

Remedial Natura Impact Statement

Tromman Quarry, Co. Meath

June 2019



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DOCUMENT CONTROL

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STATEMENT OF AUTHORITY

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As members of CIEEM, Kristi, Mike and Will are required to abide by a strict code of professional conduct in all aspects of this work.

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1. INTRODUCTION

1.1 Background

Woodrow Sustainable Solutions Ltd. (Woodrow) was commissioned by Quarryplan Ltd (Quarryplan) on behalf of Keegan Quarries Ltd. (“the Applicant”) to prepare a Remedial Natura Impact Statement (RNIS) for an existing quarry located in Tromman, Co. Meath.

1.2 Requirement for Remedial Natura Impact Statement

An Bord Pleanála served a notice under s.177D(6) of the Planning and Development Act 2000 (as amended) that there was a requirement for a substitute consent application for unauthorised quarry activities at Tromman Quarry under section 261A of the Planning and Development Act 2000. In accordance with the Act, and specifically in accordance with Section 177E, both a Remedial Environmental Impact Assessment Report (REIAR) and a Remedial Natura Impact Assessment are required.

Section 177T of the Planning and Development Act 2000 states the following with respect to *meaning* of a Natura Impact Statement:

- (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.

Section 177G of the Planning and Development Act 2000 states the following with respect to *required content* of a Natura Impact Statement:

- (1) A remedial Natura impact statement shall contain the following:
 - (a) a statement of the significant effects, if any, on the relevant European site which have occurred or which are occurring or which can reasonably be expected to occur because the development the subject of the application for substitute consent was carried out;
 - (b) details of—
 - (i) any appropriate remedial or mitigation measures undertaken or proposed to be undertaken by the applicant for substitute consent to remedy or mitigate any significant effects on the environment or on the European site;
 - (ii) the period of time within which any such proposed remedial or mitigation measures shall be carried out by or on behalf of the applicant;
 - (c) such information as may be prescribed under section 177N;
 - (d) and may have appended to it, where relevant, and where the applicant may wish to rely upon same:
 - (i) a statement of imperative reasons of overriding public interest;
 - (ii) any compensatory measures being proposed by the applicant.

A Natura Impact Statement is intended to facilitate decisions under Regulation 42 (2) of the 2011 Habitats Regulations by a competent authority (An Bord Pleanála) in its consideration of the planning application, as competent authority, with respect to:

- A determination on whether the proposal is directly connected with or necessary to site management for conservation; and if not,
- A determination on whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and if so,
- An Appropriate Assessment of the implications (of the proposal) for the site in view of the Natura 2000’s conservation objectives.

This report provides information which can be used to assist the Competent Authority in applying Article 6(3) and 6(4) of the Habitats Directive¹ as necessary, remedially, under their roles, functions and responsibilities in relation to the Appropriate Assessment of plans or projects. The Competent Authority may use such information to carry out an Appropriate Assessment of the Development and Quarry Activities in order to ascertain whether or not the project may adversely affect the integrity of any European Sites.

European Sites, also known as Natura 2000 Sites, include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The legal basis on which SACs are selected and designated is the EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended. SACs are designated to assist the protection of certain habitats and species under the Habitats Directive. Ireland is required under the terms of the EU Birds Directive (2009/147/EC) to designate Special Protection Areas (SPAs) for the protection of endangered species of wild birds. This includes; certain listed rare and vulnerable species; regularly occurring migratory species, such as ducks, geese and waders; and, wetlands, especially those of international importance, which attract large numbers of migratory birds each year.

1.3 Legislative Background to Natura Impact Statement

European Directive 92/43/EEC (The Habitats Directive) requires competent authorities to carry out an Appropriate Assessment (AA) of plans and projects that, either alone or in combination with other plans and projects are likely to have a significant effect on European designated sites.

The Habitats Directive was transposed into Irish law by the European Communities (Natural Habitats) Regulations 1997 and European Communities (Birds and Natural Habitats) Regulations 2011 (the Habitats Regulations). Regulation 42 of the 2011 Regulations requires that any proposal likely to have a significant effect on a European Site, alone or in combination with other operations or activities, needs to be assessed with respect to its potential impact in the site's conservation objectives (an Appropriate Assessment).

In general terms in Ireland, a Natura Impact Statement is a report that contains the Screening Stage of a Habitats Directive Article 6 assessment and, if required by the conclusions of the Screening Stage, the Appropriate Assessment.

1.3 Structure/ layout of the report

The report sections, paragraphs and tables relate in sequence to the process of assessing the potential impact of the project in the context of sequential requirements of Article 6 of the EU Habitats Directive.

¹ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, as amended by Council Directive 97/62/EC. Available at: http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [Accessed May 2019].

1.4 Main Sources of Information

The following information sources were consulted:

- Department of Environment, Heritage and Local Government (DoEHLG, 2009). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*;
- European Community Habitats Directive (92/43/EEC) – The Habitats Directive;
- European Communities (Natural Habitats) Regulations 1997;
- European Commission Environment DG (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*;
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC*;
- Environmental Protection Agency (EPA) Maps²;
- National Parks and Wildlife Services online MapViewer³;
- National Parks and Wildlife Service's data (downloaded GIS datafiles⁴);
- Meath County Council Planning Portal⁵;
- Woodrow (2019a). Tromman Quarry, Co. Meath - Phase 1: Preliminary Ecological Assessment;
- Woodrow (2019b). Remedial Ecological Impact Assessment Report (rEclAR) for pre-cast concrete manufacturing and quarry activities occurring at Tromman Quarry, Co. Meath

Woodrow carried out surveys within the Site Boundary on the following dates:

- 28 August 2018 - An Extended Phase 1 Habitat assessment and habitat mapping; and
- 16 October 2018 - An Extended Phase 1 Habitat assessment and habitat mapping.
- 18-19 June 2019 – Bat and breeding bird surveys

The above surveys were intended to gain a better understanding of the Site, and the information gathered was used to inform the REclAR (Woodrow, 2019b) and this RNIS. For this RNIS, the information gathered during site visits can be used to inform an assessment of the potential for any adverse effects upon the integrity of European Sites.

² EPA Maps. Available at: <https://gis.epa.ie/EPAMaps/> [Accessed May 2019].

³ NPWS Map Viewer. Available at: <http://webgis.npws.ie/npwsviewer/> [Accessed May 2018]

⁴ NPWS Maps and Data. Available at: <https://www.npws.ie/maps-and-data> [Accessed May 2019].

⁵ Meath County Council Planning Portal. Available at: [Accessed May 2019]

<http://p4.meathcoco.ie/locationpublisher42/default.aspx?themename=Planning&topicname=Planning> [Accessed May 2019].

STAGE ONE: SCREENING ASSESSMENT

2 DESCRIPTION AND FEATURES OF THE PROJECT AND AREA

2.1 Location

The quarry site is located at Tromman, Rathmolyon, Co. Meath. It is situated approximately 6.4 km south west of the town of Trim. The centroid of the Site can be found at Grid Reference N 77749 50250. The quarry site location in the context of the wider landscape is presented in **Figure 1**.

2.2 Description of the quarry site

The quarry site is an operational quarry, since December 1998 when the original planning permission was granted (ref 97/1 868). Operational works occurring on the quarry site include quarry extraction of material and concrete manufacturing. The total quarry site comprises approximately 22.5 ha (see red-lined boundary in **Figure 1**). The quarry infrastructure includes settlement ponds, site tracks, electrical substation, limestone powder plant, 2 no. batching plants and hopper, storage bays and an industrial unit.

The site is subdivided into two distinct formations, with the active extraction area almost exclusively being underlain by the Waulsortian limestone formation and the north western extent of the site being underlain by the Lucan formation.

The quarry site is bounded to the west by Kilsaran's Tromman Quarry, to the south by the regional road R156 and to the north and east by agricultural fields (see **Figure 1**).

2.3 Subjects of this Remedial Natura Impact Statement

The impacts of the three proposals outlined in **Table 1** below on Natura 2000 sites are considered in this RNIS.



Table 1 - The three proposals of this Remedial Natura Impact Statement

Proposal #	Proposal Title	Assessment Requirements	Background	Assessment Period
1	Manufacturing Facility Extension	<ol style="list-style-type: none"> 1. Construction of structures at the Precast Concrete Manufacturing Facility over the period 2013-2018. 2. Operation of the Manufacturing Facilities 	<p>The unauthorised construction of manufacturing structures in the northern section of the Site between 2013- 2018 (see Figure 2.1 and 2.2). The foundations used for the additional structures was paved ground prior to their construction. The construction of the various structures was completed in less than six months, reflecting the limited groundworks and additional services required.</p>	2013 to 5 th August 2018 (whereby this subject is then considered under Subject 2 below)
2	Quarry Activities since 5 August 2018	<ol style="list-style-type: none"> 1. Operation of the Manufacturing Facility Extension 2. Placement of overburden and processing waste into storage 3. Maintenance of site waters 4. Drill and Blast 5. Crush and Haul 6. Transport to and from Site 7. Restoration and afteruse 	<p>It is considered appropriate to consider the continued impact of all quarry activities (“Quarry Activities”) within the red-line boundary (see Figure 1) including the Manufacturing Facilities from the 5 August 2018 onwards, the point at which the continuation of site activities became unauthorised.</p> <p>It is considered that, effectively the 5 August 2018 comprises an additional baseline date, following which the environmental impact of all the site activities will need to be cumulatively considered, as substitute consent is also being sought for the continuation of activities in the lacuna between expiration of consent and the submission of the application.</p>	5 August 2018 to Submission of the Substitute Consent
3	Immediate Remediation	<ol style="list-style-type: none"> 1. Site restoration 2. Post—restoration 	<p>It is considered appropriate to consider the impact of immediate remediation (“Immediate Remediation”) to Site restoration and post-restoration in the instance that the substitute consent application related to this RNIS is not successful.</p>	Immediate remediation to site restoration and post-restoration



Figure 1 – Site location in the context of the wider landscape



Figure 2.1 – The northern section of Tromman Quarry on 18 April 2009. Note that none of the additional structures listed have been built but the paved ground is visible. Source: REIAR (2019)



Figure 2.2 – The northern section of Tromman Quarry on 24 March 2017. The Manufacturing Facility Extension has been built on the paved ground. Source: REIAR (2019)



Figure 3 – Tromman Quarry on 27 August 2018. Source: RIEAR (2019)

3. NATURA 2000 SITES WITHIN THE ZONE OF INFLUENCE OF THE SITE

As stated above, European Directive 92/43/EEC (The Habitats Directive) requires that any plans or projects that could, alone or in combination with other plans or projects, affect a Natura 2000 site, be subject to screening for potential significant effect on any Natura 2000 site.

3.1 Screening Assessment of Natura 2000 sites

The following section provides information on the Natura 2000 sites in the vicinity of the quarry site at Tromman, Co. Meath which have the potential to be within the zone of influence of the proposals (namely the Erection of additional structures in the precast manufacturing facilities, Quarry Activities since 5 August 2018 and Immediate Remediation). In many cases a standard 15 km distance from a subject is used as a potential zone of influence within which Natura 2000 sites should be screened for potential impact. However, in reality, the potential impacts on Natura 2000 sites are dependent on the nature of impacts arising, the sensitivity of receptors and the causal links and conduits, rather than distance. In many cases the potential zone of influence is considerably less than 15 km (for example noise and airborne pollution) while the potential zone of influence could be greater than 15 km, for example if there is a direct water connection.

Natura 2000 Sites with potential pathways for impacts are identified in order to establish the zone of influence of the proposals. These can then be assessed based on factors such as proximity to the proposals, the Qualifying Interests (QI's) of the Natura 2000 Sites (and the species or habitats upon which these rely), and their conservation status. A screening matrix, shown in **Table 2** below, is provided which illustrates the potential impacts, and any potential significant effect of the proposals on these Natura 2000 sites.

The screening process highlights that three Natura 2000 Sites: River Boyne and River Blackwater SAC, River Boyne and River Blackwater SPA and Mount Hevey Bog SAC (see **Figures 4** and **5**) occur within 15 km of the quarry site. The quarry site is approximately 1 km south west of the River Boyne and River Blackwater SAC in direct distance (see **Figures 4** and **5**) and is approximately 9.7 km south east of the quarry site via a hydrological connection (see **Figures 6**). The quarry site is approximately 2.6 km south east of the River Boyne and River Blackwater SPA in direct distance (see **Figures 4** and **5**) and it approximately 9.7 km south east of the quarry site via a hydrological connection (see **Figures 6**). The quarry site is approximately 13 km north west of the Mount Hevey SAC.

Each of the Natura 2000 Sites within 15 km of the quarry site is listed in **Table 2**. Also, in **Table 2**, the QIs are listed, the potential for the proposals to affect them is considered and a conclusion on the potential for the proposals to have a significant effect on the QIs (and therefore the Natura 2000 Site) is made.

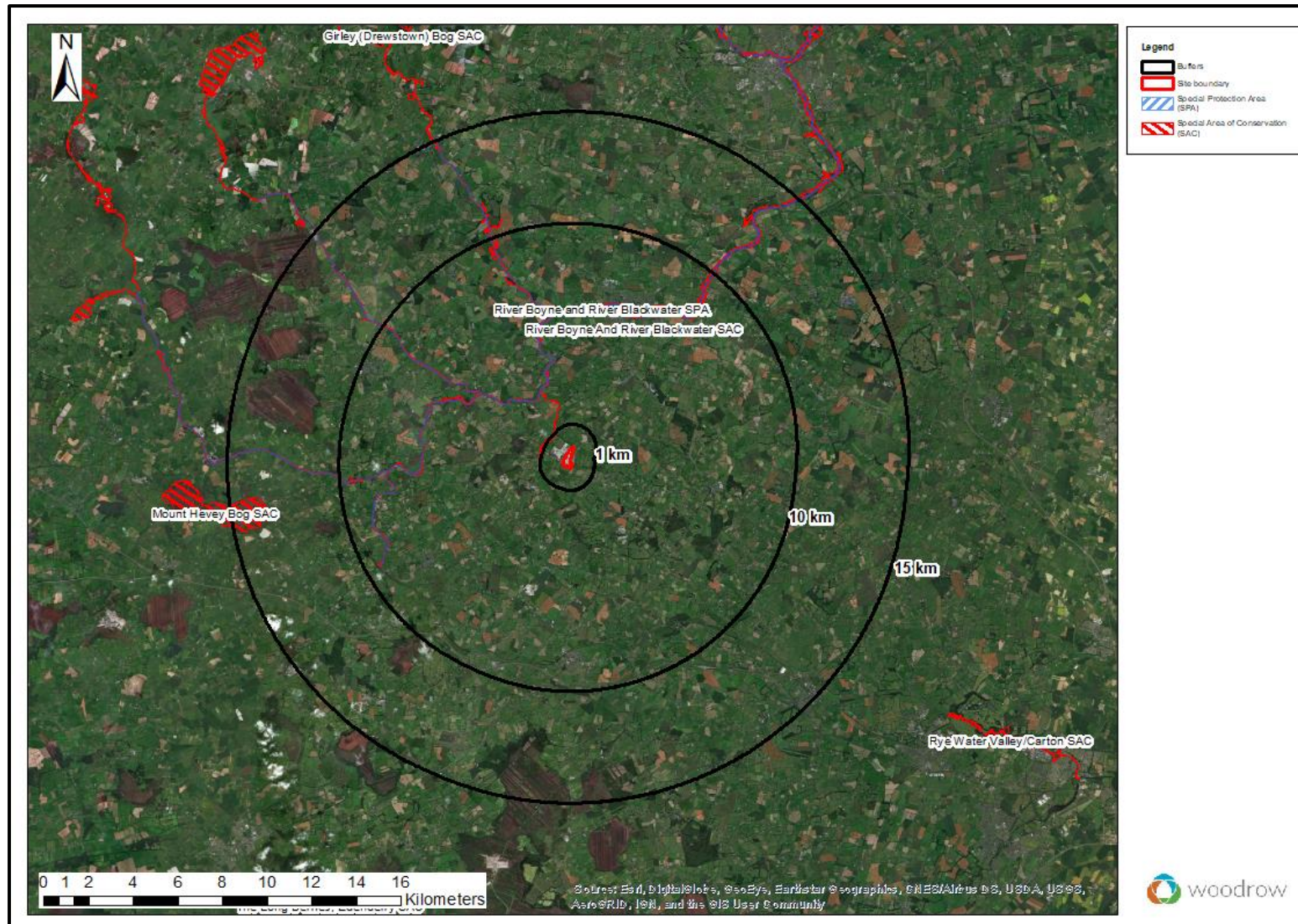


Figure 4 - Natura 2000 Sites within 15 km of the Tromman Quarry, Co. Meath (illustrated by the red-lined boundary).

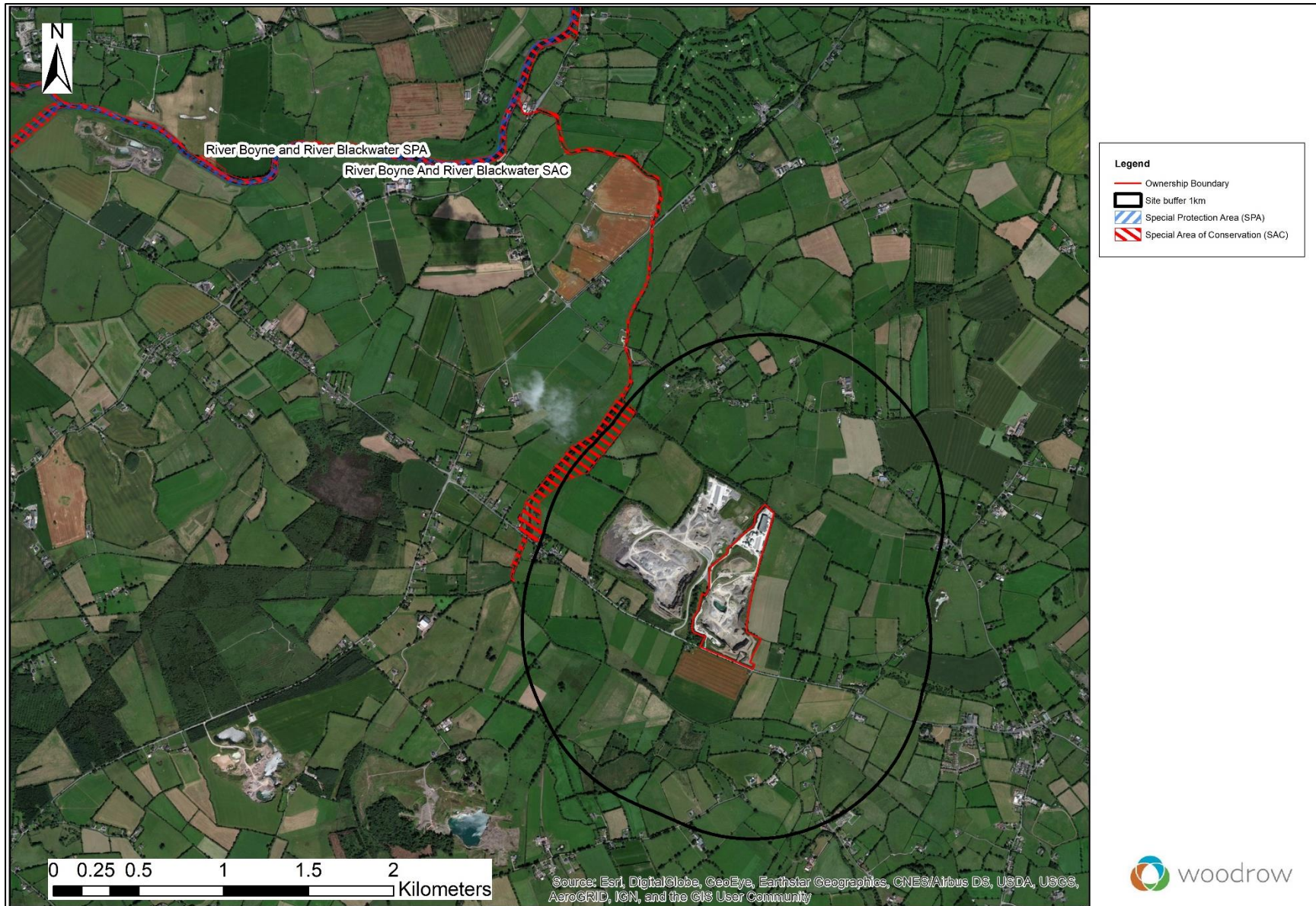


Figure 5 – Natura 2000 Sites within 1 km of the Site

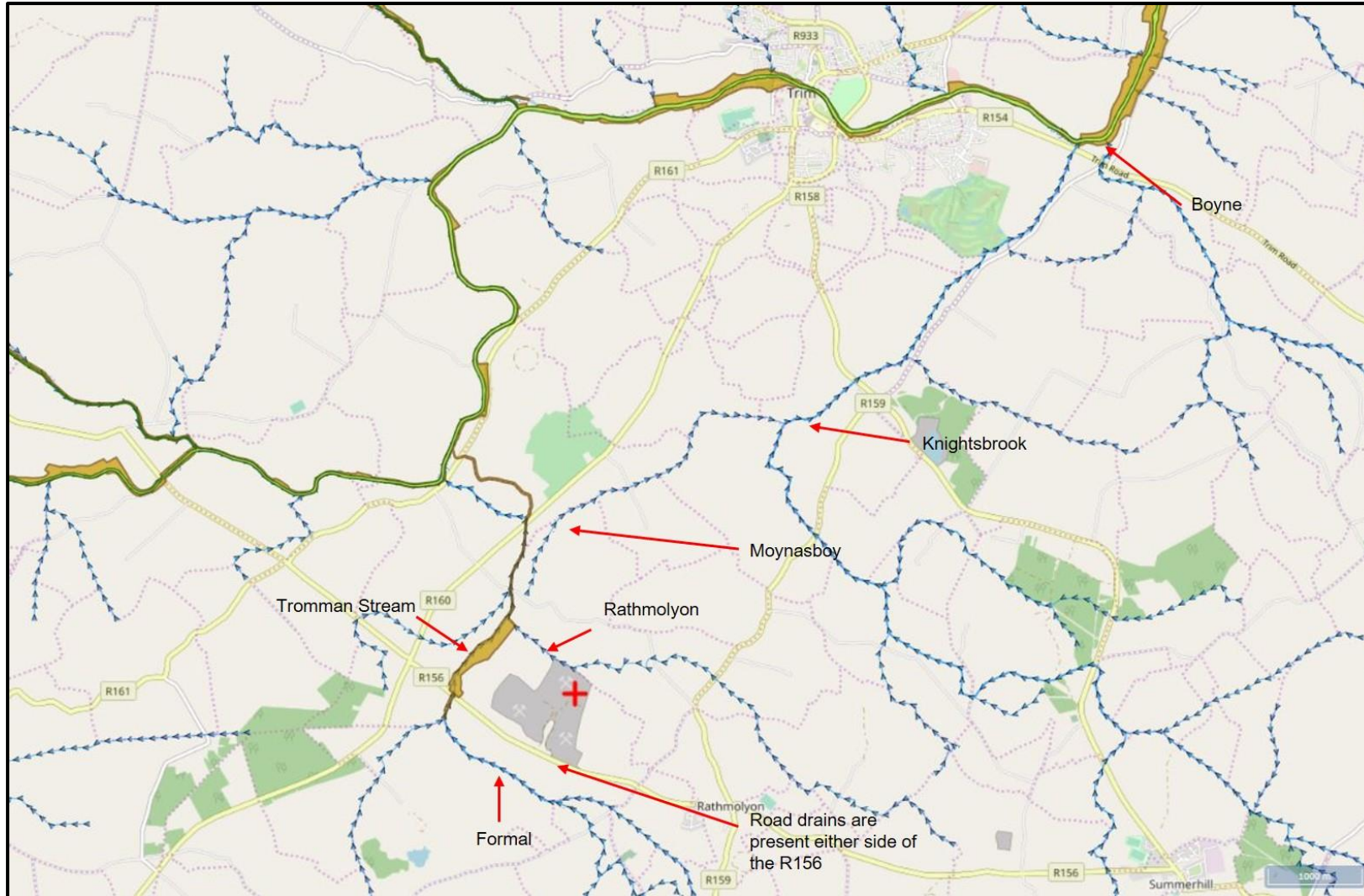


Figure 6 – Surface water in relation to the quarry site (location denoted by red cross). The River Boyne and River Blackwater SAC is illustrated by the orange/ brown colour. Source of the map and waterbody names: EPA⁶.

⁶ EPA Maps - <https://gis.epa.ie/EPAMaps/>

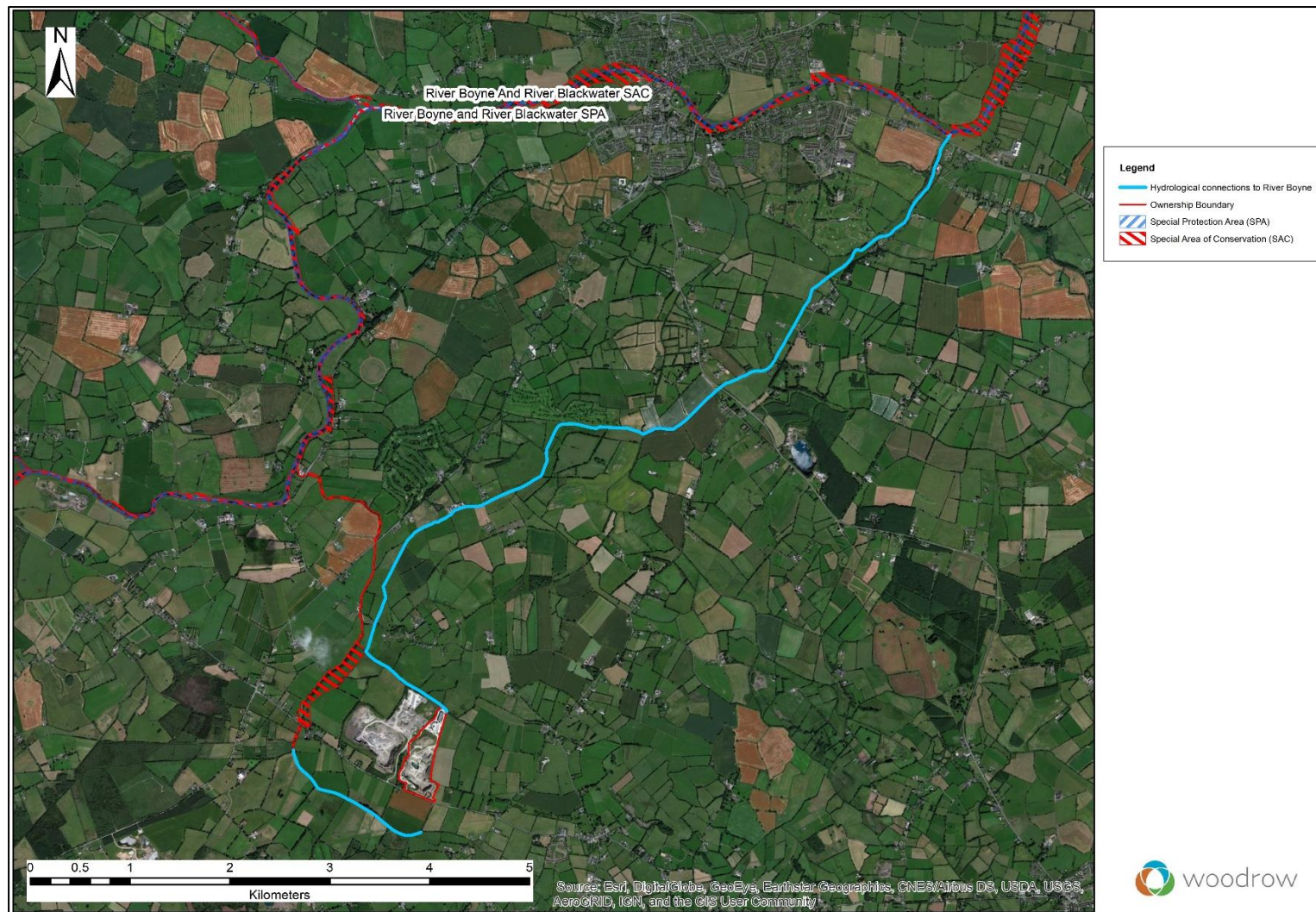


Figure 7 – Simplified surface water map illustrating the hydrological links between the quarry site and the River Boyne and River Blackwater SAC. For ease, the waterbody north of the quarry site is being referred to as the Knightsbrook Stream (as this is the largest section of this hydrological link) and the stream south of the quarry site is referred to as the Tromman Stream.⁷

⁷ Note the hydrological link immediately north of the site was found by hydrologist surveys for the RIEAR to run perpendicular to the River Boyne and River Blackwater SAC and not to run directly into it as is shown in the EPA maps in **Figure 6**.



Table 1: Screening Matrix of Impacts on all Natura 2000 sites in the Vicinity of the three Proposals of the quarry sites

Sites highlighted in grey have the potential to be affected by the Proposals.

European Site Name (Site Code)	Qualifying Interests (QI's) {QI code} * = Priority Habitats	Approximate Distance of the European Site from the quarry site at the Closest Point	Within the Zone of Influence?	Proposals Number and Description of the Proposal	Potential for Significant Effects and nature of potential impact ⁸⁹
River Boyne and River Blackwater SAC (002299)	<ul style="list-style-type: none"> • River lamprey (<i>Lampetra fluviatilis</i>) [1099] • Salmon (<i>Salmo salar</i>) [1106] • Otter (<i>Lutra lutra</i>) [1355] • Alkaline fens [7230]¹⁰ • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)* [91E0] 	1 km to the north west in direct distance	Yes	Proposal 1: Construction of structure in the precast manufacturing facility: <ul style="list-style-type: none"> - Construction of structures - Operation of the Pre Cast Manufacturing Facility and ancillary structures 	Possible Significant Effects – Potential localised water pollution (hydrocarbons) during construction operations and the potential indirect impact on the SAC. The potential inappropriate disposal of waste arising during the project and the potential indirect impact on the SAC. Potential localised water pollution (cement) during the operation of the Manufacturing Facility Extension.
		1 km to the north west in direct distance 1.6 km to the south and then west along a hydrological link (see Figure 7) 9.7 km to the north east along a hydrological link (see Figure 7)	Yes	Proposal 2: Cumulative Quarry Activities since 5 August 2018 <ul style="list-style-type: none"> - Operation of the Pre Cast Manufacturing Facility and ancillary structures - Placement of overburden and processing waste into storage - Maintenance of site waters - Drill and Blast - Crush and Haul - Transport to and from Site - Restoration and afteruse 	Possible Significant Effects – Potential localised water pollution (cement) during the operation of the manufacturing facility. Potential localised water pollution (cement and sediment) during placement of overburden and processing (via direct water entry and/ via airborne material entering the water). Potential water pollution (hydrocarbon, cement and sediment) during the maintenance of site waters. Potential surface water/ groundwater pollution (sediment) during drill and blast. Potential water pollution (hydrocarbon and sediment) during crush and haul. Potential water pollution (hydrocarbon, cement and sediment) during transport to and from site.

⁸ EPA Maps - <https://gis.epa.ie/EPAMaps/> - Information from this website has been used to assist this screening exercise.

⁹ EPA Flood Maps - <http://www.floodinfo.ie/map/floodmaps/> - Information from this website has been used to assist this screening exercise.



European Site Name (Site Code)	Qualifying Interests (QI's) {QI code} * = Priority Habitats	Approximate Distance of the European Site from the quarry site at the Closest Point	Within the Zone of Influence?	Proposals Number and Description of the Proposal	Potential for Significant Effects and nature of potential impact ⁸⁹
					Potential water pollution (hydrocarbon, cement and sediment) during the restoration.
		<p>1 km to the north west in direct distance</p> <p>1.6 km to the south and then west along a hydrological link (see Figure 7)</p> <p>9.7 km to the north east along a hydrological link (see Figure 7)</p>	Yes	<p>Proposal 3: Immediate Remediation</p> <ul style="list-style-type: none"> - Site restoration - Post—restoration 	<p>Possible Significant Effects –</p> <p>Potential water pollution (hydrocarbon, cement and sediment) during the restoration.</p> <p>Potential creation of otter habitat post restoration and afteruse.</p>
River Boyne and River Blackwater SPA (004232)	<ul style="list-style-type: none"> • Kingfisher (<i>Alcedo atthis</i>) [A229] 	<p>2.6 km north west in direct distance</p> <p>9.7 km to the north east along a hydrological link (see Figure 7)</p>	Yes	<p>Proposal 1: Construction of structure in the precast manufacturing facility:</p> <ul style="list-style-type: none"> - Construction of structures - Operation of the Pre Cast Manufacturing Facility and ancillary structures 	<p>Possible Significant Effects –</p> <p>Potential localised water pollution (hydrocarbons) during construction operations and the potential indirect impact on the SPA.</p> <p>The potential inappropriate disposal of waste arising during the project and the potential direct impact on the SPA.</p> <p>Potential localised water pollution (cement) during the operation of the Manufacturing Facility Extension.</p>
		<p>2.6 km north west in direct distance</p> <p>9.7 km to the north east along a hydrological link (see Figure 7)</p>	Yes	<p>Proposal 2: Quarry Activities since 5 August 2018</p> <ul style="list-style-type: none"> - Operation of the Pre Cast Manufacturing Facility and ancillary structures - Placement of overburden and processing waste into storage - Maintenance of site waters - Drill and Blast - Crush and Haul - Transport to and from Site 	<p>Possible Significant Effects –</p> <p>Potential localised water pollution (cement) during the operation of the manufacturing facility.</p> <p>Potential localised water pollution (cement and sediment) during placement of overburden and processing (via direct water entry and/ via airborne material entering the water).</p> <p>Potential water pollution (hydrocarbon, cement and sediment) during the maintenance of site waters.</p>



European Site Name (Site Code)	Qualifying Interests (QI's) {QI code} * = Priority Habitats	Approximate Distance of the European Site from the quarry site at the Closest Point	Within the Zone of Influence?	Proposals Number and Description of the Proposal	Potential for Significant Effects and nature of potential impact ⁸⁹
				- Restoration and afteruse	Potential surface water/ groundwater pollution (sediment) during drill and blast. Potential water pollution (hydrocarbon and sediment) during crush and haul. Potential water pollution (hydrocarbon, cement and sediment) during transport to and from site. Potential water pollution (hydrocarbon, cement and sediment) during the restoration.
		2.6 km north west in direct distance 9.7 km to the north east along a hydrological link (see Figure 7)	Yes	Proposal 3: Immediate Remediation - Site restoration - Post—restoration	Possible Significant Effects – Potential water pollution (hydrocarbon, cement and sediment) during the restoration. Potential creation of kingfisher habitat post restoration and afteruse
Mount Hevey Bog SAC (002342)	<ul style="list-style-type: none"> Active raised bogs* [7110] Degraded raised bogs still capable of natural regeneration [7120] Depression on peat substrates of the Rhynchosporion [7150] 	13 km to the south west	No	Proposal 1: Construction of structure in the precast manufacturing facility : - Construction of structures - Operation of the Pre Cast Manufacturing Facility and ancillary structures	None – Given the location of this project (approximately 13 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked (and the habitats are rain-water fed regardless), it is considered that there is no realistic potential for significant effect.
		13 km to the south west	No	Proposal 2: Quarry Activities since 5 August 2018 - Operation of the Pre Cast Manufacturing Facility and ancillary structures - Placement of overburden and processing waste into storage - Maintenance of site waters - Drill and Blast - Crush and Haul - Transport to and from Site - Restoration and afteruse	None – Given the location of this project (approximately 13 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked (and the habitats are rain-water fed regardless), it is considered that there is no realistic potential for significant effect.



European Site Name (Site Code)	Qualifying Interests (QI's) {QI code} * = Priority Habitats	Approximate Distance of the European Site from the quarry site at the Closest Point	Within the Zone of Influence?	Proposals Number and Description of the Proposal	Potential for Significant Effects and nature of potential impact ⁸⁹
		13 km to the south west	No	Proposal 3: Immediate Remediation - Site restoration - Post—restoration	None – Given the location of this project (approximately 13 km away from this SAC) and the fact that the habitats within the SAC are not hydrologically linked (and the habitats are rain-water fed regardless), it is considered that there is no realistic potential for significant effect.

Explanation of terms used in Significance of Impact Matrix:

Likely Significant Effect - Where a plan or project is likely to undermine any of the Site's conservation objectives; **Possible Significant Effect** - Where a plan or project has an indicated potential to undermine any of the Site's conservation objectives, but where doubt exists about the risk of a significant effect in the current context. Nevertheless, where doubt exists about the risk of a significant effect, use of the precautionary principle requires this effect to be considered appropriately within the Article 6 assessment process.

Table 2: Screening Matrix of the Proximity of Qualifying Interests of Natura 2000 sites with the zone of influence to the quarry site

Qualifying Interests in **bold** have the potential to be affected by the Proposals.

European Site Name (Site Code)	Qualifying Interests (QI's) {QI code] * = Priority Habitats	Proximity of the Qualifying Interest to the quarry site	Qualifying Interest within the Zone of Influence?
River Boyne and River Blackwater SAC (002299)	River lamprey (<i>Lampetra fluviatilis</i>) [1099]	River lamprey are present in the lower reaches of the Boyne River ¹¹ . The quarry site is linked to the mid and upper reaches of the River Boyne. Using the precautionary principle, this QI is taken to be within the zone of influence.	Yes
	Salmon (<i>Salmo salar</i>) [1106]	Salmon use the tributaries and headwaters as spawning grounds. Salmon run the River Boyne almost every month of the year ¹¹ .	Yes
	Otter (<i>Lutra lutra</i>) [1355]	Otter can be found throughout the SAC ¹¹ .	Yes
	Alkaline fens [7230]	The main areas of alkaline fen in the SAC are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough which are approximately 27 km north west of the quarry site. There is no hydrological link between this section of the SAC and the quarry site.	No
	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)* [91E0]	Wet woodland fringes many stretches of the Boyne. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east ¹¹ .	Yes
River Boyne and River Blackwater SPA (004232)	Kingfisher (<i>Alcedo atthis</i>) [A229]	This SPA includes the River Boyne and several of its tributaries ¹² .	Yes

¹¹ NPWS (2014). River Boyne and River Blackwater SAC (Site Code: 002299). Site Synopsis. Rev 13.Doc. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002299.pdf> [Accessed June 2019].

¹² NPWS (2010). River Boyne and River Blackwater SPA (Site Code: 004232). Site Synopsis. Available at: <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004232.pdf> [Accessed June 2019].

3.2 Results and conclusions of Screening for Appropriate Assessment

The proposals involve 1) Erection of additional structures in the precast manufacturing facilities , 2) Quarry activities since 5 August 2018 and 3) Immediate remediation. The location for all three proposals are within an area that has been an active quarry since 1998: the Precast Manufacturing Facility and ancillary structures are located in the north of the quarry site (see **Figure 2.2**), whilst the Quarry Activities since 5 August 2018 and Immediate Remediation relate to the whole of the quarry site (see red-lined boundary in **Figure 1**). The three proposals are described in more detail in **Section 2.3, Table 1**.

The three proposals for the quarry site are not connected with or necessary for the management of any Natura 2000 sites. The quarry site (i.e. the red line boundary, see **Figure 1**) is hydrologically linked to two Natura 2000 sites. The quarry site is approximately 1 km south east in direct distance and is linked approximately 9.7 km to the south east along a hydrological link to the River Boyne and River Blackwater SAC (hydrological connections for the Manufacturing Facilities, Quarry Activities since 5 August 2018 and Immediate Remediation proposals). The quarry site is approximately 2.6 km south east in direct distance and approximately 9.7 km to the south west along the closest hydrological link of the River Boyne and River Blackwater SPA. These Natura 2000 Sites are within the zone of influence which poses the risk of direct and indirect impacts¹³ and therefore the risk of significant effects, on these Natura 2000 Sites and their QI's.

Below, the two Natura 2000 sites, River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA, and their QI's which are considered to be within the Zone of Influence are listed. Due to the fact that these Natura 2000 sites could be affected by the proposals for the reasons outlined below, it is deemed necessary using the precautionary principle to 'screen in' these Natura 2000 sites and to undertake an Appropriate Assessment in order to consider if the proposals could affect the integrity of these Natura 2000 sites.

3.2.1 River Boyne and River Blackwater SAC (002299)

Qualifying Interests within the Zone of Influence

The quarry site is approximately 1 km south east in direct distance and is linked approximately 1.6 km to the west (hydrological connections for the Quarry Activities since 5 August 2018 and Immediate Remediation proposals) and 9.7 km to the south east along a hydrological link to the River Boyne and River Blackwater SAC (hydrological connections for the Manufacturing Facilities, Quarry Activities since 5 August 2018 and Immediate Remediation proposals) (See **Figure 7**). Therefore, the proposals have the potential to result in indirect water quality impacts. Measures will need to have been/ to be in place in order to protect the local aquatic ecology from the three proposals. Considering this, this Natura 2000 Site is deemed in this instance to 'screen in' and require an Appropriate Assessment.

The following QI's of the River Boyne and River Blackwater SAC could be affected by hydrological impacts:

- River lamprey (*Lampetra fluviatilis*) [1099]
- Salmon (*Salmo salar*) [1106]
- Otter (*Lutra lutra*) [1355]
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)* [91E0].

Conservation Objectives for the Qualifying Interests within the Zone of Influence

The generic conservation objectives for river lamprey, salmon, otter, alkaline fen and alluvial forests is to maintain the favourable conservation condition of the habitat / species (NPWS, 2018a).

¹³In this report, direct impacts constitute direct or primary impacts to Natura 2000 sites, for example habitat loss or mortality of QI species. Indirect or secondary impacts constitute pollution of water courses which may flow into a Natura 2000 site.

3.2.2 River Boyne and River Blackwater SPA (004232)

Qualifying Interests within the Zone of Influence

The quarry site is approximately 2.6 km south east in direct distance and approximately 9.7 km to the south west along the closest hydrological link of the River Boyne and River Blackwater SPA (see **Figure 7**). Therefore, the proposals have the potential to result in indirect water quality impacts. Measures will need to have been/ to be in place in order to protect the local aquatic ecology from the three proposals. Considering this, this Natura 2000 Site is deemed in this instance to 'screen in' and require an Appropriate Assessment.

The following QI's of the River Boyne and River Blackwater SPA could be affected by hydrological impacts:

- Kingfisher (*Alcedo atthis*) [A229]

Conservation Objectives for the Qualifying Interests within the Zone of Influence

The generic conservation objectives for kingfisher is to maintain the favourable conservation condition of the bird species (NPWS, 2018b).

3.3 Conclusions

Following the screening process above, the screening matrix of all impacts (Table 2) ruled out Natura 2000 sites for further assessment based on distance and the lack of a source-pathway-receptor linkage between the QIs and their specific sensitivities, and the three proposals (Precast Manufacturing Facility and ancillary development, Quarry Activities since 5 August 2018 and Immediate Remediation). Two Natura 2000 Sites, River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA, have been identified as being in the zone of influence.

Without consideration of the on-site conditions and pre-existing mitigation measures, the Screening for Appropriate Assessment has concluded that there was and is potential for Potential Significant Effect on River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA and that a Remedial Natura Impact Statement is required. These Natura 2000 sites and QIs within the zone of influence (presented in Table 2 and above) are assessed in Table 3 as part of the Appropriate Assessment process. The Remedial Natura Impact Statement is presented from Section 4 of this report

STAGE TWO: REMEDIAL NATURA IMPACT STATEMENT

4 DESCRIPTION OF NATURA 2000 SITES AND QUALIFYING INTERESTS POTENTIALLY AFFECTED

4.1 Natura 2000 Sites Identified within the Screening for Appropriate Assessment

The Screening for Appropriate Assessment (**Section 3**) specifically deals with the potential for likely significant effects on Natura 2000 sites / European sites (and their Qualifying Interests [QI's]), and where this arises, the Remedial Natura Impact Statement aims to assess whether the development may have or is adversely affect the integrity of any Natura 2000 sites.

The conclusions of the Screening for Appropriate Assessment exercise can be found in Section 3.3 of this RNIS. The Screening for Appropriate Assessment concluded that potential significant effects on the River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA could not be ruled out at the screening stage. The AA screening identified that the three 'proposals' occurring within the quarry site are hydrologically connected to both these Natura 2000 sites, (see **Figure 7**), with potential source-pathway receptor linkages that might result in a conclusion of significant impact. Specifically, there was considered to be a potential significant effect on the salmon, lamprey, otter and alluvial woodland QIs of the SAC and kingfisher a QI of the SPA, due to potential for a deterioration of water quality resulting from activities associated with the development (since there is shown to be hydrological connectivity, although distant approximately 10 km between Tromman Quarry and the River Boyne and River Blackwater SAC and SPA, via the Knightsbrook stream).

In terms of the River Boyne and River Blackwater SAC and SPA, the following assessment considers the potential effects of water quality changes on the associated habitat and species features. Specific issues relating to the effect of distance, existing mitigation and effluent monitoring at the site are addressed. In all instances, a worst-case scenario (pollution incident) is assessed against the pre-existing mitigation, as well as operational mitigation (for example as detailed within the Hydrogeological and Hydrological Assessment). The assessment is concentrated solely on the features and potential impacts highlighted in the screening assessment, i.e. impacts relating to water quality on salmon, lamprey, otter, alluvial woodland and kingfisher

A worst-case scenario would occur whereby the development would result in a significant detrimental change in water quality in the stream located to the north of the site either alone or in combination with other projects or plans as a result of indirect pollution.

Table 3 - Potential Significant Effects Matrix for Natura 2000 sites and Qualifying Interests within the zone of influence with the potential to be Significantly Affected by the proposals.

Natura 2000 site	Code	Qualifying Interest (QI)	Connectivity	Development activities	Potential Impact type and effect	Potential Cause
River Boyne and River Blackwater SAC (002299)	[1099]	River lamprey <i>Lampetra fluviatilis</i>	9.7 km to NE via hydrological link (see Figure 7)	Proposal 1: Construction of structure in the precast manufacturing facility:	Reduction in water quality through: - sedimentation resulting in inhibition of respiration in aquatic organisms, particularly salmonids - siltation resulting in smothering of fish eggs and affecting suitability of spawning locations - accidental release of toxic chemicals (hydrocarbons) and materials (cement & concrete) into surface waters directly poisoning fish and aquatic organisms Prolonged deterioration in water quality would impact on food sources for otter, as well as salmon and lamprey Pollution to surface waters (limnic, terrestrial, marine & brackish) is noted as having an impact on alluvial woodland in Ireland, however the occurrence is low (O'Neill <i>et al.</i> 2013) Positive ecological impacts are likely to be associated with the site restoration including the creation of a lake, which could provide potential habitat for otter.	Proposal 1: Construction of structure in the precast manufacturing facility Construction related pollution events could impact water quality locally; however, given the distance of the hydrological link, only the accidental release of extreme volumes of toxic substances would have the potential to impact the designated sites Proposal 2: Quarry activities since 05-Aug-18 Quarrying activities without appropriate mitigation in place could impact on water quality locally; however, given the distance of the hydrological link, only the accidental release of extreme volumes of toxic substances would have the potential to impact the Natura 2000 sites Proposal 3: Immediate Remediation De-watering activities will cease and this will further diminish the hydrological link between the Natura 2000 sites and the development
	[1106]	Salmon <i>Salmo salar</i>		- Construction of structures - Operation of the Pre Cast Manufacturing Facility and ancillary structures		
	[1355]	Otter <i>Lutra lutra</i>				
	[91E0]	Alluvial forests with <i>Alnus glutinosa</i> & <i>Fraxinus excelsior</i> * (Alno-Padion, Alnion incanae, Salicion albae)		Proposal 2: Quarry activities since 05-Aug-18 - Operation of the Precast Manufacturing Facility and ancillary Structures - Placement of overburden and processing waste into storage - Maintenance of site waters - Drill and Blast - Crush and Haul - Transport to and from Site - Restoration and afteruse Proposal 3: Immediate Remediation - Site restoration - Post—restoration		

Natura 2000 site	Code	Qualifying Interest (QI)	Connectivity	Development activities	Potential Impact type and effect	Potential Cause
River Boyne and River Blackwater SPA (004232)	[A299]	Kingfisher <i>Alcedo atthis</i>	9.7 km to NE via hydrological link (see Figure 7)	<p>Proposal 1: Construction of structure in the precast manufacturing facility:</p> <ul style="list-style-type: none"> - Construction of structures - Operation of the Pre Cast Manufacturing Facility and ancillary structures <p>Proposal 2: Quarry activities since 05-Aug-18</p> <ul style="list-style-type: none"> - Operation of the Precast Manufacturing Facility and ancillary Structures - Placement of overburden and processing waste into storage - Maintenance of site waters - Drill and Blast - Crush and Haul - Transport to and from Site - Restoration and afteruse <p>Proposal 3: Immediate Remediation</p> <ul style="list-style-type: none"> - Site restoration - Post—restoration 	<p>Prolonged deterioration in water quality would impact on food sources for kingfisher</p> <p>Excessive levels of discharge have the potential to alter water levels, which potentially impacts on kingfisher nesting holes in riverbanks through bank erosion and inundation</p> <p>Positive ecological impacts are likely to be associated with the site restoration including the creation of a lake, which could provide potential habitat for kingfisher.</p>	<p>Proposal 1: Construction of structure in the precast manufacturing facility</p> <p>Construction related pollution events could impact water quality locally; however, given the distance of the hydrological link, only the accidental release of extreme volumes of toxic substances would have the potential to impact the Natura 2000 sites</p> <p>Proposal 2: Quarry activities since 05-Aug-18</p> <p>Quarrying activities without appropriate mitigation in place could impact on water quality locally; however, given the distance of the hydrological link, only the accidental release of extreme volumes of toxic substances would have the potential to impact the Natura 2000 sites</p> <p>Proposal 3: Immediate Remediation</p> <p>De-watering activities will cease and this will further diminish the hydrological link between the Natura 2000 sites and the development</p>

4.2 Description of Natura 2000 Sites within the zone of influence

Appendix 1 provides a copy of the site synopsis for the River Boyne and River Blackwater SAC

Appendix 2 provides a copy of the site synopsis for the River Boyne and River Blackwater SPA

4.3 Assessment of potential impacts

The screening assessment concluded that potential significant effects on the River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA could not be ruled out at the screening stage. Specifically, in the absence of mitigation, there was considered to be a potential significant effect on the salmon, lamprey, otter and alluvial woodland QIs of the SAC and kingfisher a QI of the SPA as a result of potential deterioration of water quality resulting from quarry activity (since there is shown, to be hydrological connectivity, although distant approximately 10 km between Tromman Quarry and River Boyne and River Blackwater SAC and SPA, via the Kingsbrook stream).

In terms of the River Boyne and River Blackwater SAC and SPA, the following sections consider the potential effects of water quality changes on the associated habitat and species features. Specific issues relating to the effect of distance, existing mitigation and effluent monitoring at the site are addressed.

In all cases, the embodied mitigation in the design and approach of the proposal, as well as proposed operational mitigation (for example as detailed within the Hydrogeological and Hydrological Assessment) are considered.

The assessment is concentrated solely on the features and potential impacts highlighted in the screening assessment, i.e. dust impacts on European dry heaths and limestone pavements, and impacts relating to water quality salmon, lamprey, otter, alluvial woodland and kingfisher

4.3.1 River Boyne and River Blackwater SAC

4.3.1.1 Status of designated features within the SAC

The River Boyne and River Blackwater SAC supports important population of three species listed on Annex II of the E.U. Habitats Directive, namely:

River lamprey (*Lampetra fluviatilis*)

- present in the lower reaches of the Boyne River

Salmon (*Salmo salar*)

- run the River Boyne almost every month of the year and the Boyne is important as it represents an eastern river which holds large three-sea-winter fish

Otter (*Lutra lutra*)

- occur throughout the site.

The SAC also holds the priority Annex I habitat **Alluvial forests** with *Alnus glutinosa* & *Fraxinus excelsior* (Alno-Padion, *Alnion incanae*, *Salicion albae*)* and while the area of wet woodland is small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks, and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site.

4.3.1.2 Impacts of water pollution

The Annex II species listed as QI of the SAC, specifically salmon, lamprey and otter are sensitive to water pollution. Reduction in water quality through sedimentation can result in inhibition of respiration in aquatic organisms, particularly salmonids. Siltation can result in smothering of fish eggs and affecting suitability of spawning locations. The accidental release of toxic chemicals (hydrocarbons) and materials (cement & concrete) into surface waters can directly poison fish and other aquatic organisms. Prolonged deterioration in water quality would impact on food sources for otter, as well as salmon and lamprey

Alluvial forests are generally removed from the water environment, except in times of flooding and are not considered to be at risk from water pollution in this instance. The main threats to alluvial forests include fragmented nature, abundance of alien invasive species and sub-optimal grazing regimes and drainage (O'Neill *et al.* 2013). It is considered that there is no reasonable potential link, as no link to land use within SAC and therefore no potential for influence of grazing regimes or drainage.

4.3.1.3 Potential for impact

Proposal 1: Construction of Structures at Precast Concrete Manufacturing Facility,

During the time period of construction occurring in the precast concrete manufacturing area, the northern portion of the site was fully paved and considered an impermeable surface (hydrological assessment report - BCL Hydrogeologists Ltd 2019), thus eliminating the risk of contamination to ground water in the vicinity of the works. In addition, there were control measures in place to mitigate against contamination of surface waters including the construction of a surface water and ground water management system in 2009 (see Environmental Management System EMS produced by Byrne Environmental) and water monitoring. This was upgraded further in 2016 to incorporate concrete settlement tanks (see hydrological assessment report BCL Hydrogeologists Ltd 2019).

With the mitigation measures outlined in the EMS in place and with surface runoff directed to and collected in the settlement lagoons (latterly newly constructed tanks 2016-17) for discharge via the consented discharge point (as covered by Trade Effluent Discharge Licence Ref. 04/2), the risk of local watercourses and ground waters becoming contaminated as a result of on-going concrete manufacturing operations was low.

Proposal 2: Precast Concrete Manufacture area and ancillary structures combined with quarry activities since 5th August 2018

All ingress waters (groundwater and rainfall runoff) within the Tromman Quarry landholding are discharged into a ditch at the north-eastern corner of the concrete products yard. This ditch gently descends to the northwest to its confluence with the Rathmolyon Stream, which is 200 m downstream from the quarry discharge point. There were control measures in place to mitigate against contamination of surface waters including the construction of a surface water and ground water management system since 2009 (see Environmental Management System EMS produced by Byrne Environmental).

On the basis that the mitigation measures outlined in the EMS were in place, and all surface runoff was collected in the settlement lagoons for discharge via the consented discharge point (as covered by Trade Effluent Discharge Licence Ref. 04/2), the risk of local watercourses and ground waters becoming contaminated as a result of manufacturing and quarrying activities was low. It is considered that these measures were sufficient to ensure protection of the downstream SAC from any level of impact, as demonstrated by the monitoring data and EPA data showing the good water quality status assessment for the Knightsbrook stream. There has been no change in the layout and sizing of the approved drainage infrastructure (three-stage settlement tanks). It is therefore concluded that the quarry activities in combination with pre-cast concrete manufacturing activities did not have the potential to impact on the Qualifying Interests of the River Boyne and River Black Water SAC.

Proposal 3: Immediate remediation

During the remediation process the mitigations measures outlined above will still be in place; and as such, the risk of downstream impacts, should any pollution events occur on site will be sufficiently controlled.

Positive ecological impacts are likely to be associated with the site restoration including the creation of a lake, which could provide potential habitat for otter. In addition, de-watering activities will cease and this will further diminish the hydrological link between the Natura 2000 sites and the development.

4.3.2 River Boyne and River Blackwater SPA

4.3.2.1 Status of designated features within the SPA

Kingfisher [Natura 2000 code A229]

The River Boyne and River Blackwater SPA supports a nationally important population of kingfishers, 19 pairs recorded in 2010 and 20-22 territories recorded in 2008.

4.3.2.2 Impacts of water pollution

Potential impacts mainly relate to significant pollution events that may affect the birds directly or a gradual decline in the water quality that could, impact on food availability mainly in the form of small fish, as well as aquatic invertebrates. Indirect impacts on kingfisher would possibly occur if water quality was significantly reduced having an effect on food sources

4.3.2.3 Potential for impact

As with the potential for impact on the SAC, it is considered that the water control and pollution prevention measures currently in place (as detailed in Section 6) are sufficient to ensure protection of the downstream SPA from any level of impact, as demonstrated by the monitoring data. The development will result in no change to these measures. It is therefore concluded that the development across all the periods assessed did not have the potential to impact on kingfisher the only feature of interest for the River Boyne and River Blackwater SPA.

During the remediation process the mitigations measures outlined in Section 6 will still be in place; and as such, the risk of downstream impacts, should any pollution events occur on site will be sufficiently controlled. Positive ecological impacts are likely to be associated with the site restoration including the creation of a lake, which could provide potential habitat for kingfisher. In addition, de-watering activities will cease and this will further diminish the hydrological link between the Natura 2000 sites and the development.

5. CONSIDERATION OF 'IN-COMBINATION' IMPACTS

Article 6 of the EU Habitats Directive and Regulation 15 of the European Communities (Natural Habitats) Regulations state that any plan or project that may, either alone or in combination with other plans or projects, significantly affect a Natura 2000 site should be the subject of an Appropriate Assessment. The assessment of in-combination impacts is therefore an important part of the screening process.

In-combination impacts can be an issue when proposals have a small impact on Natura 2000 sites as a result of factors such as disturbance or pollution. If other proposals also have a further small impact, the combined result can be a significant impact on the Natura site.

The only potential impacts on Natura 2000 sites likely to originate from the quarry over its operational lifespan to date, or to arise from the current operation, result from:

- potential deterioration of water quality within River Boyne and River Blackwater SAC and SPA resulting from quarrying activities, since there is hydrological connectivity between since there is hydrological connectivity between the discharge point from the development and the SAC/ SPA.

Other potential impacts are considered either absent or *de minimis*. The issues, therefore, are the potential cumulative impact of deterioration in water quality resulting from proposals 1, 2 and 3 at Tromman Quarry, in combination with other sources within the River Boyne catchment and more specifically the Knightsbrook catchment. Meath County Council plan portal shows the location of other quarries within the Knightsbrook catchment, which vary considerably in scale, current level of activity and materials extracted and include the following six sites:

- Kilsaran's quarry. at Tromman – neighbouring quarry and block factory
- Farrelly at Castletown
- Fitzsimons at Rathmolyon
- Dixsons at Tobertynan
- Des Keegan & Sons Ltd at Cloncowan
- Roadstone Trim at Bray Hill, Stokestown just south of Trim

Other permitted and built development in the area is characteristic of agricultural uses with one-off housing in ribbon development patterns, which includes extension of existing dwelling and up-grading of domestic waste water treatment systems.

The *Water Environment* Chapter of the REIAR details that the outflow from Tromman quarry is directed into the Knightsbrook stream. The stretch of the Knightsbrook stream that the site flows into (Knightsbrook_020) is characterised as 'Good Status' under the Water Framework Directive Monitoring (2010-2015). The status of this stream changes to 'Poor' downstream of the R159 where other inflow streams join it from the east. This appears to demonstrate that, although there is a negative impact on the River Boyne (Boyne_100 waterbody, which is classified as 'Moderate') from the inflowing Knightsbrook stream, that this does not arise from the waterbody that the quarry connects to, which is in a higher status than all the downstream river waterbodies.

In addition, the *Water Environment* Chapter of the REIAR, states that water samples have been collected from the quarry discharge point on a regular basis and submitted for laboratory analysis in order to demonstrate compliance with the limits specified in the discharge consent (Trade Effluent Discharge Licence Ref. 04/2) and that this has not been breached.

There are no other issues that are considered to be relevant with respect to potential in-combination impacts for this site.

6 MITIGATION

The following mitigation measures are were considered:

All surface runoff within the site is collected in the settlement lagoons (latterly newly constructed tanks 2016-17) for discharge via the consented discharge point

The existing water treatment approaches employed by the quarry including a hydrocarbon interceptor, settlement ponds and a discharge volume limit. The discharge into a ditch in the northeast corner is covered by Trade Effluent Discharge Licence Ref. 04/2 (see EMS)

Water samples have been collected from the discharge point on a regular basis and submitted for laboratory analysis in order to demonstrate compliance with the limits specified in the consent.

EPA monitoring of the Knightsbrook stream gives the water quality status as Good.

There were and continue to be control measures in place to mitigate against contamination of surface waters including the construction of a surface water and ground water management system in 2009 (see Environmental Management System EMS produced by Byrne Environmental). In relation to protecting surface waters within the Keegan Quarry site as a whole, the EMS states:

The following general guidelines have been considered in designing an effective surface water management system for the site.

- *Solid inert waste will be disposed of by licensed removal from the site or by recycling on the site in a designated inert waste recycling location and in a manner that will not impact on surface waters.*
- *Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment in the designated storage location. Drip trays, mobile bunds and permanent bunded areas will be installed to minimize the potential for pollution of surface water bodies.*
- *Fuelling and lubrication of vehicles and mobile plant and equipment will not be carried out close to water courses and will be conducted on concrete surfaced areas.*
- *All refill points for fuels, lubricants, hydraulic fluids or any other hydro-carbon based liquids will be located in a hardstanding bunded area.*
- *Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and any contaminated soil removed from the site and properly disposed of by an appropriately licensed contractor.*
- *Foul drainage from site offices, canteen and toilets will be discharged to the biocycle system and percolation area.*
- *All concreted surfaces used for refuelling will be drained to a petrol/oil interceptor unit.*
- *Sites for use as storage areas, machinery depots, site offices, internal haul roads or the disposal of spoil will be located as far as is practicable from watercourses.*
- *All surface water collected on-site shall be diverted to the surface water settlement pond prior to discharge via a petrol/oil interceptor to surface water.*
- *No water shall be pumped from the quarry without passing through the settlement pond system*
- *The settlement lagoons shall be inspected weekly by the Site Manager and all settled solids shall be removed by pumping as required to ensure the capacity and efficiency of the lagoons is maintained at all times.*
- *Absorbent materials such as absorbent booms and vermiculite will be held on site and any spillages of organic liquids such as oils, greases etc will be contained and cleaned up immediately. The contaminated absorbent material will be correctly stored in a designated area on-site prior to being collected and disposed of by an approved contractor.*

- *All accidental discharge incidents shall be immediately reported to the environment department of Meath County Council by the Quarry Manager.*

On the basis that the mitigation measures outlined in the EMS were in place, and all surface runoff was collected in the settlement lagoons for discharge via the consented discharge point (as covered by Trade Effluent Discharge Licence Ref. 04/2), the risk of local watercourses and ground waters becoming contaminated as a result of construction activities was low. It is considered that these measures, in combination with the distance between the development and the Natura 2000 sites, are sufficient to ensure protection of the downstream SAC and SPA from any level of impact, as demonstrated by the monitoring data. It is therefore concluded that the development has not, does not and will not have the potential to impact on the features of the SAC or SPA through the 3 stages of development considered.

7. CONCLUSIONS

This Natura Impact Statement has identified the particular types of effect that have potential for adverse impact on the integrity of the River Boyne and Blackwater SAC and the River Boyne and Blackwater SPA. The statement identifies mitigation measures that were in place which have, are and will continue to ensure avoidance of these effects; so that the structure and functions of the SAC and SPA are not affected, thus demonstrating that mitigation was sufficient to avoid adverse impact throughout the time periods of the development assessed. These mitigation measures are set out in Section 6. The implementation of these control measures on site means that it can be concluded in the light of best scientific knowledge, that there has been and will be no significant effects, either individually or in combination with other plans or projects adversely affecting the conservation interests or conservation objectives of the River Boyne and Blackwater SAC and the River Boyne and Blackwater SPA, i.e. the integrity of these, or any other Natura 2000 sites.

This has been concluded for the following reasons:

- Limited connectivity to any Natura 2000 Site (a linear hydrological connection of 10 km to the River Boyne and Blackwater SAC and River Boyne and Blackwater SPA via a drain that largely only takes dewatering arisings from the quarry);
- The contained nature of quarrying and manufacturing operations with the site;
- Environmental controls employed, including an on-site Environmental Management System.
- During the restoration phase of the development de-watering activities would cease, meaning that discharge and flow into the northern drain would also cease, further diminishing any hydrologically link between the site and these Natura 2000 sites.

8. REFERENCES

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APPENDIX 1 SITE SYNOPSIS – RIVER BOYNE AND RIVER BLACKWATER SAC



SITE SYNOPSIS

Site Name: River Boyne and River Blackwater SAC

Site Code: 002299

This site 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 underlying geology is Carboniferous Limestone for the most part, with areas of Upper, Lower and Middle well represented. In the vicinity of Kells Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. There are many large towns adjacent to but not within the site, including Slane, Navan, Kells, Trim, Athboy and Ballivor.

The site is a Special Area of Conservation (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):

[7230] Alkaline Fens
[91E0] Alluvial Forests*
[1099] River Lamprey (<i>Lampetra fluviatilis</i>)
[1106] Atlantic Salmon (<i>Salmo salar</i>)
[1355] Otter (<i>Lutra lutra</i>)

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. Open water is usually fringed by Bulrush (*Typha latifolia*), Common Club-rush (*Scirpus lacustris*) or Common Reed (*Phragmites australis*), and this last species also extends shorewards where a dense stand of Great Fen-sedge (*Cladium mariscus*) frequently occurs. This in turn grades into a sedge and grass community (*Carex* spp. and Purple Moor-grass, *Molinia caerulea*), or one dominated by Black Bog-rush (*Schoenus nigricans*). An alternative aquatic/terrestrial transition is a floating layer of vegetation. This is normally based on Bogbean (*Menyanthes trifoliata*) and Marsh Cinquefoil (*Potentilla palustris*). Other species gradually become established on this cover, especially plants tolerant of low nutrient status e.g. bog mosses (*Sphagnum* spp.). Diversity of plant and animal life is high in the fen and the flora includes many rarities. Plants of interest include Narrow-leaved Marsh-orchid (*Dactylorhiza traunsteineri*), Fen Bedstraw (*Galium uliginosum*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Least Bur-reed (*Sparganium minimum*). These species tend to be restricted in their distribution in Ireland. Also notable is the

abundance of aquatic stoneworts (*Chara* spp.) which are characteristic of calcareous wetlands.

The rare plant Round-leaved Wintergreen (*Pyrola rotundifolia*) occurs around Newtown Lough. This species is listed in the Red Data Book and this site represents its only occurrence in Co. Meath.

Wet woodland fringes many stretches of the Boyne. The Boyne River Islands are a small chain of three islands situated 2.5 km west of Drogheda. The islands were formed by the build-up of alluvial sediment in this part of the river where water movement is sluggish. All of the islands are covered by dense thickets of wet, willow (*Salix* spp.) woodland, with the following species occurring: Osier (*S. viminalis*), Crack Willow (*S. fragilis*), White Willow (*S. alba*), Purple Willow (*Salix purpurea*) and Rusty Willow (*S. cinerea* subsp. *oleifolia*). A small area of Alder (*Alnus glutinosa*) woodland is found on soft ground at the edge of the canal in the north-western section of the islands. Along other stretches of the rivers of the site Rusty Willow scrub and pockets of wet woodland dominated by Alder have become established, particularly at the river edge of mature deciduous woodland. Ash (*Fraxinus excelsior*) and Downy Birch (*Betula pubescens*) are common in the latter, and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Yellow Iris (*Iris pseudacorus*), horsetails (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

The dominant habitat along the edges of the river is freshwater marsh, and the following plant species occur commonly in these areas: Yellow Iris, Creeping Bent (*Agrostis stolonifera*), Canary Reed-grass (*Phalaris arundinacea*), Marsh Bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*). In the wetter areas Common Meadow-rue (*Thalictrum flavum*) is found. In the vicinity of Dowth, Fen Bedstraw (*Galium uliginosum*), a scarce species mainly confined to marshy areas in the midlands, is common in this vegetation. Swamp Meadow-grass (*Poa palustris*) is an introduced plant which has spread into the wild (naturalised) along the Boyne approximately 5 km south-west of Slane. It is a rare species which is listed in the Red Data Book and has been recorded among freshwater marsh vegetation on the banks of the Boyne in this site. The only other record for this species in the Republic of Ireland is from a site in Co. Monaghan.

The secondary habitat associated with the marsh is wet grassland and species such as Tall Fescue (*Festuca arundinacea*), Silverweed (*Potentilla anserina*), Creeping Buttercup (*Ranunculus repens*), Meadowsweet and Meadow Vetchling (*Lathyrus pratensis*) are well represented. Strawberry Clover (*Trifolium fragiferum*), a plant generally restricted to coastal locations in Ireland, has been recorded from wet grassland vegetation at Trim. At Rosnaree river bank on the River Boyne, Round-Fruited Rush (*Juncus compressus*) is found in alluvial pasture, which is generally periodically flooded during the winter months. This rare plant is only found in three counties in Ireland.

Along much of the Boyne and along tributary stretches are found areas of mature deciduous woodland on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these are planted in origin. However the steeper areas of King Williams Glen and Townley Hall wood have been left unmanaged and now have a more natural character. East of Curley Hole the woodland has a natural appearance with few conifers. Broadleaved species include oaks (*Quercus* spp.), Ash, willows, Hazel (*Corylus avellana*), Sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*), Horse-chestnut (*Aesculus hippocastanum*) and the shrubs Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Elder (*Sambucus nigra*). South-west of Slane and in Dowth, some more exotic tree species such as Beech (*Fagus sylvatica*), and occasionally Lime (*Tilia cordata*), are seen. The coniferous trees Larch (*Larix* sp.) and Scots Pine (*Pinus sylvestris*) also occur. The woodland ground flora includes Barren Strawberry (*Potentilla sterilis*), Enchanter's-nightshade (*Circaea lutetiana*) and Ground-ivy (*Glechoma hederacea*), along with a range of ferns. Variation occurs in the composition of the canopy - for example, in wet patches alongside the river, White Willow and Alder form the canopy.

Other habitats present along the Boyne and Blackwater include lowland dry grassland, improved grassland, reedswamp, weedy waste ground, scrub, hedge, drainage ditch and canal. In the vicinity of Lough Shesk, the dry slopes of the morainic hummocks support grassland vegetation which, in some places, is partially colonised by Gorse (*Ulex europaeus*) scrub. Those grasslands which remain unimproved for pasture are species-rich, with Common Knapweed (*Centaurea nigra*), Creeping Thistle (*Cirsium arvense*) and Ribwort Plantain (*Plantago lanceolata*) commonly present. Fringing the canal alongside the Boyne south-west of Slane are areas with Reed Sweet-grass (*Glyceria maxima*), Great Willowherb (*Epilobium hirsutum*) and Meadowsweet.

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 grilse to seatrout fishing and extensive brown trout fishing. Atlantic Salmon (*Salmo salar*) use the tributaries and headwaters as spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. Atlantic Salmon run the Boyne almost every month of the year. The Boyne is most important as it represents an eastern river which holds large three-sea-winter fish from 20-30 lb. These fish generally arrive in February, with smaller spring fish (10 lb) arriving in April/May. The grilse come in July, water permitting. The river gets a further run of fish in late August and this run would appear to last well after the fishing season. The salmon fishing season lasts from 1st March to 30th September.

The Blackwater is a medium sized limestone river which is still recovering from the effects of the arterial drainage scheme of the 1970s. Salmon stocks have not recovered to the numbers that existed pre-drainage. The Deel, Riverstown, Stoneyford and Tremblestown Rivers are all spring-fed, with a continuous high volume of water. They are difficult to fish because some areas are overgrown, while others have been affected by drainage with resultant high banks.

This site is also important for the populations of two other species listed on Annex II of the E.U. Habitats Directive which it supports, namely River Lamprey (*Lampetra fluviatilis*), which is present in the lower reaches of the Boyne River, and Otter (*Lutra lutra*), which can be found throughout the site. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. Common Frog, another Red Data Book species, also occurs within the site. All of these animals, with the addition of the Stoat and Red Squirrel, which also occur within the site, are protected under the Wildlife Act, 1976.

Whooper Swans winter regularly at several locations along the Boyne and Blackwater Rivers. Known sites are at Newgrange (approx. 20 in recent winters), near Slane (20+ in recent winters), Wilkinstown (several records of 100+) and River Blackwater from Kells to Navan (104 at Kells in winter 1996/97, 182 at Headfort in winter 1997/98, 200-300 in winter 1999/00). The available information indicates that there is a regular wintering population of Whooper Swans based along the Boyne and Blackwater River valleys. The birds use a range of feeding sites but roosting sites are not well known. The population is substantial, certainly of national, and at times international, importance. Numbers are probably in the low hundreds.

Intensive agriculture is the main land use along the site. Much of the grassland is in very large fields and is improved. Silage harvesting is carried out. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the lakes. In the more extensive agricultural areas sheep grazing is carried out.

Fishing is a main tourist attraction on the Boyne and Blackwater and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The Eastern Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Parts of the river system have been arterially dredged. In 1969 an arterial dredging scheme commenced and disrupted angling for 18 years. The dredging altered the character of the river completely and resulted in many areas in very high banks. The main channel from Drogheda upstream to Navan was left untouched, as were a few stretches on the Blackwater. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area. Drainage of the adjacent river systems also impacts on the many small wetland areas throughout the site. The River Boyne is a designated Salmonid Water under the E.U. Freshwater Fish Directive.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, and habitats listed on Annex I of this Directive, as well as examples of other important habitat types. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks, and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site, as does the presence of a range of Red Data Book plant and animal species and the presence of nationally rare plant species.

APPENDIX 2: SITE SYNOPSIS RIVER BOYNE AND RIVER BLACKWATER SPA

SITE SYNOPSIS

SITE NAME: RIVER BOYNE AND RIVER BLACKWATER SPA

SITE CODE: 004232

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. It includes the following river sections: the River Boyne from the M1 motorway bridge, west of Drogheda, to the junction with the Royal Canal, west of Longwood, Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co. Cavan; the Tremblestown River/Athboy River from the junction with the River Boyne at Kilnagross Bridge west of Trim to the bridge in Athboy, Co. Meath; the Stoneyford River from its junction with the River Boyne to Stonestown Bridge in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge, Co. 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 site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: Kingfisher.

A survey in 2010 recorded 19 pairs of Kingfisher (based on 15 probable and 4 possible territories) in the River Boyne and River Blackwater SPA. A survey conducted in 2008 recorded 20-22 Kingfisher territories within the SPA. Other species which occur within the site include Mute Swan (90), Teal (166), Mallard (219), Cormorant (36), Grey Heron (44), Moorhen (84), Snipe (32) and Sand Martin (553) – all figures are peak counts recorded during the 2010 survey.

The River Boyne and River Blackwater Special Protection Area is of high 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.

25.11.2010