAC.
- There is >2.3 km separation distance between the proposed site and the nearest SPA (The Raven SPA) ruling out disturbance or displacement of qualifying interest species through noise or visual cues.
- The works do not pose a collision risk to any potentially over-flying qualifying interest bird species.
- There will be no additional loading on existing waste water treatment plants as a result of the proposed development.
- The number of truck movements to the site will be lower than currently permitted.

5.4. LIKELY IMPACTS ON THE NATURA 2000 SITES AS A WHOLE

Based on the screening assessment, there will be no impacts on the key relationships that define the structure or function of Screen Hills SAC, The Raven SPA, Wexford Harbour & Slobs SPA, or Slaney River Valley SAC as a result of the proposed extension of quarrying at Ballinrooan Quarry, Co. Wexford.

5.5. INDICATORS OF SIGNIFICANCE AS A RESULT OF THE IDENTIFICATION OF EFFECTS SET OUT ABOVE

Not applicable.

5.6. ELEMENTS OF THE PROJECT LIKELY TO SIGNIFICANTLY IMPACT ON THE NATURA 2000 SITES OR WHERE THE SCALE OR MAGNITUDE OF IMPACTS ARE UNKNOWN

There will be no significant impacts on Screen Hills SAC, The Raven SPA, Wexford Harbour & Slob SPA, or Slaney River Valley SAC as a result of the proposed extension of quarrying at Ballinrooan Quarry, Co. Wexford.

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FINDING OF NO SIGNIFICANT EFFECTS REPORT

Name and location of the Natura 2000 sites.	<ul style="list-style-type: none"> • Screen Hills SAC (Site Code 000708) • The Raven SPA (004019) • Wexford Harbour & Slobs SPA (004076) • Slaney River Valley SAC (000781) <p>The locations of these sites in relation to the proposed development are shown in Figure A6.2.</p>
Description of the project or plan.	<p>Ballinrooaun Quarry is a permitted sand and gravel pit quarry (planning ref. 20082323). It is proposed to extend quarrying for sand and gravel within an area of agricultural grassland (extension of c. 8.45 ha including part of existing quarry floor). Quarrying is proposed from the northeast to the south of the proposed site, in line with the natural drainage and groundwater flow of the area. The quarry floor will be a minimum of 5m above the water table in all places, and as a result there will be no requirement for pumping of groundwater. Due to the permeable substrates in the proposed site, rainfall will permeate the quarry floor to re-charge groundwater, and surface water run-off is predicted to be minimal. Inert infill material from pre-approved sites will be used to fill the void with all material subject to basic soil characterisation and pre-acceptance inspection. As quarrying ceases, exploited areas will be progressively restored to semi-natural habitats: in keeping with the surrounding land use, using only soils derived on site and not imported from elsewhere.</p> <p>Further details of the project are provided in Section 4.1.</p>
Is the Project or Plan directly connected with or necessary to the management of the site (provide details)?	No.
Are there other projects or plans that together with the project of plan being assessed could affect the site (provide details)?	No
The Assessment of Significant Effects	
Describe how the project or plan (alone or in combination) is	The proposed development will not affect the Natura 2000 sites in the wider hinterland due to the reasons outlined in the following section.

<p>likely to affect the Natura 2000 site.</p>	
<p>Explain why these effects are not considered significant.</p>	<p>There is no potential for significant effects on Natura 2000 sites as a result of the proposed extension of Ballinrooaun Quarry due to the following considerations;</p> <ul style="list-style-type: none"> • The proposed development site is not within any Natura 2000 site, and nor does it provide habitat suitable for any qualifying interest species of Natura 2000 sites at present. A minimum 20m buffer will be maintained between the quarrying activity and the edge of the adjoining SAC. • Quarrying will proceed in a phased manner from north to south, in line with the topography and natural drainage regime of the landscape, thus preventing pooling of water on the quarry floor. • The proposed quarry will operate above the groundwater table of the regional aquifer at all times. There will therefore be no requirement for the abstraction of groundwater in order to excavate the site. • No water is used in the processing of material in the proposed development. • The soils and substrates in the proposed area are highly permeable and well-drained. Rainwater will drain through the substrates to re-charge the groundwater. No changes to the quantity of groundwater or recharge pattern in the Screen Hills SAC area as a result of the proposed activities are anticipated. • Standard embedded environmental controls such as those in the existing Environmental Management System (EMS) for the existing quarry, will prevent the generation of contaminated surface-water run-off or contaminated groundwater, and there is no potential for indirect water quality impacts arising from the proposed works. • The extraction plan would involve the stripping of the topsoil (c. 0.3m) and upper 3m of sandy soil which will be stockpiled separately to be used in progressive site restoration. The restoration plan was developed in discussion with the GSI. • The lands are well drained agricultural grassland with no ponds or watercourses of any note. The restoration plan for the proposed extension area involves filling the quarry void with imported inert soil from pre-approved external sites. No peats, topsoil, non-hazardous wastes or contaminated soils will be accepted as suitable infill material. • In terms of site services, there are no built structures proposed as part of the new application. There is no water supply or foul water drainage serving the site. Persons employed on site use the facilities available at the Applicants family farm yard located to the west of the site (c. 750m west) and will be maintained for the proposed development. • Once infilling is completed in an area the stockpiles of sandy soil and topsoil will be used to reinstate the top 3.3m of overburden. The existing seedbank will naturally revegetate the restored areas to grassland habitat. • The proposed quarry area will be progressively restored to semi-natural

	<p>habitats using indigenous soils and substrates after quarrying ceases. This will help to retain the natural seed-bank of the area.</p> <ul style="list-style-type: none"> • Potential wind-blown dust/sand deposition onto the adjoining Screen Hills SAC will be reduced by a number of means; the planting of a new hedgerow along the southern perimeter of the proposed site, phased excavation while progressively restoring/re-seeding exploiting areas, limiting top-soil stripping in windy conditions, use of a wheel wash for vehicles, use of a sprinkler to keep dust/sand down during prolonged dry weather. • An annual walkover of the site will be carried out by an ecologist to monitor the restoration process and to ensure that the measures are being effectively implemented. An annual report will be prepared and submitted for the attention of Wexford County Council. The monitoring will also map encroachment of scrub, invasive species and rank grassland, and recommend appropriate actions to maintain biodiversity. Management of lands within the application site will be informed by the ecological advice and successful implementation of management strategies will be tracked on an annual basis. • A new hedgerow will be planted along the southern boundary of the proposed site, reducing the potential for wind-blown sand into the adjoining Screen Hills SAC. • There is >2.3km separation distance between the proposed site and the nearest SPA (The Raven SPA) ruling out disturbance or displacement of qualifying interest species through noise or visual cues. • The works do not pose a collision risk to any potentially over-flying qualifying interest bird species. • There will be no additional loading on existing waste water treatment plants as a result of the proposed development. • The number of truck movements to the site will be lower than currently permitted.
<p>List of agencies consulted.</p>	<p>NPWS, Jim Hurley (Wexford Field Naturalists Club)</p>
<p>Response to consultation.</p>	<p>A request for formal response to the current application was issued to the Development Applications Unity (DAU; Ref: G Pre00220/2017) but a formal response has yet to be received.</p> <p>In response to the earlier application for an extension to the quarry 2016 the DAU responded (Letter G Pre00390/2015) making several recommendations:</p> <ul style="list-style-type: none"> • The EIAR should cover all phases of the proposed development • The presence of rare and protected species should be considered and measures specified to maintain their presence post-quarrying • Impacts on the water table should be considered, particularly in the context of Screen Hills SAC • Should consult the GSI

	<ul style="list-style-type: none"> • Ecological assessment should consider impacts on biodiversity, flora, fauna & habitat. • All available data sources should be consulted • Should consider impacts on protected sites and species • Emphasize the importance on assessing hydrology and hydrogeology • Highlight the presence of Invasive species • Provide detail of hedgerows/trees lost and replacement planting measures • Consider the presence of bats • Assess the impact on watercourses and aquatic species • In relation to the Screening/AA details of sites and their qualifying interests and conservation objectives need to be considered • The Screening/AA needs to consider cumulative & ex-situ impacts • The screening/AA also needs to consider the presence of Alien Invasive species and assess the construction methodology proposed
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Data Collected to Carry out the Assessment			
Who carried out the assessment	Sources of Data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed
Dr. Gavin Fennessy of Ecology Ireland Ltd. BSc & PhD Zoology & MCIEM Dr. Mary O'Connor BSc & PhD	<ul style="list-style-type: none"> ▪ Personal observations ▪ National Biodiversity Data Centre (NBDC) online mapping ▪ NPWS online designated site data & mapping ▪ EPA online mapping and data ▪ Published literature <ul style="list-style-type: none"> ▪ Previous planning applications for the site ▪ EIAR for Ballinrooan Quarry <ul style="list-style-type: none"> ▪ Tom Phillips and Associated Planning Application and emails 	Desktop study, evaluation of the mapping and aerial photography of the development site, Baseline ecological surveys conducted as part of EIAR; Stage 1 Screening.	Full results of the assessment are presented in the above screening statement report, which is available at Wexford County Council planning department.

6. REFERENCES

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Goodwillie, R. (2009). Retention and development of sandpit at Ballinrooaun, Screen, Co. Wexford. Prepared for Wexford County Council.

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NPWS (2011a). River Slaney Valley SAC (site code 781). Conservation objectives supporting document - woodland habitats. Version 1, August 2011.

NPWS (2011b). Wexford Harbour & Slobs SPA (site code 4076) and The Raven SPA (site code 4019) conservation objectives supporting document. Version 1. December 2011.

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