



REPORT

Remedial Stage 2 Natura Impact Statement
Substitute Consent Application

Submitted to:

An Bord Pleanála

64 Marlborough Street,
D01 V902.

Submitted by:

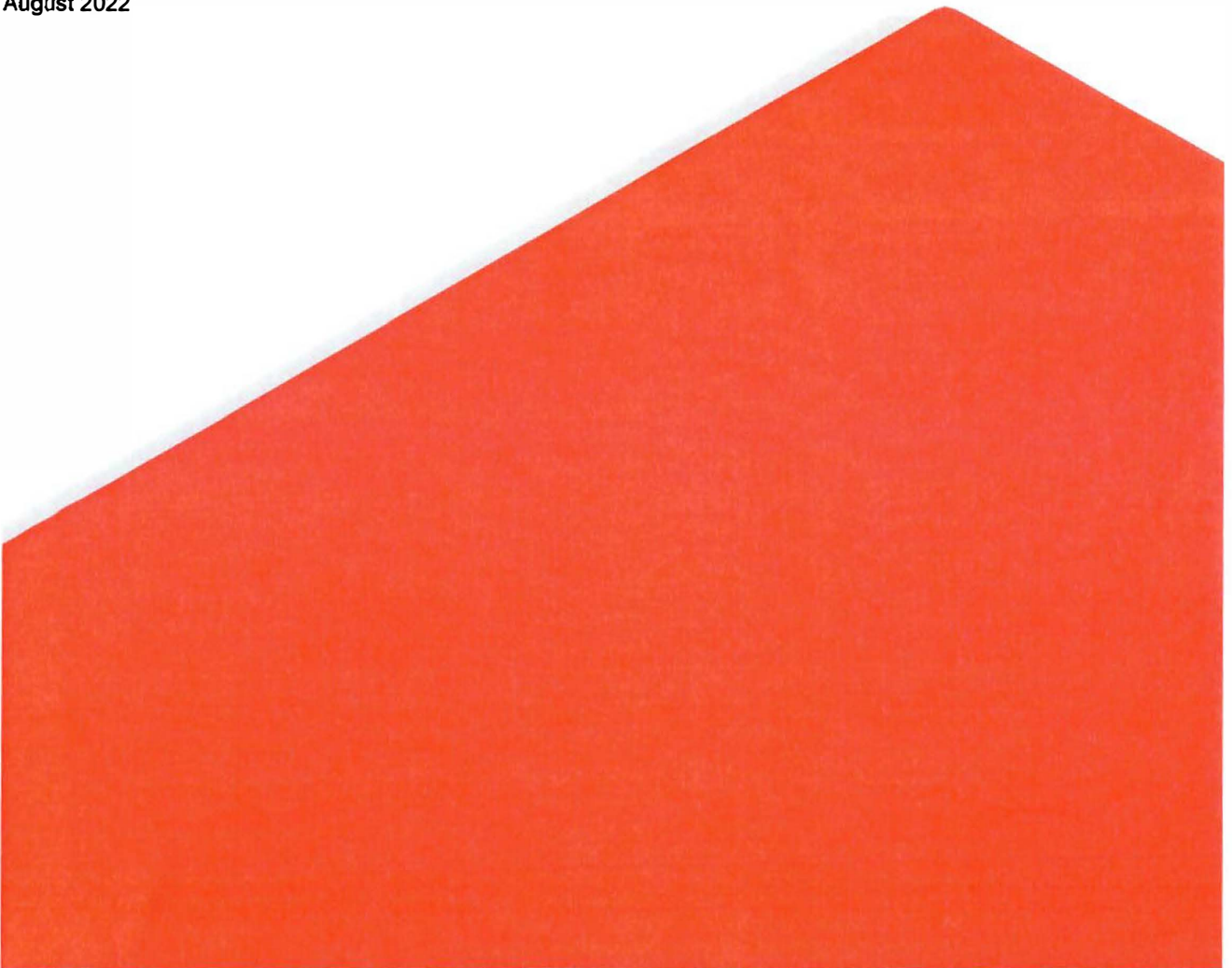
WSP Ireland Consulting Limited

Town Centre House, Dublin Road, Naas,
Co. Kildare, W91 TD0P Ireland

+353 45 810 200

2146996.R02.B1

August 2022



Distribution List

An Bord Pleanála - 6 Copies

ECT Sand & Gravel - 1 Copy

WSP Ireland Consulting Limited

Table of Contents

1.0 INTRODUCTION	1
1.1 Terms of Reference	1
1.2 Approach and Planning Precedent	2
1.3 Project Scope, Description and Embedded Design Parameters	2
2.0 METHODS	5
2.1 Desktop Review and Data Collation	5
2.2 Screening for Appropriate Assessment	5
2.2.1 Stage 1: Screening	5
2.2.2 Stage 2: Appropriate Assessment	6
2.2.3 Stage 3: Assessment of Alternative Solutions	6
2.2.4 Stage 4: Assessment where Adverse Impacts Remain	6
3.0 BASELINE AND HISTORIC SITE CONDITIONS	6
3.1 Baseline Conditions	6
3.1.1 Habitats	6
3.1.2 Aquatic Habitats and Receptors	7
3.2 Natura 2000 Sites	11
3.3 rNIS and Screening Assessment	13
3.3.1 Water	13
4.0 STAGE 1 SCREENING ASSESSMENT CRITERIA	15
4.1 Describe any likely direct, indirect or secondary impacts of the Project (either alone or in combination with other plans or projects) on the Natura 2000 sites by virtue of:	15
4.2 Describe any likely changes to the site arising as a result of:	16
4.3 Describe any likely impacts on the Natura 2000 sites as a whole in terms of:	16
4.4 Provide indicators of significance as a result of the identification of effects set out above in terms of:	16
4.5 Cumulative Impact	17
4.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown	17
5.0 DATA COLLECTED TO CARRY OUT THE ASSESSMENT	17

6.0 REFERENCES 19

TABLES

Table 1: Natura 2000 Sites within 15 km..... 12

FIGURES

Figure 1: Existing Site Layout Plan..... 3

Figure 2: The Site Baseline at 1993 4

Figure 3: Habitat Map of the Site - O'Donnell Environmental (2022). 7

Figure 4: Local River Network and Flow Directions in the Vicinity of the Site (after GSI, 2022)..... 8

Figure 5: GSI Bedrock Aquifer Designations (after GSI, 2022)..... 11

Figure 6: Natura 2000 Sites within 15 km of the Site. 13

1.0 INTRODUCTION

This evaluation presents a remedial Stage 2 Natura Impact Statement (rNIS) to provide a retrospective assessment of the potential effects that may have occurred on Natura 2000 sites and associated qualifying species as a result of activities at the existing quarry at Ballinabarny North and Bolagh Lower, Redcross, Co. Wicklow site ('the Site') between 1990 and 2022. This rNIS comprises an appraisal of potential impacts on European designated conservation sites within a 15 km radius of the Site or where an ecological pathway e.g. terrestrial or aquatic exists between the Site and a Natura 2000 site. This rNIS has been prepared by **Freddy Brookes MSc., MCIEEM – Senior Ecologist, Golder Associates (Golder)**.

The terms of reference of this report are set out below.

1.1 Terms of Reference

This rNIS has been undertaken in accordance with the requirements of the EU Habitats Directive (Directive 92/43/EEC). Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' – provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 – 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

1.2 Approach and Planning Precedent

This rNIS is presented with embedded design parameters detailed in section 1.3 below. These measures are not intended to be interpreted as mitigations to address a likely significant effect to a Natura 2000 site. Planning precedent¹ dictates that mitigation should only be presented as part of stage two in the appropriate assessment (AA) process if required to minimise likely significant effect.

1.3 Project Scope, Description and Embedded Design Parameters

The focus of this assessment, wherever possible, is centred on the establishment of likely baseline environmental conditions and potential impacts from quarrying activities between 1990 and 2022, which had the potential to affect the integrity of Natura 2000 sites including the qualifying species. In any retrospective assessment uncertainty may be a feature. As such, a conservative approach has been adopted to recognise impacts.

The Project Site extend to ca. 23.7 ha and reflect the historic operational site area including the extractable area declared under S.261 quarry registration in 2005. The quarry extraction area that makes up the application for the substitute consent planning unit currently extends to ca. 20.16 ha. lying central to the Project Site. The lands adjacent to the Site are used for agricultural purposes (including pasture and tillage) with plantations of trees located along the western, and eastern edges of the Site. An area of heath and scrub occurs immediately adjacent to the south of the Site. Farmyards and one-off residential properties also occur in the vicinity of the Site Figure 1.

The current quarry void is centrally located within the Site and is roughly square in shape. The existing administration, maintenance, storage and welfare facilities are located at the southern edge of the Site, with the aggregate processing plant area located towards the centre of the Site Figure 1.

¹ Court of Justice of the European Union (CJEU) in the matter of People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

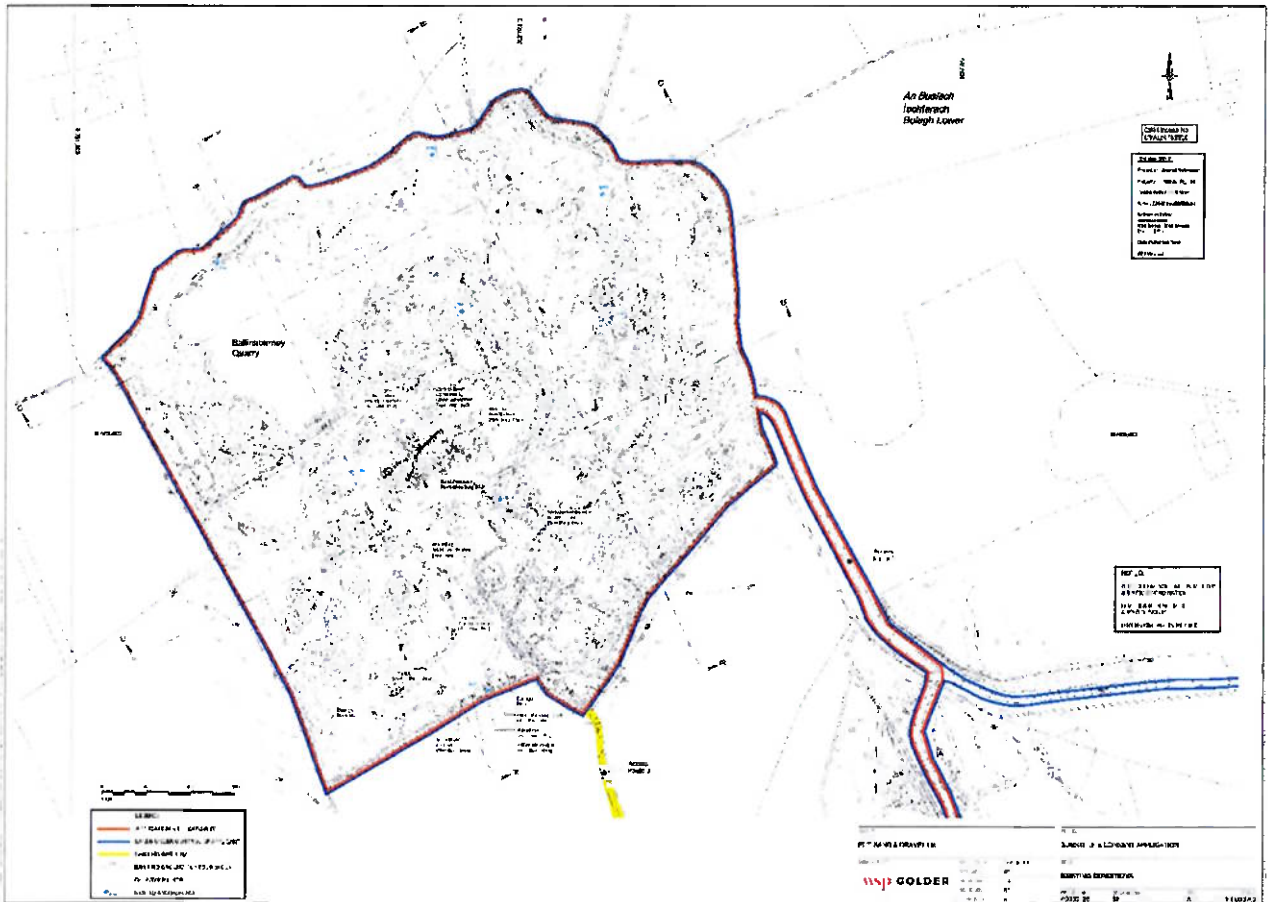


Figure 1: Existing Site Layout Plan

At baseline, in 1990 the quarried area has been determined to extend to ca. 2.9 ha. and in 2022 to have expanded laterally to ca. 20.16 ha, an increase of ca. 17 ha, with an average working depth of ca. 130 mAOD. Satellite imagery is not available for the Site during 1990. However, Figure 2 below illustrates the Site during 1993 and this forms a useful baseline result.



Figure 2: The Site Baseline at 1993

Embedded design parameters considered for this retrospective assessment are applicable owing to the following day to day operations at the Site in a current and historic context:

- The use of plant and machinery on Site poses risks of hydrocarbon spillage;
- The presence of welfare facilities and septic tank;
- Earthwork activities (e.g. excavation of quarry, movement of material silt mobilisation);
- Pumping and dewatering of the quarry pits;
- Dust mobilisation;
- Blasting of rock using explosives; and
- Use and parking of mechanical plant on the Site for excavation activities.

In order to avoid the potential impacts to the environment during the development on the Site since 1990 embedded design and commonly undertaken good practice mitigation measures were in place at the Site, including:

- Septic tanks used on the Site are/have been maintained to prevent leaks to ground and the water environment and are serviced annually. Equally welfare facilities on the Site and all plumbing are/have been well maintained.
- Wheel washing is/has been undertaken on the Site since 2016 to reduce the deposition of material on the surrounding road network that could get into the water environment. Wastewater from the wheel washes is/has been contained rather than disposed of directly to ground.
- Silt ponds are/have been located above the groundwater table.
- Refuelling takes place / has taken place on hardstanding in a designated area of the Site using a spill matt and plant is/has been well maintained to prevent uncontained releases of hydrocarbons to the ground (as confirmed by water quality results).
- Runoff from the floor (and faces) of all areas of the extraction area slopes/has sloped towards a low elevation point on the Site to prevent any surface water run-off flowing from the Site.
- Generally, works outside of the excavation areas are/have been undertaken above the groundwater table limiting the connectivity of the groundwater with any potential impacts.

2.0 METHODS

2.1 Desktop Review and Data Collation

A desktop review was conducted of available published and unpublished information, including data available on the NPWS <http://www.npws.ie>, Geological Survey Ireland (GSI), and Environment Protection Agency (EPA) web-based databases. In addition, reports pertaining to Site operations including previous EIAR submissions and Natura Stage 1 screening assessments have been used as reference materials.

2.2 Screening for Appropriate Assessment

This report has been prepared with reference to the following documents:

- European Communities (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC;
- European Communities (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats Directive' 92/43/EC;
- Department of Environment Heritage and Local Government (2009, Revision Notes 2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities; and
- European Communities (2007) Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC.

Appropriate Assessment is carried out in stages, as recommended by the above-referenced Guidance Documents. There are four stages as follows:

2.2.1 Stage 1: Screening

This initial stage aims to identify the likely impacts of the project on a Natura 2000 site, either alone or in combination with other projects or plans. The impacts are examined to establish whether these impacts are likely to be significant. Assessment of the significance of effects is carried out in consultation with the relevant nature agencies.

2.2.2 Stage 2: Appropriate Assessment

The aim of this stage is to identify the conservation objectives of the site and to assess whether or not the project, either alone or in combination with other projects or plans will result in adverse effects on the integrity of the site, as defined by the conservation objectives and status of the site. Stage 2 is carried out in consultation with the relevant nature agencies. Where it cannot be demonstrated that there will be no adverse effects on the site, it is necessary to devise mitigation measures to avoid, where possible, any adverse effects.

2.2.3 Stage 3: Assessment of Alternative Solutions

This stage examines alternative ways of implementing the project that, where possible, avoid any adverse impacts on the integrity of the Natura 2000 site. If alternative solutions have been identified that will either avoid any adverse impacts or result in less severe impacts on the site, it will be necessary to assess their potential impact by recommencing the assessment at Stage One or Stage Two as appropriate. However, if it can be reasonably and objectively concluded that there is an absence of alternatives, it will be necessary to proceed to Stage Four of this assessment methodology.

2.2.4 Stage 4: Assessment where Adverse Impacts Remain

For sites that host priority habitats and species, it is necessary to consider whether or not there are human health or safety considerations or environmental benefits flowing from the project. If such considerations do exist, then it will be necessary to carry out the Stage Four assessments of compensatory measures. If no such considerations exist, then establish whether there are other imperative reasons of overriding public interest (IROPI) before carrying out the Stage Four assessments. Where IROPI exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the site will be necessary before the project or plan can proceed.

3.0 BASELINE AND HISTORIC SITE CONDITIONS

3.1 Baseline Conditions

3.1.1 Habitats

Habitats

Ecological walkover surveys were carried out on the 9th and 10th February 2022 by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM and Donnachadh Powell BSc (O'Donnell, 2022) and an ecological walkover survey incorporating a Phase 1 habitat and flora assessment was carried out in accordance with the Heritage Council's guidelines (Smith *et al.* 2011). The dominant habitats present were classified according to Fossitt (2000) and key botanical species were identified. Any other records of interest (e.g. invasive plant species) were also marked on field maps and/or locations were recorded.

The Site based habitat appraisal was supplemented in a desk-based context and via information sharing between Golder colleagues who had attended the Site in early 2021 and 2022. Satellite imagery and historic mapping was also used to formulate the predicted baseline in a past tense context as previously indicated. This work was used to appraise the likely habitats and flora in the area within and adjacent to the development Site, and to detect the presence or likely presence of protected species, and the presence of suitable habitat for those species in a historical context. As previously described, the Site footprint increased by ca. 17 ha of outward (non-vertical) growth between 1990 and 2022. Ecological Survey methods were in general accordance with those outlined in the following documents:

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping;

- Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee (JNCC), 1990, revised 2010); and
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009).
- As previously indicated, aerial photographs and Site maps assisted the habitat survey. Habitats have been named and described following Fossitt (2000). There is no suggestion that habitats on Site that would have been residually affected would be protected under the Habitats Directive Annex I.

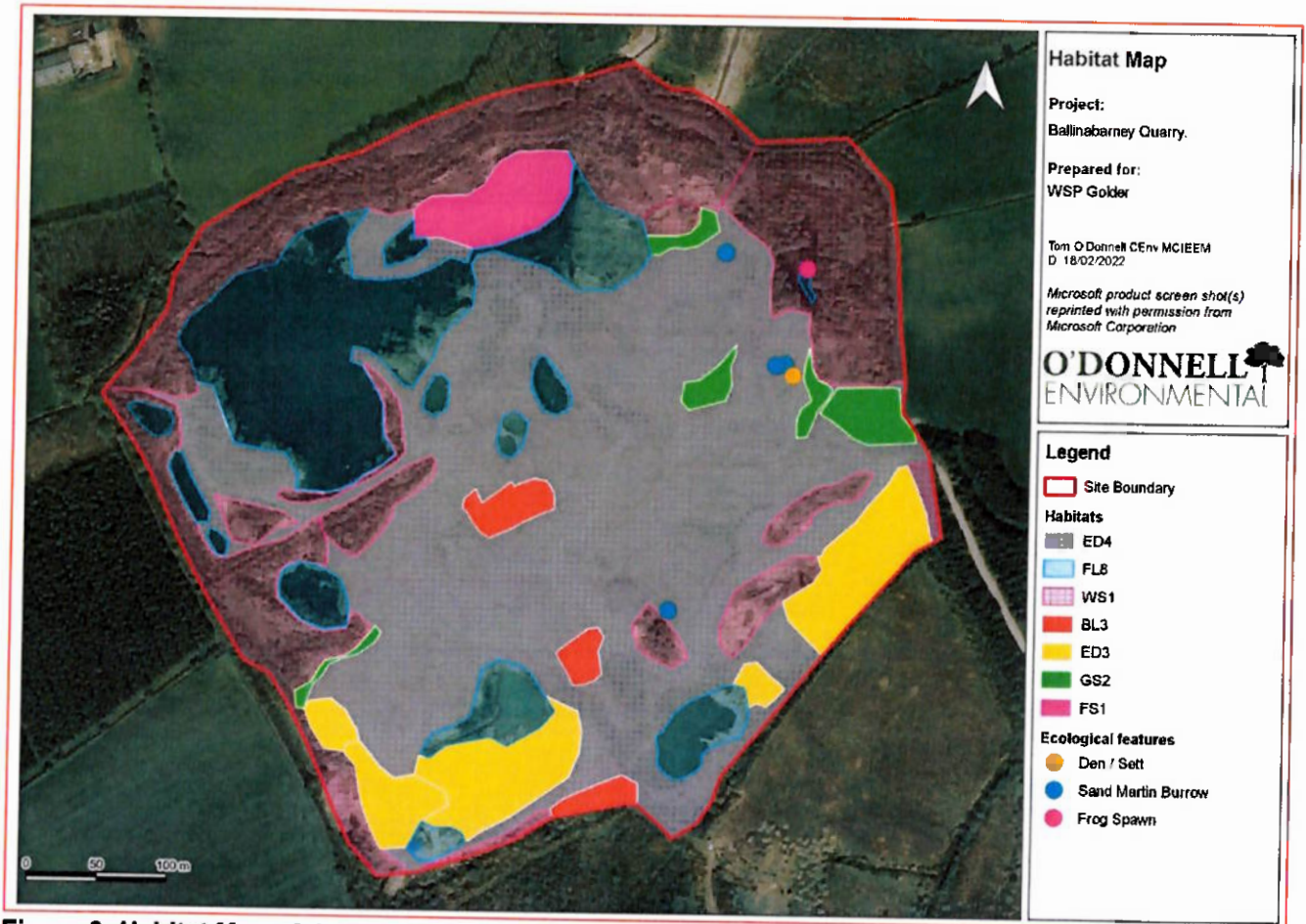


Figure 3: Habitat Map of the Site - O'Donnell Environmental (2022).

Fauna

The primary considerations for all protected and notable species at the Site are based upon the availability of suitable habitat to support the species between 1990 and 2022. In all cases the likelihood of presence or indeed absence was addressed in congruence with an assessment of habitat availability to maintain a species at a favourable conservation status at the Site level. Where doubt over presence was perceived owing to the retrospective nature of the assessment a conservative prediction was made in favour of likely presence.

3.1.2 Aquatic Habitats and Receptors

The assessment considered the potential for hydrological connectivity between the Site and surface water features, and also considered what effects could be afforded to aquatic fauna and habitat receptors.

There are no water courses running through the Site. Ordnance Survey maps show that the nearest stream (Newbawn Stream) lies to the east and north of the Site boundary. Areas of open pooled water are noted on the quarry floor and much of this aquatic habitat has become semi-natural and supports waterfowl such as

mallard. Some elements of Site and stream connectivity are known to occur through discharge. As such, it is important to understand the quality of these discharges to address potential effects.

Local Surface Water Features

The Site is located within the Ovoca-Vartry catchment which forms part of the Easter River Basin District. The river network in the area surrounding the Site is shown in Figure 4.

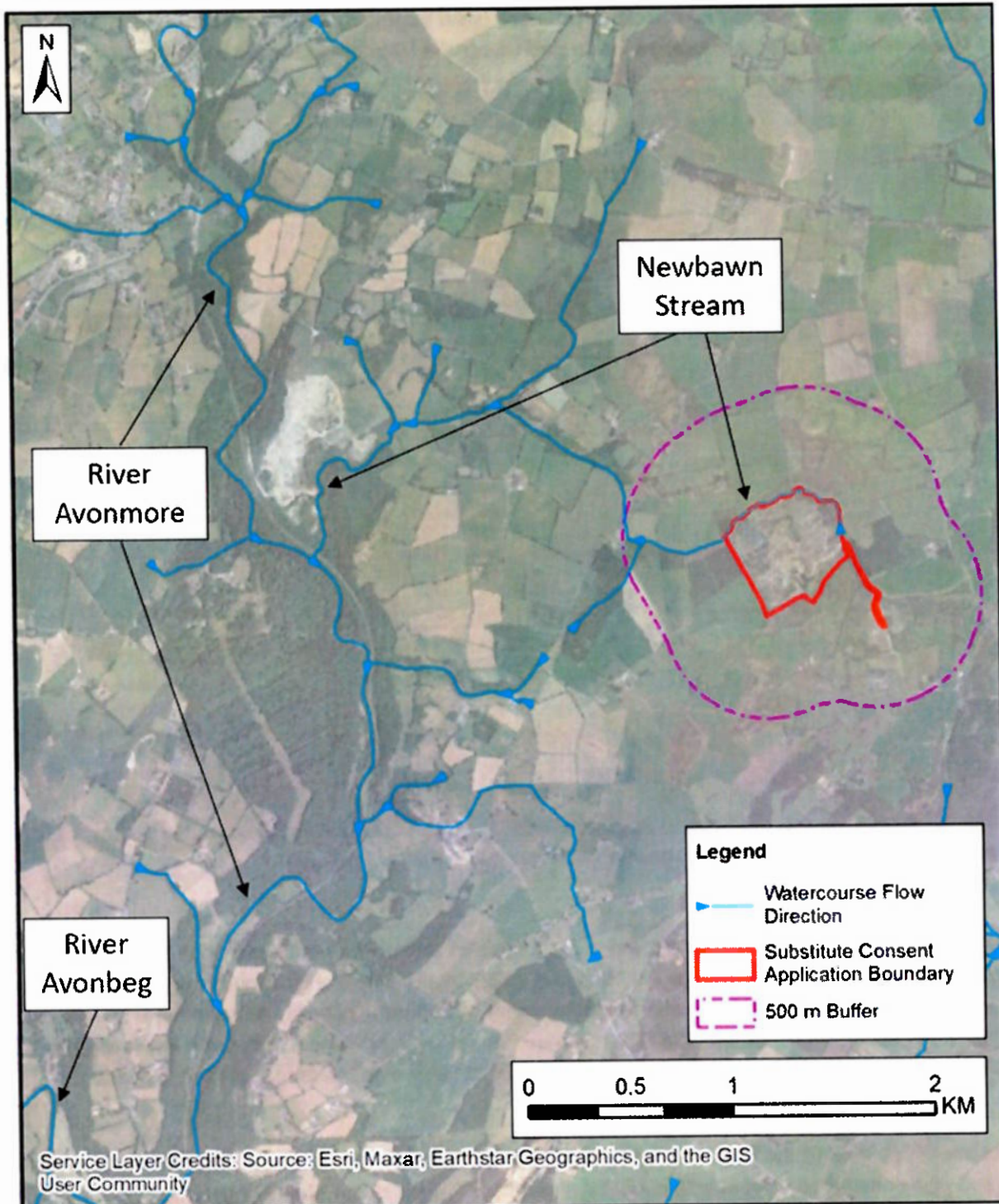


Figure 4: Local River Network and Flow Directions in the Vicinity of the Site (after GSI, 2022)

The Newbawn runs along the eastern and northern boundary of the Site. The Newbawn flows westwards ca. 3.75 km until it joins the River Avonmore. The Avonmore then flows ca. 3.5 km directly south where it joins the Avonbeg, forming the Avoca which flows ca. 15 km southeast until reaching the Irish Sea.

Prior to reaching the Avonmore, the Newbawn is fed by the north-easterly flowing Timullin tributary located ca. 0.5 km from the Site. It is later fed by the southerly flowing Cunniamstown Little, Balleese Upper and Mountlusk tributaries, located ca. 0.5, 1.45, 1.9 and 2 km respectively from the Site.

The results of the surface water quality analysis at the Site are presented in Chapter 6 (Water) of the remedial EIAR, Appendix 6.2 and compared with the Environmental Quality Standards (EQS) for inland surface waters, as outlined in the European Communities Environmental Objectives (Surface Water) Regulations S.I. No.272/2009 including amendment S.I. No.386/2015 and, European Communities (Quality of Salmonid Waters) Regulations 1988 (SI 293 of 1988)².

The maximum allowable concentration (MAC) for inland water EQS values have been applied as more than two samples would be required to establish an average (AA) concentration for comparison against the AA EQS values. Where a screening value does not exist the UK EQS were applied (Freshwaters specific pollutants and operational EQS and Freshwaters priority hazardous substances, priority substances and other pollutants³). Full screening results are presented as Appendix 6.2 of the rEIAR. The laboratory certificates for the results are included in Appendix 6.3 of the rEIAR.

Surface water is generally shown to be of good quality from 2020 – 20221 with only a few exceedances of the standard values during the 2020 and 20212 monitoring period. Orthophosphate, copper and hydrocarbons were all observed to be less than the limit of detection in the 2020-2022 surface water samples, showing an improvement on the previous monitoring in 2008 and 2016.

Exceedances of the European Communities (Quality of Salmonid Waters) Regulations 1988 in the surface water quality from 2022 were recorded on 08/07/2022 for nitrite (threshold value 0.05 mg/l) in surface monitoring points SW1A (0.07 mg/l) and SW3 (0.07 mg/l) and for total suspended solids (threshold value 25 mg/l) in SW1A (36 mg/l) and SW2 (29 mg/l). In addition to the above exceedances, it should be noted that the limit of detection for dissolved mercury (0.1 µg/l) exceeds the MAC EQS of 0.07 µg/l, however dissolved mercury was found to be less than the limit of detection in all of the samples.

Nitrite in the Newbawn stream is considered unlikely to derive from activities at the Site, but rather from off-site agricultural activities. Similarly, given the lack of earthworks activity in the vicinity of SW1A and SW2 during July 2022 (working areas were located in the east and southern areas of the site at the time of sampling), the source of the suspended solids is thought to be derived from off-site sources.

It is noted that the stretch of the Newbawn stream located adjacent to the Site boundary is located relatively close to the source of the watercourse and therefore has a relatively small catchment area for runoff and baseflow contribution. This stretch of the stream may be susceptible to elevated concentrations during times of lower summer (dry season) flows due to a lower dilution potential. The stretch of the Newbawn stream which is reported (An Bord Pleanála, 2015) to host salmon and trout populations is located approximately 2 km downstream of the site boundary (see Section 6.4.7) and therefore is likely to receive significant additional runoff and baseflow (i.e. potential for dilution) from larger catchment areas downstream of the Site. Marginal

² Provided for comparative purposes only. The site-adjacent Newbawn stream and downstream Avonmore and Avoca rivers are not classed as salmonid waters within S.I. No. 293/1988. The closest salmonid waters identified within the regulations are the Rivers Slaney and Vartry, both of which are not in hydraulic connectivity with the site.

³ www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit#screening-tests-freshwaters, accessed in April 2022, last updated in February 2022.

exceedances of the salmonid water criteria (SI 293 of 1988) in these upstream locations are therefore unlikely to cause significant degradation of water quality in the downstream watercourse.

Five locations were analysed for microbiological parameters in July 2022. *Clostridium perfringens*, coliforms, *Escherichia coli*, Enterococci, coliforms, TVC at 22°C and TVC at 37°C were all present in both upstream and downstream locations. Notably, concentrations of the microbiological parameters were lower in SW10 (located approximately 250 m upgradient of the Site boundary) when compared to the other locations. However, higher biological elements concentrations of microbiological parameters were also recorded in SW4 than in SW10, a location also considered upgradient of site. The high concentrations of microbiological parameters are again likely attributable to nearby agricultural activities rather than on-site activities.

Groundwater

The superficial deposits (alluvium, Lower Palaeozoic derived gravels and lacustrine sediments) in the vicinity of the Site are not designated as an aquifer by the GSI, with the closest gravel aquifer located ca. 4.5 km to the south-west (GSI, 2022).

The GSI aquifer designation (GSI, 2022) for bedrock underlying the Site is shown in Figure 5. Bedrock underlying the footprint of the Site (Kilmacrea Formation) falls within the catchment of the Wicklow groundwater body which is defined as 'good' water quality under the WFD and has a designation of 'PP' or 'poorly productive bedrock' (GSI, 2022). The aquifer underlying the Site is categorised as 'LI' or 'Locally Important Aquifer', described by the GSI (GSI, 2017) as:

- A limited and relatively poorly connected network of fractures, fissures and joints, giving a low fissure permeability which tends to decrease further with depth.
- A shallow zone of higher permeability may exist within the top few metres of more fractured/weathered rock, and higher permeability may also occur along fault zones.
- These zones may be able to provide larger 'locally important' supplies of water. In general, the lack of connection between the limited fissures results in relatively poor aquifer storage and flow paths that may only extend a few hundred metres.
- Due to the low permeability and poor storage capacity, the aquifer has a low 'recharge acceptance'.
- Some recharge in the upper, more fractured/weathered zone is likely to flow along the relatively short flow paths and rapidly discharge to streams, small springs and seeps.
- Groundwater discharge to streams ('baseflow') can significantly decrease in the drier summer months.

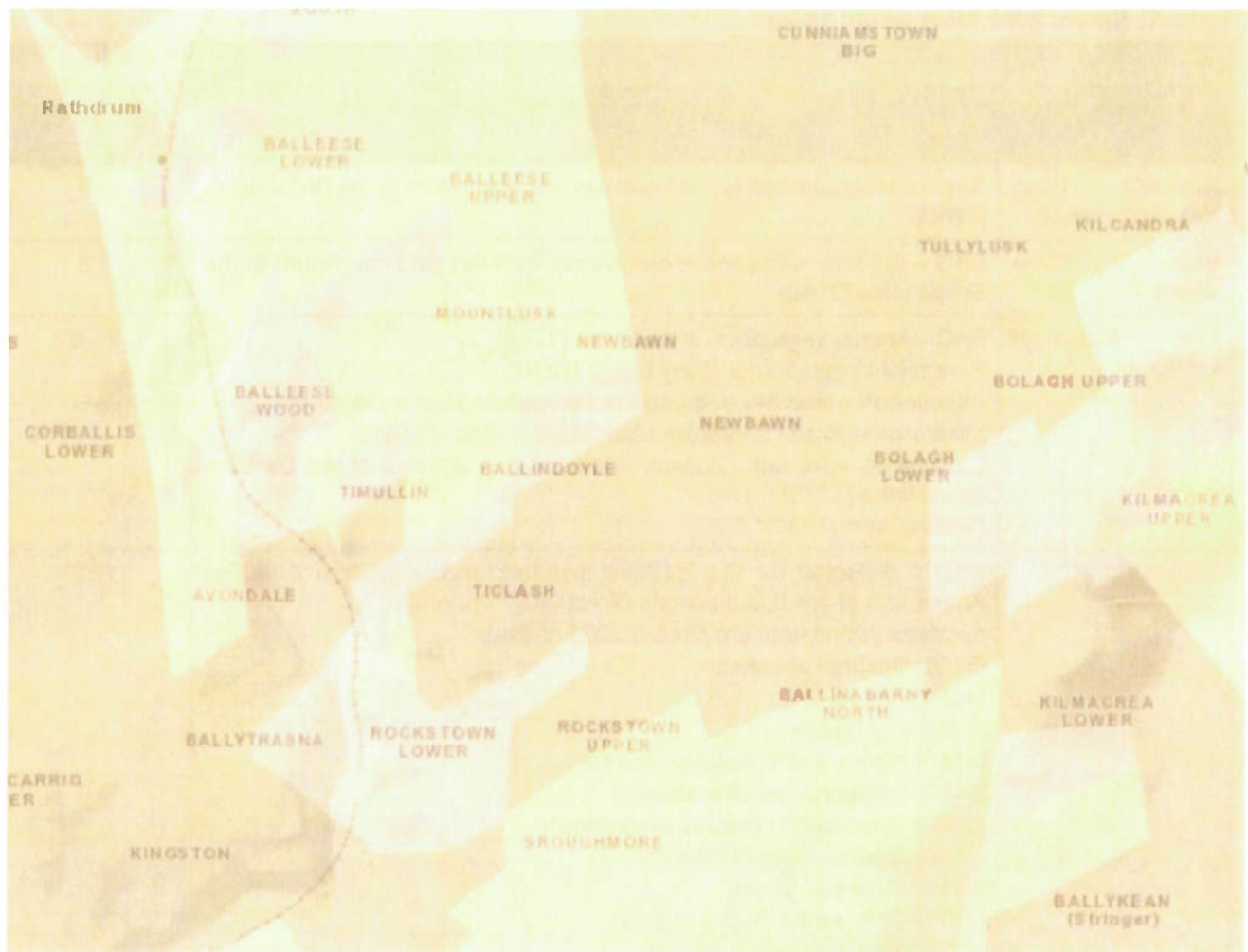


Figure 5: GSI Bedrock Aquifer Designations (after GSI, 2022)

Bedrock of the Avoca Formation is located ca. 0.5 km south and 1.1 km northwest of the Site and is classified as a 'Pu' poor aquifer, which is described as generally unproductive.

Diorite bedrock located ca. 0.5 km east and 1.5 km west of the Site is classified as a 'Pi' poor aquifer, which is described as generally unproductive except for local zones.

Bedrock of the Oaklands Formation ca. 1 km north and 3.6 km southwest of the Site is classified as 'Li' locally important aquifer, which is described as moderately productive only in local zones.

The Site is interpreted to be in hydraulic connectivity with the aquifers of the Avoca, Oaklands and Diorite Formations.

3.2 Natura 2000 Sites

Sites of international importance, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are collectively known as Natura 2000 sites. These sites contain examples of some of the most important natural and semi-natural ecosystems in Europe. The designated search area was 15 km from the Site for Natura 2000 sites (Table 1 and Figure 6 below). A total of eleven SAC and SPA were recorded within the search area and those that may be ecologically relevant are presented in Table 1.

Table 1: Natura 2000 Sites within 15 km.

Natura 2000 Site	SAC/SPA (Key Qualifying Features)	Approximate Distance to Site (KM)
Deputy's Pass Nature Reserve.	SAC - Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	3.6
Vale of Clara Wood	SAC – 3.8 km. Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	3.8
The Murrough Wetlands	SAC - Annual vegetation of drift lines [1210] Perennial vegetation of stony banks [1220] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] Alkaline fens [7230]	11.8
Wicklow Mountains	SAC – 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): [3160] Dystrophic Lakes; [4010] Wet Heath; [4030] Dry Heath; [4060] Alpine and Subalpine Heaths; [6130] Calaminarian Grassland; [6230] Species-rich <i>Nardus</i> Grassland*; [7130] Blanket Bogs (Active)*; [8110] Siliceous Scree; [8210] Calcareous Rocky Slopes; [8220] Siliceous Rocky Slopes; [91A0] Old Oak Woodlands; and [1355] Otter (<i>Lutra lutra</i>).	12.2
Wicklow Mountains	SPA – The site is designated under the E.U. Birds Directive, of special conservation interest for the following species: Merlin and Peregrine.	12.2

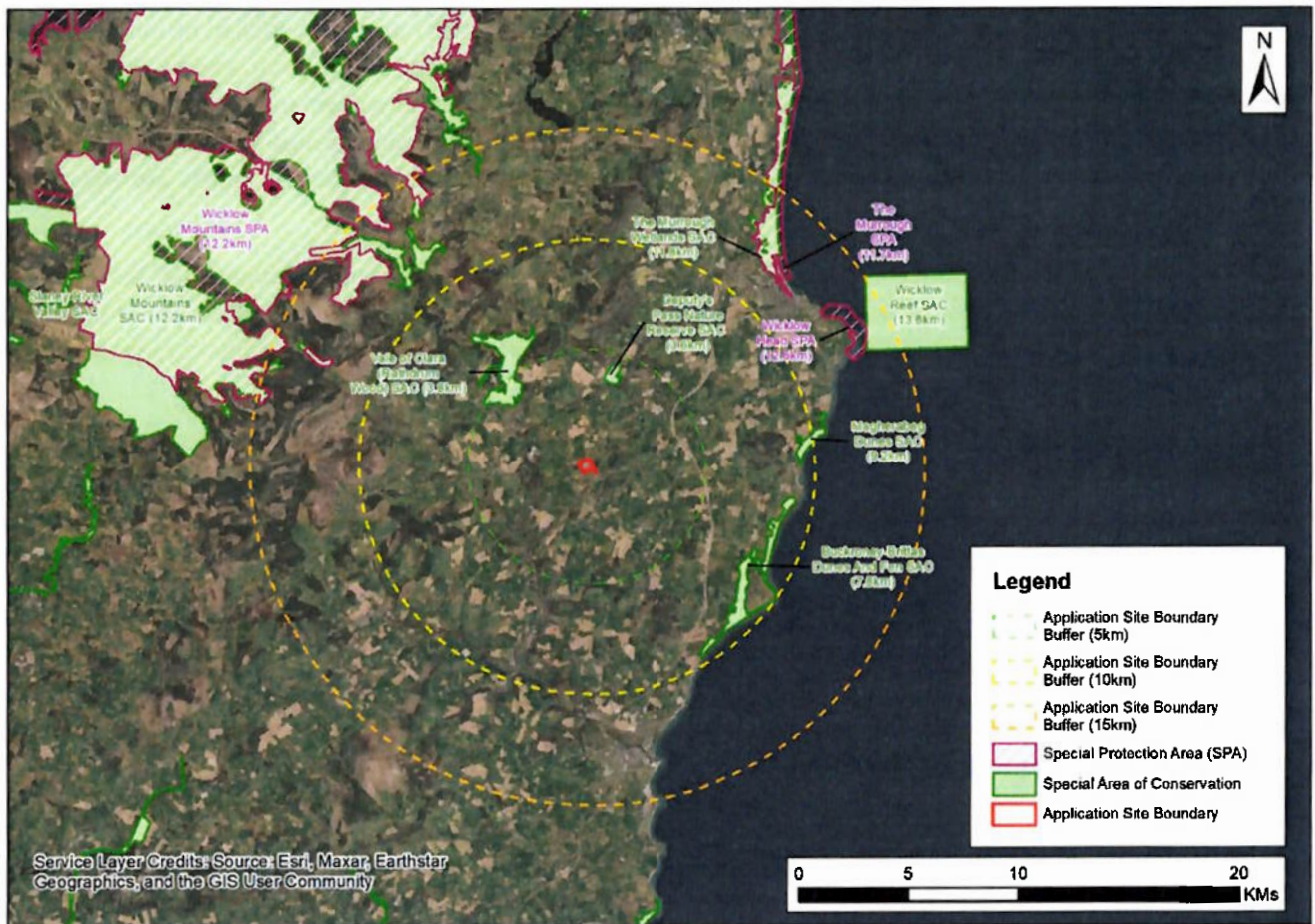


Figure 6: Natura 2000 Sites within 15 km of the Site.

3.3 rNIS and Screening Assessment

Throughout this assessment it is important to reiterate the key focus points required. In essence, have quarrying activities at the Site between 1990 and the present day created the potential or indeed actual degradation (likely significant effect) of Natura 2000 sites and associated qualifying species? The following sections serve to further evaluate this question.

3.3.1 Water

Quarrying works have minimal potential to adversely affect surface and groundwater quality as indicated in the accompanying Water chapter (Chapter 6). As previously stated, there are minimal discharges to watercourses that would lead to a measurable adverse contribution. The results of the surface water quality analysis at the Site are presented in Chapter 6 (Water) Appendix 6.2 and compared with the Environmental Quality Standards (EQS) for inland surface waters, as outlined in the European Communities Environmental Objectives (Surface Water) Regulations S.I. No.272/2009 including amendment S.I. No.386/2015 and, European Communities (Quality of Salmonid Waters) Regulations 1988 (SI 293 of 1988)⁴.

⁴ Provided for comparative purposes only. The site is adjacent Newbawn stream and downstream Avonmore and Avoca rivers which are not classed as salmonid waters within S.I. No. 293/1988. The closest salmonid waters identified within the regulations are the Rivers Slaney and Vartry, both of which are not in hydraulic connectivity with the site.

The maximum allowable concentration (MAC) for inland water EQS values have been applied as more than two samples would be required to establish an average (AA) concentration for comparison against the AA EQS values. Where a screening value does not exist the UK EQS were applied (Freshwaters specific pollutants and operational EQS and Freshwaters priority hazardous substances, priority substances and other pollutants⁵). Full screening results are presented as Appendix 6.2. The laboratory certificates for the results are included in Appendix 6.3.

Surface water is generally shown to be of good quality from 2020 – 2021 with no exceedances of the standard values during the 2020 and 2021 monitoring period. It should be noted that the limit of detection for dissolved mercury (0.1 µg/l) exceeds the MAC EQS of 0.07 µg/l, however dissolved mercury was found to be less than the limit of detection in all of the samples.

Orthophosphate, copper and hydrocarbons were all observed to be less than the limit of detection in the 2020-2021 surface water samples, showing an improvement on the previous monitoring in 2008 and 2016. Total suspended solids were also reported below the limit of detection at all sampling points with the exception of downgradient location SW3 on 09/09/2020 with a concentration of 16 mg/l, which is below the Salmonid Water Regulations.

The main potential polluting impact associated with the Site and the historic and current activities is the introduction of hydrocarbons to the underlying groundwater. Given the embedded design parameters (plant and machinery maintenance that has occurred historically) and absence of bedrock/groundwater pathways it is considered very unlikely that hydrocarbon pollution will occur or has occurred at the Site and the risk of pollution to surrounding groundwater environment is deemed to be very low.

Given the above, in a worst case scenario an item of machinery associated with the historic operation of the Site could have leaked hydraulic fluid or hydrocarbon. In this instance the spill would have been contained at the scene and collected if possible. Residual spill would have been contained within the Site subject to dilution and evaporation over an extended period of time and pollutants would have been contained at the Site scale. As such, no risks would have been afforded to Natura 2000 habitat or species as defined by the source pathway model of likelihood.

Air Quality – Dust

Dust deposition is the predominant risk which may arise from historic and current activities arising from soil/aggregate movement and dust mobilised from vehicle movements. However, given the embedded design parameters dust deposition and residual effects to Natura 2000 habitat or species are considered highly unlikely. The nearest SACs are over 3.5 km from the Site. Advice provided within the Design Manual for Roads and Bridges (DMRB)⁶ suggests that the most sensitive species appear to be affected by dust deposition at distances > 200m from the source⁴. Accordingly, given the low risk of dust mobilisation on Site, embedded design parameters and distance to the nearest Natura 2000 site it is considered unlikely that dust deposition will have had an impact on any nearby Natura 2000 designations.

⁵ www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit#screening-tests-freshwaters, accessed in April 2022, last updated in February 2022.

⁶ The Highways Agency, Transport Scotland, Welsh Assembly Government & The Department for Regional Development Northern Ireland Design Manual for Roads and Bridges Air Quality

Noise

Of the Natura 2000 designations in the search area, it is considered that the SPAs would be sensitive to noise disturbance, given that they are designated on the basis of supporting bird species. Activities within Site which may contribute to increased noise levels include traffic movements and quarrying activities including periodic blasting. The closest SPAs to the Site are the Wicklow Mountains and Head sites situated > 12 km. Given the distance of the SPAs from the Site, it is considered that over this distance the noise levels within the Site would have had a negligible impact on the SPAs.

4.0 STAGE 1 SCREENING ASSESSMENT CRITERIA

4.1 Describe any likely direct, indirect or secondary impacts of the Project (either alone or in combination with other plans or projects) on the Natura 2000 sites by virtue of:

Size and Scale	None – the size and scale of the Natura 2000 sites has not been and will not be affected.
Land-take	None from Natura 2000 sites and no further land take is required from the Site as the quarry is already in place.
Distance from Natura 2000 site or key features of the site	<ul style="list-style-type: none"> ■ Deputy's Pass Nature Reserve SAC 3.6; ■ Vale of Clara Wood SAC 3.8; ■ The Murrough Wetlands SAC 11.8 ■ Wicklow Mountains SAC 12.2 km; and ■ Wicklow Mountains SPA 12.2 km.
Resource requirements (water abstraction etc.)	No resources from a Natura site are required or have been required.
Emissions (disposal to land, water or air)	There are no emissions to water that could have affected Natura 2000 sites and Salmonid waters. Air emissions from the Site (historic use of plant and machinery at the Site) are unlikely to cause/have caused impacts on the Natura 2000 sites due to the absence of ecological pathways and negligible emissions.
Excavation requirements	There are and have been no excavation requirements within the Natura 2000 sites or those that could affect Natura 2000 sites through source pathway modelling.
Transportation requirements	Transportation of goods to and from Site will not affect / would not have affected Natura 2000 sites in a way that would be measurable.
Duration of construction, operation, decommissioning etc.	This assessment has considered potential effects from 1990 to the present day. As such, this process has not considered the nature of future operations.
Other	None.

4.2 Describe any likely changes to the site arising as a result of:

Reduction of habitat area	None to Natura 2000 sites.
Disturbance to key species	Disturbance to key species is not / has not been possible owing to the distance between the Site and Natura 2000 sites including the absence of ecological pathways or synergies.
Habitat or species fragmentation	There has been no habitat or species fragmentation due to the operations at the Site. The Site is not part of the Natura 2000 sites in question and no resources are / have been required from them. Designated habitats and species of the SACs/SPAs will not be / have not been directly or indirectly impacted given their distance from the Site.
Reduction in species density	No historic or current reduction in species density is assessed as having occurred.
Changes in key indicators of conservation value (water quality etc.)	None.
Climate change	No measurable contribution.

4.3 Describe any likely impacts on the Natura 2000 sites as a whole in terms of:

Interference with the key relationships that define the structure of the site:	No impacts are likely to have been afforded.
Interference with key relationships that define the function of the site	No impacts are likely to have been afforded.

4.4 Provide indicators of significance as a result of the identification of effects set out above in terms of:

Loss (Estimated percentage of lost area of habitat)	There has been no habitat loss.
Fragmentation	There has been no habitat fragmentation.
Disruption and disturbance	Previous and current disturbance and disruption to species is considered unlikely. Species for which the Natura 2000 sites have been designated are highly unlikely to utilise the Site or be influenced by the Site due to distance and / or a lack of environmental connectivity between the sites.

Loss (Estimated percentage of lost area of habitat)	There has been no habitat loss.
Change to key elements of the site (e.g. water quality etc.)	None. The Project has not resulted in any measurable adverse effects on surface and groundwater quality, availability, flow or distribution.

4.5 Cumulative Impact

Cumulative impacts are defined as impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project (European Communities, 1999). A review of the relevant County Council planning website was undertaken for details of other developments in the area which may have led to cumulative impacts potentially arising. Proposed developments identified were mainly for dwelling or extension/alterations to dwellings and light industrial infrastructure development and also the nearby C&D waste recycling facility to the southeast (upstream) of the Site. All emissions from the recycling facility were within the thresholds set out in the permit conditions. As such, it is considered that no cumulative impacts have arisen from current and historical features and activities associated with the Project.

4.6 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

As described within this rNIS, it is considered certain that the historic and current operation of the Site has not had a likely significant effect on the Natura 2000 sites pertinent to this Assessment. There is a high level of confidence in the likely degree of the magnitude of impacts in accordance with the Site and as such it is concluded objectively that significant effects have not been afforded.

The following key considerations contributed towards this conclusion:

- The Site’s operation has occurred as a nearly closed loop system regarding discharges with no aquatic or terrestrial connectivity with Natura 2000 receptors as defined within this report and water quality remaining compliant with the Salmonid regulations.
- Site water has no hydrological connectivity with Natura 2000 sites.
- There is sufficient distance between the Site and all Natura sites that the Site has not caused disturbance / displacement of those species that form the part of the qualifying interests of the Natura 2000 designation.
-

5.0 DATA COLLECTED TO CARRY OUT THE ASSESSMENT

The assessment was carried out by:

Freddy Brookes MSc., MCIEEM – Senior Ecologist Golder Associates.

Sources of Data:

Existing information from NPWS, GSI, and EPA.

Level of assessment completed:

Desktop study Screening report and rNIS.

6.0 REFERENCES

- Balmer D.E., Gillings S., Caffrey B.J., Swann R.L., Downie I.S., Fuller R.J. 2013. Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford, UK.
- Environmental Protection Agency (EPA), 2021. www.epa.ie/water/wm/groundwater/ (Accessed: March 2022).
- European Communities (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
- Fossitt, J.A. (2000). *A guide to habitats in Ireland*. The Heritage Council.
- Joint Nature Conservation Committee (2004). *Handbook for Phase 1 habitat survey – a technique for environmental audit*. Peterborough.
- National Roads Authority (2006). Guidelines for Assessment of Ecological Impacts of National Roads Schemes.

Signature Page

WSP Ireland Consulting Ltd



Freddy Brookes
Senior Ecologist



Ruth Treacy
Technical Director

Date: 14 June 2022

FB/RT/ab

Registered in Ireland
Registration No.302231
At Trinity House, Charleston Road, Ranelagh, Dublin 6 D06C8X4, Ireland
VAT No. 6322231R

WSP) GOLDER

golder.com

(

(

(

(