

APPROPRIATE ASSESSMENT SCREENING AND NATURA IMPACT STATEMENT

**Proposed Quarry Extension
(Previously permitted under P. Ref. 12/101)**

AN BORD PLEANÁLA Mullymagowan Townland, Stradone, Co. Cavan

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BASIS OF REPORT

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1.0 INTRODUCTION

SLR Consulting Ireland (SLR) was commissioned by P&S Civil Works Ltd. to prepare an Appropriate Assessment (AA) screening report and Natura Impact Statement (NIS) in support of a planning application to Cavan County Council by P&S Civil Works Ltd., in respect of their proposed quarry extension (referred to hereafter as "the Project") at Mullymagowan townland, Stradone, Co. Cavan (referred to hereafter as "the Site").

1.1. Background

This AA Screening report and Natura Impact Statement (NIS) has been prepared in support of the planning application for the Project which includes:

- Quarry extension development for rock extraction and associated processing over an area of c. 4 hectares within an overall planning application area of c. 4.9 hectares as previously permitted under P. Ref. 12/101 (P. Ref. 17/383) and never commenced;
- A time period of 15 years is being sought to allow the previously permitted extraction be completed plus 2 years to complete restoration works (total duration sought 17 years);
- The development proposed seeks to utilise existing ancillary buildings and facilities including weighbridge, wheelwash, portacabin office/canteen/toilet, waste water treatment system, processing plant, site entrance and all other associated site works, and ancillary activities as currently permitted by P. Ref. 07/827; and
- Final restoration of the worked out quarry to a permanent water body and naturally regenerated wildlife habitat area.

1.2. General Description of the Site

The overall landholding of the applicant (which comprises the existing quarry) straddles the three townlands of Mullymagowan, Drummuck and Tirlahode Lower. The application site itself is centred at approximate Irish Transverse Mercator (ITM) 652679 X 799890 Y and is located fully within the townland of Mullymagowan, being c. 4.5km south of Stradone village and c. 10km southeast of Cavan town.

The general area is rural and agricultural in nature and characterised by a gently undulating topography associated with the indigenous drumlin landscape. Views in the area are generally enclosed by a series of low-lying hills, hedgerows and trees. Coniferous woodland features are also dispersed in the landscape. There are a number of minor worked gravel pits in the wider area. There is an active hard rock quarry in operation at Lavey, c. 1.4km southwest of the application site on the opposite side of the N3 road. The location of the application site is presented in **Figure 1**.

1.3. Purpose of the Report

The purpose of this report is to provide supporting information to assist the competent authority, in this case Cavan County Council, to carry out an Appropriate Assessment screening and, if deemed necessary, an appropriate assessment for adverse effects on the integrity of Natura 2000 sites resulting from the proposed quarry extension.

1.4. Evidence of Technical Competence and Experience

SLR Graduate Ecologist Brogan Costello prepared this report and SLR Associate Ecologist Michael Bailey carried out the technical review of this report.

Brogan holds a BSc. in (Botany) from the National University of Galway and an MSc. in Global Change, Ecosystem Science and Policy from the University College Dublin. She has recently joined SLR having previously completed traineeships with the European Commission and Galway County Council.

Michael Bailey holds a BSc. in Biology and Ecology from the University of Ulster and an MSc. in Quantitative Conservation Biology from the University of the Witwatersrand in Johannesburg. He has extensive experience in ecological studies and assessments across a range of sectors in Ireland and of agricultural, mining and renewable energy projects across Africa. He is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM)

1.5. Relevant Legislation

1.5.1. European Nature Directives (Habitats and Birds)

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) forms the basis for the designation of Special Areas of Conservation (SAC). Similarly, Special Protection Areas (SPA) are classified under the Birds Directive (Council Directive 2009/147/EEC on the Conservation of Wild Birds). Collectively, SACs and SPAs are referred to as the Natura 2000 network. The Natura 2000 Network is the minimum required to conserve certain habitats and species which are listed in the Directives.

Under Article 6(3) of the Habitats Directive, an Appropriate Assessment (AA) must be undertaken for any plan or project that is not directly connected with or necessary to the management of a Natura 2000 site but is likely to have a significant effect thereon, either individually or in combination with other plans or projects. An AA is an evaluation of the potential impacts of a plan or project on the conservation objectives of a Natura 2000 site, and the identification, where necessary, of mitigation or avoidance measures to preclude adverse effects on the integrity of the site.

Article 6, paragraph 3 of the European Commission Habitats Directive 92/43/EEC ("the Habitats Directive") states that:

"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".

1.5.2. European Communities (Birds and Natural Habitats) Regulations 2011

Pursuant to the Habitats Directive, Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, similarly sets out the requirements for screening assessments and the circumstances under which an AA is required.

Regulation 42(1) requires that 'a screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.' Regulation 42(2) expands on this, stipulating that a public authority must carry out a screening for AA before consent for a plan or project is given, or a decision to undertake or adopt a plan or project is taken.

Regulation 42(6) requires that 'the public authority shall determine that an Appropriate Assessment of a plan or project is required where the plan or project is not directly connected with or necessary to the management of

the site as a European Site and if it cannot be excluded, on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site'.

Regulation 42(3)(a) gives the public authority the power to direct a third party to provide a Natura Impact Statement (NIS) and Regulation 42(3)(b) allows it to request any additional information that it needs to complete the screening assessment or AA. Regulation 42(5) goes on to make clear that the NIS should include such information as the public authority considers necessary to enable it to undertake the AA and to ascertain if a project or plan will affect the integrity of a Natura 2000 site. In addition to the information, Regulation 2(1) provides a definition of a Natura Impact Statement as *'a report comprising the scientific examination of a plan or project and the relevant European Site or European Sites, to identify and characterise any possible implications of the plan or project individually or in combination with other plans or projects in view of the conservation objectives of the site or sites, and any further information including, but not limited to, any plans, maps or drawings, scientific information or data required to enable the carrying out of an appropriate assessment'.*

Regulation 42(11) makes clear that the AA must be carried out by the public authority and that it must include its conclusion as to whether the project or plan would adversely affect the integrity of a Natura 2000 site, and that this must be done prior to consenting the project.

1.5.3. Planning and Development Act 2000 (as amended)

These processes have been further enshrined in the Planning and Development Act 2000 (as amended), in sections 177T, 177U and 177V, which are as follows:

s177T(1)(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites.

177U. — (1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

177V. — (1) An appropriate assessment carried out under this Part shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft Land use plan or proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority, in each case where it has made a determination under section 177U(4) that an appropriate assessment is required, before — ... (b) consent is given for the proposed development.

2.0 METHODOLOGY

2.1. General Approach

The methodology used in this report is based on guidance provided by the National Parks and Wildlife Service (NPWS, 2010), the Office of the Planning Regulator (OPR, 2021) and EC Guidance (EC, 2021) on the application of Article 6 of the Habitats Directive.

The 2021 EC guidance describes a series of stages and steps which should be completed when carrying out the assessment and these are followed here with minor modifications. The assessment applies only to Natura 2000 sites (SPAs and SACs). More specifically, it only applies to the qualifying interest features of such sites i.e. the features which are the reason that the site was designated.

2.2. Stage One: Screening

Stage One is a screening assessment, the purpose of which is to determine whether a plan or project requires more detailed assessment. There are two principal tests.

The first considers whether the plan or project is needed for the management of a European site for the purpose of maintaining or restoring its conservation interest. Any such plans or projects can usually be screened out of further assessment. The second test considers whether the plan or project, without specific mitigation measures, would be likely to have a significant effect on any European Site. This requires consideration of the project on its own and in combination with other plans or projects.

A project can only be screened out of further assessment if it is certain (beyond reasonable scientific doubt and on the basis of the best scientific knowledge) that there would be no significant effects on any Natura 2000 site without mitigation designed specifically to address potential impacts on the qualifying interest of such sites. Significant effects in this assessment are those which could undermine the conservation objectives of a qualifying interest feature. The process is used to determine which Natura 2000 Sites should be included in the later stages of the assessment. It can also be used to determine which qualifying interest features require further assessment.

Identifying ecological connectivity with SACs and SPAs and therefore, the zone of influence, requires knowledge of which SCI species are present at the Site and whether they are likely to form part of a population from a nearby site. In the absence of any specific European or Irish guidance in relation to SPAs, the NatureScot Guidance on Assessing Connectivity with SPAs (SNH, 2016) was consulted. This document provides guidance in relation to the identification of ecological connectivity between proposed development sites and SPAs. The guidance takes into consideration the distances certain species may travel beyond the boundary of relevant SPAs and provides information on core and maximum dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects in Scotland. The guidance is also relevant to Ireland for species that are also present in Ireland. The distances for core and maximum dispersal and foraging ranges are drawn from a literature review that examined ranging behaviour across a variety of locations in Britain, Ireland and beyond, not just in Scotland (Pendlebury *et al.* 2011).

2.3. Stage Two: Appropriate Assessment

Stage Two is a more detailed assessment, known as an "Appropriate Assessment" due to the terminology in the legislation. This essentially repeats the second test of the screening assessment but in more detail and considering mitigation measures before reaching a conclusion. At this stage, the test is whether the project or plan will have an adverse effect on the integrity of any European site. This must be done in the light of the conservation objectives for each of the sites and qualifying interest features that have been 'screened in' by the

earlier stage of assessment. Any effect which could undermine the conservation objectives is considered an adverse effect on the integrity of the site, and vice versa. If the project is predicted to lead to adverse effects upon the integrity of the site, further stages of assessment are required before the project can be authorised.

DoEHLG (2010) guidance for planning authorities states *"If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). Screening should be undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact."* This approach is adopted in this report when considering likely significant effects (LSE's) of the project.

Likely significant effects (LSE's) of the project are also assessed in combination with other plans and projects for cumulative effects. Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

Other plans and projects that should be considered when establishing cumulative effects are:

- proposals for which consent has been applied but which are awaiting determination;
- projects which have been granted consent, but which have not yet been started or which have been started but are not yet completed (i.e., under construction);
- proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;
- constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
- developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

2.4. Sources of Information

Sources of information for the assessment of the Project 'alone' include:

- Article 17 and Article 12 reports completed by the National Parks and Wildlife Service¹;
- Site Synopses, Conservation Objectives and Standard Data Forms for the Natura 2000 sites²;
- Environmental Protection Agency (EPA) Maps³.
- Relevant chapters of the EIAR for the project.

Sources of information for the plans and projects for the 'in combination' assessment were as above and also include:

- Cavan County Development Plans 2022 – 2028⁴ (effective as of July 2022)

¹ <https://www.npws.ie/publications/article-17-reports?msclid=0c19d260b00a11ecaf5a935da63f219b> (last accessed 04 October 2022)

² <https://www.npws.ie/protected-sites> (last accessed 04 October 2022)

³ <http://gis.epa.ie/> (last accessed 04 October 2022)

⁴ [Cavan County Development Plan, incorporating a Local Area Plan for Cavan Town 2022-2028 - Cavan County Council \(cavancoco.ie\)](#) (last accessed 04 October 2022)

- Cavan County Council planning portal⁵ and myplan.ie⁶ were accessed for information on other projects and plans.

⁵Online Planning Search - Cavan County Council (cavancoco.ie) (last accessed 04 October 2022)

⁶<https://myplan.ie/> (last accessed 04 October 2022)

3.0 STAGE 1: SCREENING

3.1. Step 1 – Part 1: Management of Natura 2000 Sites

The Site is not located within or adjacent to any designated Natura 2000 conservation site. The Site is not connected to or necessary for the management of a Natura 2000 site.

3.2. Step 2 - Part 1: Project Description

It is proposed to continue the use of the existing quarry, processing plant and associated facilities to allow the previously permitted extraction works to be completed. The proposed development being applied for under this planning application is:

- Quarry extension development for rock extraction and associated processing over an area of c. 4 hectares within an overall planning application area of c. 4.9 hectares as previously permitted under P. Ref. 12/101 (P. Ref. 17/383) and never commenced;
- A time period of 15 years is being sought to allow the previously permitted extraction be completed plus 2 years to complete restoration works (total duration sought 17 years);
- The development proposed seeks to utilise existing ancillary buildings and facilities including weighbridge, wheelwash, portacabin office/canteen/toilet, wastewater treatment system, processing plant, site entrance and all other associated site works, and ancillary activities as currently permitted by P. Ref. 07/827; and
- Final restoration of the worked out quarry to a permanent water body and naturally regenerated wildlife habitat area.

As the site is an existing and established operation, there is no requirement for any new site infrastructure or facilities as part of this application.

The current ground elevations across the proposed development area are between c. 140 – 175 mOD. It is proposed that the extraction area will be worked to a depth of c. 110m AOD, which is the previous permitted depth (P. Ref. 12/101). Groundwater in the existing quarry void to the south of the application area rests at c. 163m AOD and it can be expected that groundwater will be encountered at a similar depth within the current application area once extraction commences. As such dewatering of groundwater will be required during extraction operations.

Method of Extraction

It is proposed that the method of rock extraction to be implemented at the site will be as follows:

- topsoil and overburden will be stripped and placed in landscape screening mounds along the boundaries of the proposed quarry extension area in advance of rock drilling and blasting;
- rock material will be extracted using conventional blasting techniques. Prior to drilling, the quarry face will be surveyed in order to ensure safe and efficient blasting. Drilling will be carried out in accordance with the blast design. Finally, the holes will be filled with bulk emulsion explosives and the blast carried out. All blasting will be carried out in accordance with the health & safety regulations, and environmental guidelines for the sector;
- the quarry will be developed using a conventional benching system (steps), with working faces being progressively advanced in a westerly direction.

- the fragmented rock will be loaded from a tracked excavator into rock dump trucks for transport to the existing processing plant via an internal haul route;
- At the processing plant, the material will be broken down through a series of crushing and screening equipment until the specific final products (blinding, clean stone 30mm-70mm, dust, 6mm dust, 6mm chip, 10mm chip, 14mm chip, 18mm chip) are collected in end bins;
- the aggregate products will be temporarily stored in stockpiles located within the central processing area to await use in the onsite concrete plant or dispatch off-site.

Site Drainage

Existing Quarry Area – P. Ref. 07/827

Water from the existing quarry void (when operational) is pumped from a sump on the quarry floor which provides retention, by use of an electric 4" pump on float switches. The water is discharged directly to the surface water drainage channel located to the north of the landholding and running along the eastern boundary of the application site for the quarry extension. The drainage channel flows into the Mullymagowan Stream, which flows north to Corfad Lough (c. 600m north of the quarry extension area), and subsequently the Stradone River.

Application Area – as previously permitted by P. Ref. 12/101

There are two minor surface water features within the proposed extension area consisting of:

- A drainage ditch feature that flows along the southern boundary of the extension area in an easterly direction where it joins the stream that flows along the eastern boundary and into the Mullymagowan Stream ; and
- A drainage ditch feature that flows adjacent to the northern boundary of the extension area and joins the stream that flows along the eastern boundary at the northern-most corner of the extension area.

When extraction operations commence, it is proposed that waters from within the proposed extension area will be diverted to a sump within the quarry floor of the extension area for settlement of any suspended solids and then pumped to a discharge point.

Existing Discharge Licence

The applicant currently holds a discharge licence (Ref. SS/W005/11) from Cavan County Council in relation to discharges from the existing quarry operations (P. Ref. 07/827) and the proposed extension area (previous P. Ref. 12/101).

3.3. Step 2 - Part 2: Potential Impact Factors

The Project has the potential to result in the following impacts:

- Loss of habitats which may be part of and/or support the Qualifying Interests (QIs) or Species of Conservation Interest (SCIs) of Natura 2000 sites;
- Polluted discharge to water bodies which may reduce groundwater quality and negatively affect the QIs or SCIs of Natura 2000 sites near or downstream of the project site;
- Construction and operational phase noise which may disturb some of the QIs or SCIs of Natura 2000 sites;

- Emissions to air (dust) resulting from quarrying activity which could lead the smothering of vegetation and restricting growth and reduce potential foraging sources for some of the QIs or SCIs of Natura 2000 sites.

The habitats and species listed as features of interest of any Natura 2000 sites within the zone of influence of the project must therefore be accessed for effects from loss of habitat, water quality discharge, noise & vibration and dust from the proposed Project, and these effects are considered further below.

3.4. Step 3: Identification of Natura 2000 Sites

The first step in identification of relevant Natura 2000 sites for further assessment is to identify those that will be at risk from likely significant effects where a Source-Pathway-Receptor (S-P-R) links exists between the proposed development and the Natura 2000 site.

The relevant Natura 2000 sites are identified through a review of the nature and scale of the project, the project location relative to Natura 2000 sites, presence of ecological (including mobile and migratory species) and landscape connectivity, such as along waterways, hedgerows and treelines between the Site and the Natura 2000 sites, known impacts and effects likely to arise as a result of this type of project, distance from Natura 2000 sites and the qualifying interests of the Natura 2000 sites.

Table 3.1 provides a list of the Natura 2000 sites which were identified as having potential Source-Pathway-Receptor links which will be assessed as part of the screening process and their locations are shown in Figure 1.

Table 3.1: Natura 2000 Sites with potential Source-Pathway-Receptor links

Natura 2000 Site	[Site Code]	Distance from Project Site ⁷
Lough Oughter and Associated Loughs SAC	000007	14.3 km
Lough Oughter Complex SPA	004049	14.5 km
Lough Sheelin SPA	004065	14.6 km
River Boyne and River Blackwater SAC	002299	19.4 km
River Boyne and River Blackwater SPA	004232	19.4 km

Table 3.2 provides a description of each site and lists their conservation objects and any Source-Pathway-Receptor link.

⁷ When measured in a straight line over the shortest distance between the quarry site and Natura 2000 site.

Table 3.2: Designated Sites within the zone of influence of the project

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
Lough Oughter and Associated Loughs SAC [000007]	14.3km	- Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] - Bog woodland [91D0] <i>Lutra lutra</i> (Otter) [335]	To restore the favourable conservation condition of Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation at Lough Oughter and Associated Loughs SAC and, To maintain the favourable conservation condition of bog woodland habitat and Otter (<i>Lutra lutra</i>) at Lough Oughter and Associated Loughs SAC	"Lough Oughter and its associated loughs occupy much of the lowland drumlin belt in north and central Cavan between Upper Lough Erne, Killeshandra and Cavan town. The site is a maze of waterways, islands, small lakes and peninsulas including some 90 inter-drumlin lakes and 14 basins in the course of the Erne River. The Lough Oughter area contains important examples of two habitats listed on Annex I of the E.U. Habitats Directive and supports a population of the Annex II species, Otter. The site as a whole is the best inland example of a flooded drumlin landscape in Ireland and has many rich and varied biological communities. Nowhere else in the country does such an intimate mixture of land and water occur over a comparable area, and many of the species of wetland plants, some considered quite commonplace in Lough Oughter and its associated loughs, are infrequent elsewhere."	Loss of habitat: No LSE predicted No pathway exists as the project will not result in loss of any habitat within the SAC, nor any habitat of the type for which the SAC is designated. Water quality discharge: Potential for LSE. There is a hydrological link between this SAC and the Project site via the Stradone River. This SAC and the Project site lie within the same ground waterbody, IE_NW_G_061 (Cavan). Without mitigation the water discharge with elevated suspended solids and/or accidental spillages or leaks at the site have the potential to impact on the surface waters and underlying aquifer which, in turn, could impact on the surface water receptors within the SAC. Emissions to air (dust): No LSE predicted There is a pathway (atmospheric) for dust between the project site and this SAC,

⁸ When measured in a straight line over the shortest distance between the asphalt site and Natura 2000 site.

⁹ For SPAs, the bird species that are the reason for designation are Species of Conservation Interest (SCIs) and for SACs the habitats and species that are the reason for designation are its Qualifying Interests (QIs). For convenience, the term qualifying interest or QI is used here for both SPAs and SACs.

¹⁰ Protected Sites in Ireland | National Parks & Wildlife Service (npws.ie)

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
Lough Oughter Complex SPA [004049]	14.5 km	- Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] - Whooper Swan (<i>Cygnus cygnus</i>) [A038] - Wigeon (<i>Anas penelope</i>) [A050] - Wetland and Waterbirds [A999]	To maintain or restore the favourable conservation condition of the wetland habitat at Lough Oughter Complex SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.	"Lough Oughter and its associated loughs occupy much of the lowland drumlin belt in north and central Co. Cavan between Belturbet, Killashandra and Cavan town. This area comprises a maze of waterways, islands, small lakes and peninsulas. Lough Oughter, the largest lake in the site, is relatively shallow (maximum depth of 10 m) and considered to be a naturally eutrophic system. Its main inflowing rivers are the River Erne and the Annalee River, whilst the main outflow is the River Erne, which connects the lake to Upper Lough Erne and Lower Lough Erne to the north. The Lough Oughter Complex SPA is of ornithological importance for its wintering waterbird populations. Of particular note is the internationally important population of Whooper Swan that is based in the area. The site also supports nationally important populations of a further two wintering species. Two of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan and Greenland White-fronted Goose. Lough Oughter is a Ramsar Convention site and a Wildfowl Sanctuary."	however the site is sufficiently distant from the project site to not be affected by dust. Noise: No LSE predicted There are no receptors for noise within this SAC. SCREENED IN Loss of habitat: No LSE (likely significant effect) predicted. No pathway exists as the project will not result in loss of any habitat within the SPA, nor any habitat of the type which may be part of and/or support SCIs for which the SPA is designated. Water quality discharge: Potential for LSE. There is a hydrological link between this SPA and the Project site via the Stradone River. This SPA and the Project site lie within the same ground waterbody, IE_NW_G_061 (Cavan). Without mitigation the water discharge with elevated suspended solids and/or accidental spillages or leaks at the site have the potential to impact on the surface waters and underlying aquifer which, in turn, could impact on the surface water receptors within the SPA.

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
Lough Sheelin SPA [004065]	14.6 km	- Great Crested Grebe (<i>Podiceps cristatus</i>) [A005] - Pochard (<i>Aythya ferina</i>) [A059] - Tufted Duck (<i>Aythya fuligula</i>) [A061] - Goldeneye (<i>Bucephala clangula</i>) [A067] - Wetland and Waterbirds [A999]	To maintain or restore the favourable conservation condition of the wetland habitat at Lough Sheelin SPA as a resource for the regularly occurring migratory waterbirds that utilise it.	"Lough Sheelin is a medium to large-sized lake, located on the border of Counties Cavan, Westmeath and Meath. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Great Crested Grebe, Pochard, Tufted Duck and Goldeneye. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. Lough Sheelin is a nationally important site for four species of wintering wildfowl and is one of the main Midlands lakes sites for wintering birds."	Emissions to air (dust): No LSE predicted. There is a pathway (atmospheric) for dust between the project site and this SPA, however the site is sufficiently distant from the project site to not be affected by dust. Noise: No LSE predicted. There is a pathway (atmospheric) for noise between the project site and the SCI of the SPA, however the site is sufficiently distance from the project site to not be affected by noise. SCREENED IN Loss of habitat: No LSE (likely significant effect) predicted. No pathway exists as the project will not result in loss of any habitat within the SPA, nor any habitat of the type which may be part of and/or support SCIs for which the SPA is designated. Water quality discharge: No LSE predicted. No surface hydrology or groundwater pathways exists as this SPA lies within a different WFD sub-catchment [Cavan_SC_010] and different groundwater body, [LE_SH_G_110 (lmy)] from the project site which is in WFD sub-catchment Laragh_SC_010 and groundwater body

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
River Boyne and River Blackwater SAC [002299]	19.4 km	- Alkaline fens [7230] - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355]	To maintain the favourable conservation condition of Alkaline fens in River Boyne and River Blackwater SAC, To restore the favourable conservation condition of Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) * in River Boyne and River Blackwater SAC. To restore the favourable conservation condition of River Lamprey (<i>Lampetra fluviatilis</i>) in River Boyne and River Blackwater SAC	"River Boyne and River Blackwater SAC comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath, and smaller areas of Cavan and Louth. The main areas of alkaline fen in this site are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. The hummocky nature of the local terrain produces frequent springs and seepages which are rich in lime. A series of base-rich marshes have developed in the poorly-drained hollows, generally linked with these three lakes. Diversity of plant and animal life is high in the fen and the flora includes many rarities.	Emissions to air (dust): No LSE predicted. There is a pathway (atmospheric) for dust between the project site and this SPA, however the site is sufficiently distant from the project site to not be affected by dust. Noise: No LSE predicted. There is a pathway (atmospheric) for noise between the project site and the SCI of the SPA, however the site is sufficiently distance from the project site to not be affected by noise. SCREENED OUT Loss of habitat: No LSE (likely significant effect) predicted. No pathway exists as the project will not result in loss of any habitat within the SAC, nor any habitat of the type which may be part of and/or support SCIs for which the SAC is designated. Water quality discharge: No LSE predicted. No surface hydrology or groundwater pathways exists as this SAC lies within different WFD sub-catchments [nearest Blackwater(Kells)_SC_020] and different groundwater bodies, [nearest IE_EA_G_006]

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
River Boyne and River Blackwater SPA [004232]	19.4 km	Kingfisher (<i>Alcedo otthis</i>) [A229]	and To restore the favourable conservation condition of Atlantic Salmon (Salmo salar) in River Boyne and River Blackwater SAC To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA	The Boyne and its tributaries form one of Ireland's premier game fisheries and the area offers a wide range of angling, from fishing for spring salmon and grise to seatrout fishing and extensive brown trout fishing. In addition to species listed on Annex I/II of the EU Habitats Directive, the site also hosts a number of listed Red Data Book species. Whooper Swans winter regularly at several locations along the Boyne and Blackwater Rivers. The population is substantial, certainly of national, and at times international, importance. The River Boyne and River Blackwater SPA is a long, linear site that comprises stretches of the River Boyne and several of its tributaries; most of the site is in Co. Meath, but it extends also into Cos Cavan, Louth and Westmeath. The site includes the river channel and marginal vegetation. Most of the site is underlain by Carboniferous limestone but Silurian quartzite also occurs in the vicinity of Kells and Carboniferous shales and sandstones close to Trim. The River Boyne and River Blackwater Special Protection Area is of high	(Bailieborough) from the project site which is in WFD sub-catchment Laragh_SC_010 and groundwater body IE_NW_G_061 (Cavan), and therefore will not be impacted. Emissions to air (dust): No LSE predicted. There is a pathway (atmospheric) for dust between the project site and this SAC, however the site is sufficiently distant from the project site to not be affected by dust. Noise: No LSE predicted. There is a pathway (atmospheric) for noise between the project site and the SCI of the SAC, however the site is sufficiently distance from the project site to not be affected by noise. SCREENED OUT Loss of habitat: No LSE (likely significant effect) predicted. No pathway exists as the project will not result in loss of any habitat within the SPA, nor any habitat of the type which may be part of and/or support SCIs for which the SPA is designated. Water quality discharge: No LSE predicted. No surface hydrology or groundwater pathways exists as this SPA lies within different WFD sub-

Natura 2000 Site	Distance ⁸	Qualifying Interests ⁹	Conservation Objective	Brief Description ¹⁰	Connections (Source-Pathway-Receptor)
				ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive.	catchments [nearest Blackwater/Kells]_SC_020] and different groundwater bodies, [nearest IE_EA_G_006 (Bailieborough) from the project site which is in WFD sub-catchment Larragh_SC_010 and groundwater body IE_NW_G_061 (Cavan), and therefore will not be impacted. Emissions to air (dust): No LSE predicted. There is a pathway (atmospheric) for dust between the project site and this SPA, however the site is sufficiently distant from the project site to not be affected by dust. Noise: No LSE predicted. There is a pathway (atmospheric) for noise between the project site and the SCI of the SPA, however the site is sufficiently distance from the project site to not be affected by noise. SCREENED OUT

3.5. Step 4 - Part 1: Likely Significant Effects for the Project 'Alone'

There are two Natura 2000 sites subject to potential likely significant effects (LSEs) arising from the project:

- Lough Oughter and Associated Loughs SAC [000007]
- Lough Oughter Complex SPA [004049]

The pathways for the project alone have been identified as the potential for water quality issues from discharges from the quarry extraction area through potentially elevated suspended solids during the construction and operational phases at the project, and accidental spillages or leaks of fuels and oils, which have the potential to impact the water quality in the surface water system and the underlying aquifers which in turn, could impact on the surface water receptors within the SAC and SPA.

Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA lie within the same sub-catchment and groundwater body as the project site. Any pollution of the surface and/or groundwater and underlying aquifers has the potential to affect the habitats and species designated for these Natura 2000 sites. Therefore, elevated suspended solids and accidental spillages or leaks in surface water discharge, and/or groundwater should be carried forward into the Stage 2 Assessment as it might undermine the conservation objectives for the qualifying features of Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA.

3.6. Step 4 – Part 2: Assessment of Likely Significant 'In Combination' Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects (CIEEM, 2018).

Potential water quality impacts on surface water rivers, and groundwater and the underlying aquifers as a result of the proposed development has been identified and other plans and projects which may also affect the relevant screened-in Natura 2000 sites were considered in combination with this project for potential cumulative effects.

In combination effects were assessed by conducting a search of the county development plans and on-line planning forums for plans and projects in each of the counties in which the impacted Natura 2000 sites identified are located.

The screened-in Natura 2000 sites of Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA lie within County Cavan. The Cavan County Development Plan (2022 – 2028) and the on-line planning portal for this county were referenced to determine if there are any plans or projects which are likely to result in any surface and/or groundwater effects on either of these Natura 2000 sites.

The development plan for County Cavan underwent appropriate assessment and this did not give rise to likely significant effects on any European sites.

Planning applications to Cavan County Council within last 2 years which may also affect the relevant screened-in Natura 2000 sites mainly consist of domestic property developments and modifications such as extensions. These applications are mostly small-scale and will not result in in-combination effects with the proposed quarry extension.

Therefore, there are no pathways for the proposed quarry extension to act in-combination with other plans or projects. Cumulative effects on Lough Oughter and Associated Loughs SAC, and Lough Oughter Complex SPA will not occur as a result of the project.

3.7. Consideration of Screening

The AA screening has identified that there are two Natura 2000 sites, Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA, subject to potential LSEs arising from the proposed quarry extension. In the absence of a more detailed assessment or consideration of mitigation, LSEs on these sites cannot be excluded. As such, the assessment must proceed to Stage 2: Appropriate Assessment. The Natura Impact Statement is presented in subsequent sections.

4.0 Stage 2: Appropriate Assessment (Natura Impact Statement)

This Natura Impact Statement (NIS) was prepared as part of a planning application by P&S Civil Works Ltd to Cavan County Council in respect of the proposed quarry extension at Mullymagowan, Stradone, Co. Cavan (the 'project').

This NIS presents information on the project and on the Natura 2000 sites for which LSEs have been identified, in order for the competent authority, in this case Cavan County Council, to carry out a Stage 2 Appropriate Assessment. The purpose of the Stage 2 AA is to determine whether the project would lead to any adverse effects on the integrity of Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA. The integrity of a Natura 2000 site can be defined as 'the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified'.

The headings within the appropriate assessment report template provided in the European Commission guidance document on the assessment of plans and projects significantly affecting Natura 2000 sites (EC, 2021) have been used to provide a framework to examine the potential impacts of the project. This section of the report sets out the potential implications of the plan or project (both alone or in combination with other projects or plans) on the integrity of the Natura 2000 site with respect to the conservation objectives of the site and to its structure and function. The precautionary principle should be applied when considering the potential implications and the focus should be on demonstrating, with supporting evidence, that there will be no adverse effects on the integrity of Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA. Where this is not the case, adverse effects must be assumed.

4.1. Step 1: Collect information on the project and on the Natura 2000 sites concerned

A detailed project description is provided in Section 3.2 above which provides details on the construction and operational phases of the project and some details on the site drainage and wastewater management.

A description of each of the Natura 2000 sites screened in is provided in Table 3.2 above and the conservation objectives for each site are summarised below.

Lough Oughter and Associated Loughs SAC [000007]

The conservation objectives (COs) for Lough Oughter and Associated Loughs SAC are as follows:

To restore the favourable conservation condition of Natural eutrophic lakes with Magnopotamion or Hydrocharition type vegetation at Lough Oughter and Associated Loughs SAC, and

To maintain the favourable conservation condition of bog woodland habitat and Otter (Lutra lutra) at Lough Oughter and Associated Loughs SAC.

- Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150]
- Bog woodland [91D0]
- *Lutra lutra* (Otter) [1355]

The conservation objectives (COs) are available in the NPWS (2021) document Conservation Objectives Series for Lough Oughter and Associated Loughs SAC [000007].

Lough Oughter and its associated loughs occupy much of the lowland drumlin belt in north and central Cavan between Upper Lough Erne, Killeshandra and Cavan town and is comprised of some 90 inter-drumlin lakes and

14 basins in the course of the Erne River. The Lough Oughter area contains important examples of two habitats listed on Annex I of the E.U. Habitats Directive, and supports a population of the Annex II species, Otter.

Within the COs the attributes and targets listed in the conservation objectives relating to water quality focus on the need to restore the good macrophyte status of typical and characteristic species within these natural eutrophic lakes which is being undermined by nutrient enrichment from intensive agriculture in the area which has resulted in most of the lakes in the area having a less than good macrophyte status. Any changes in surface or groundwater quality could have an additional impact on the macrophyte populations in the natural eutrophic lakes and prevent their restoration to favourable levels.

Lough Oughter Complex SPA [004049]

The conservation objectives (COs) for Lough Oughter Complex SPA are as follows:

To maintain or restore the favourable conservation condition of the wetland habitat at Lough Oughter Complex SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

- Great Crested Grebe (*Podiceps cristatus*) [A005]
- Whooper Swan (*Cygnus cygnus*) [A038]
- Wigeon (*Anas penelope*) [A050]
- Wetland and Waterbirds [A999]

The conservation objectives (COs) are available in the NPWS (2022) document Conservation Objectives Series for Lough Oughter Complex SPA [004049].

There are no specific conservation objectives (COs) set for the Species of Conservation Interest (SCIs) of this SPA, but as for other similar SPAs which do have specific COs there is usually a link between water quality, food sources and populations of birds. Impacts to water quality have potential for adverse effects which could undermine the COs by causing a decline prey biomass or suitable foraging habitat relied upon by SCIs. For example, a study in 2021 indicated that high levels of nutrient input, resulting in 'hyper-trophic' conditions, were reducing chironomid larvae numbers and, by extension, negatively impacting the Pochard as these are among its primary food sources (Gilbert, Stanbury and Lewis, 2021); therefore any changes in surface and groundwater quality could have an impact on this SPA.

4.2. Step 2: Assessing the implications of the plan or project in view of the site's conservation objectives, individually or in combination with other plans or projects

The Appropriate Assessment Screening process showed that the elements of the project alone identified as having potential for LSEs on Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA are as follows:

- Adverse effects on surface and groundwater quality caused by potentially elevated suspended solids in discharged water from the proposed quarry void and accidental spillages or leaks in surface water discharge, and/or groundwater during the construction and operational phases at the site which have the potential to impact on the surface waters and underlying aquifer which, in turn, could impact on the surface water receptors, e.g. bog habitats and SCI birds dependant on them, within the relevant Natura 2000 sites.

Likely significant effects from other plans and projects were screened out during the Stage 1 assessment, see Section 3.6 above.

4.3. Step 3: Ascertain the effects of the plan or project on the integrity of Natura 2000 sites

Lough Oughter and Associated Loughs SAC

The threats and pressures relating to water quality which are currently undermining the integrity of Lough Oughter and Associated Loughs SAC are listed as nutrient enrichment from intensive agriculture in the area which has resulted in most of the lakes in the area having a poor species composition and lowering the natural eutrophic lake status.

However, recent baseline surface water quality results (November 2022) have shown that the surface water quality in both the Mullymagowan Stream and flooded quarry void are generally of good quality and there are no reported exceedances of the Environmental Quality Standards (EQS) for surface water. There was only one exceedance of the Groundwater Regulations (S.I. No. 366/2016) for sulphate at the quarry void, with 534mg/l reported compared to the GW Regs criteria of 187.5mg/l. The slightly raised sulphur limits will not cause any significant water quality impacts which will affect the integrity of the COs of Lough Oughter and Associated Loughs SAC due to a dilution effect as a result of the distance between the project site and the SAC.

As surface discharge from the quarry void is straight into the Mullymagowan stream and despite the distance between the project site and the SAC and any dilution effects, mitigation will be required to prevent any surface or groundwater pollution from accidental spillages or leaks of fuels and oils.

Lough Oughter Complex SPA

The conservation objectives for Lough Oughter Complex SPA are not specific, but as for other similar SPAs they relate to the link between water quality, food sources and populations of birds and therefore mitigation is required to ensure there is no reduction in surface or groundwater quality.

As with Lough Oughter and Associated Loughs SAC, the quality of the water discharge from the proposed quarry void has the potential to affect the integrity of the COs for this SPA. Therefore, mitigation will be required to prevent any surface or groundwater pollution within the SPA from accidental spillages or leaks of fuels and oils.

4.4. Step 4: Mitigation Measures

Pollution of surface and groundwater from accidental spillages or leaks of fuels and oils

There is the potential for pollution of surface and groundwater as a result of accidental spillages or leaks of fuels and oils during both the construction and operational phases of the project which could affect the integrity of the COs for the relevant Natura 2000 sites screened in.

In order to mitigate against the risk of pollution to groundwater and surface water arising during the proposed extension of the quarry, the following water / environmental control measures will be implemented:

- The dewatering at the quarry will require the provision of a sump on the quarry floor, the pumping of water from the sump to the discharge point in the adjacent Mullymagowan Stream which flows north to the Stradone River. A bund will be constructed around the sump. This will minimise the volume of surface water runoff entering the sump;
- Measures will be taken to ensure that all diesel fuel oil storage will be in a double skinned fuel tank in a secure container to prevent contamination of groundwater;
- A spill kit including high absorbency mats and pig tails will be available on site to be used in the event of a hydrocarbon spill;
- A programme of surface quality monitoring will be implemented, with samples taken from the sump and the discharge point on a monthly basis. If there is a deterioration in surface water quality as a result of

construction related activities, then measures to manage and reduce fines / fuels in any runoff will be implemented;

- Groundwater monitoring wells will be installed around the site and samples will be taken from the wells on a quarterly basis. If there is a deterioration in groundwater quality as a result of construction related activities then, as above, measure will be implemented; and
- The Environmental Management System will continue to be implemented at the site.

4.5. Conclusions

This Natura Impact Statement, based on the best available scientific information, shows that, considering the project with mitigation measures, the proposed development will not undermine the conservation objectives for Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA, either alone or in-combination with other projects or plans.

Based on the information set out in this report we submit that the competent authority has sufficient information to allow it to determine that the proposed continuance of quarrying works, individually or in combination with other plans or projects, will not have an adverse effect on the integrity or pose a risk of likely significant effects on the Natura 2000 sites: Lough Oughter and Associated Loughs SAC and Lough Oughter Complex SPA, or any other Natura 2000 site.

5.0 REFERENCES

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FIGURES

FIGURE 1

Location of Project Site and Natura 2000 Sites Map

