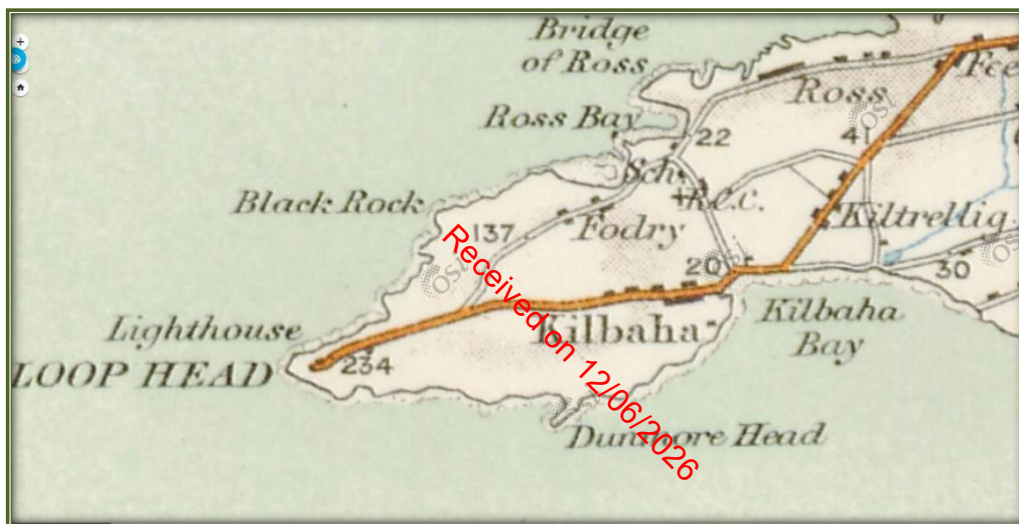


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NATURA IMPACT STATEMENT OF A PROPOSED DEVELOPMENT AT KILBAHA NORTH, KILRUSH, CO. CLARE



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1 INTRODUCTION

1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT

This Natura Impact Statement (NIS) was prepared for a proposed agricultural development at Kilbaha North, Kilrush, Co. Clare. Having regard to the location of the proposed development site and its proximity and connectivity to sites designated under the European Habitats Directive, an Appropriate Assessment of the proposed development was prepared in accordance with Article 6 of the Habitats Directive. This NIS was prepared following a request that was made by Clare County Council regarding this proposed development (Planning Reference Number: 26/60012). This report will allow Clare County Council, as the competent authority, to undertake an Appropriate Assessment determination of the proposed development.

The purpose of the assessment is to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises a comprehensive assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.2 THE AIM OF THE REPORT

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010), and it provides an assessment of the impacts of an agricultural development at Kilbaha North, Kilrush, Co. Clare on sites designated under European law (Natura 2000 sites).

An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated.

Accordingly, a comprehensive assessment of the impacts of this proposed application on designated sites was carried out in May 2026 by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified

and it also enabled potential ecological impacts on Natura 2000 sites associated with the proposed development to be assessed and mitigated for.

1.3 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive 2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs). This is explained in greater detail in the following section.

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2027 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the ‘Habitats Directive’ - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9

provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

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

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

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

Article 6(4) states:

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

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

The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U (1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

(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.

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the Habitats Directive

consent can only be granted for a project if, as a result of the appropriate assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b) after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

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2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This Appropriate Assessment report has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2021). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.
- The AA has also been undertaken in consideration of the European Union (CJEU) judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta), which concluded that "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site.". Other caselaw relevant to Screening are Waddenzee (C127/02), Holohan and Others v An Bord Pleanála (C461/17) and Court of Appeal case C1/2009/0041/QBACF Citation No [2009] EWCA Civ. 1061.
- Most recent and pertinent case law pertaining to AA screening comes from *Eco Advocacy v. An Bord Pleanála* Case C-721/21. This case recently determined that "standard design measures" can be included at design stage if they are an inherent part of the plan, namely a measure: *'incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site'*.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;

- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that “each stage determines whether a further stage in the process is required”. Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site’s structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – An assessment of the compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;

- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

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2.2 STATEMENT OF COMPETENCY

This NIS was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over 18 years. Noreen has over 20 years' experience as a professional ecologist in Ireland and in that time has completed a significant number of Appropriate Assessments and Ecological Impact Assessments for a large number and range of developments throughout Ireland.

2.3 DESK STUDIES & CONSULTATION

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - Aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species, conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) - Information pertaining to protected plant and animal species within the study area;
- Bing maps & Google Street View – High quality aerials and street images;
- Grasstec Group Ltd – Plans and Information Pertaining to the Development, including Information on emissions.
- Clare County Council – Information on planning history in the area for the assessment of cumulative impacts.

2.4 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (Zoi) of the proposed development was defined. Based on the potential impacts and their Zoi, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as “to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected”, and for SPAs “to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA”.

As defined in the Habitat’s Directive, the favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCO should be considered in detail.

3 SCREENING

3.1 DEVELOPMENT DESCRIPTION

In March 2026, Mr John Walsh applied to Clare County Council for planning permission for an agricultural development at an existing 1.48ha farm site in Kilbaha North, Kilrush, Co. Clare V15XF53. Planning permission is being sought here for the following:

For the demolition of an old cubicle and calf shed and construction of new agricultural shed in place of them to accommodate new robotic milking facilities, plant & ancillary rooms & underground slatted soiled water storage tank and construction of external underground slatted slurry storage tanks with grazeway gates & all associated siteworks

An extract from the planning drawings can be seen in Figure 1.

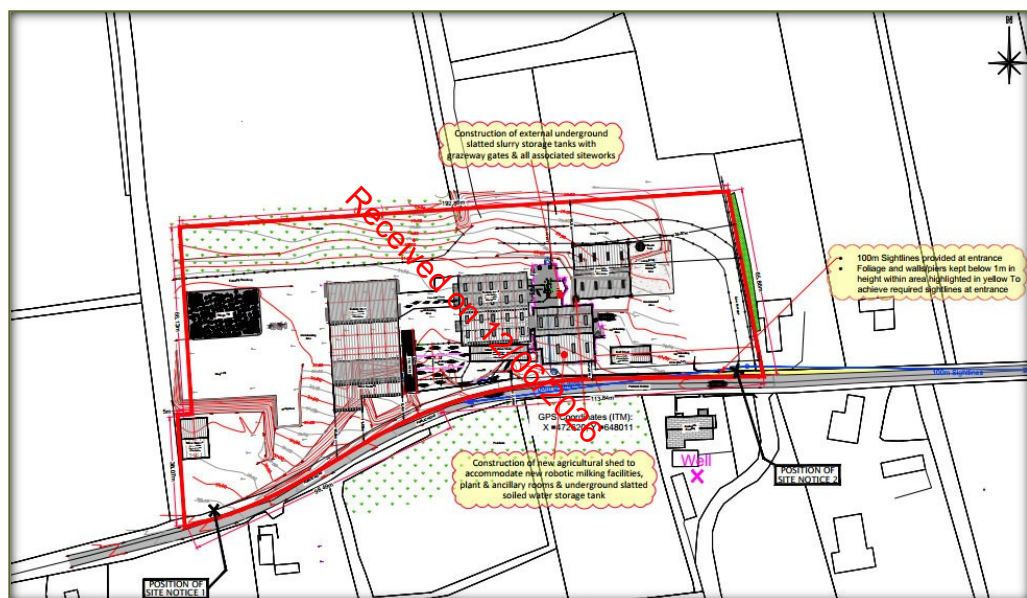


Figure 1 – Extract from Planning Drawings (Prepared by Grasstec Ltd).

Construction methods for all new structures will be standard and will follow best practice guidelines at all stages. All structures will be compliant with the recommendations of the Department of Agriculture, Food and the Marine. The operation of the farm following completion of construction will be done in accordance with S.I. 588 of 2025.

Farm Details

A Slurry and Water Management for the farm has been prepared by Grasstec Ltd, and this was submitted with the planning application. This report has been reviewed as part of this NIS.

The applicant farms 103.81ha at Kilbaha North, Kilrush, Co. Clare. The proposed herd size will remain the same as existing numbers; 180 Dairy Cows, 30 Calves (0-3 months old), 61 calves (4-12 months), 42 Heifers (1-2 years old) and 3 cattle (>2 years).

Under the proposed expansion, the Organic Nitrogen is calculated to be 195.7 kg N/ha. This figure is below the 252 kg N/ha threshold. This farm is in derogation, and a derogation plan for the farm has been prepared by Teagasc.

Slurry Management

As per the details outlined in the Slurry and Water Management Report that has been prepared by Grasstec (2025), there is sufficient slurry storage in the yard for the proposed stock numbers. 1487.7m³ of slurry storage is required. An additional 396.58m³ of storage is required for soiled rainfall on the Dungstead 10, waiting yard 11 including tank 11A and proposed uncovered tank 5B. 3090m³ of storage will be provided from the existing and proposed tanks. This will result in a surplus storage of 525.32m³ after parlour washings are also accounted for.

Silage Effluent Management

As per the drawings prepared by Grasstec, the silage effluent is directed from the existing silage slab No. 9, via underground pipes to existing tank 1A.

Farmyard Manure Management

Any farmyard manure produced on the farm will be land spread on owned lands as per the slurry spreading application rates and guidelines under the Nitrates Directive. Any run-off from the existing dungstead (No. 10) is directed to existing tank 1A.

Dairy Effluent and Soiled Water Management

As per the drawings prepared by Grasstec, cows are planned to be milked for 18 weeks of the closed period. The parlour washings from the existing Parlour 3, are piped to existing tank 11A. 680.4m³ of storage is required for 18 weeks parlour washings. There is sufficient storage provided in the existing and proposed tanks with surplus space available. Storage space is 3090m³ which gives an overall surplus of 525.32m³.

Clean Water Management

Clean water is collected in downpipes and directed to outfall to the fields away from the yard.

Land-Spreading

The spreading of the manure produced on the farm will be done on lands owned or rented by the applicant. Land-spreading will be done on the lands within the townland of Kilbaha North

and Kilbaha South. All land spreading will be done in accordance with the plan prepared by Grasstec (2025) within the requirements set out in S.I. 588 of 2025. The use and location of these lands has been considered as part of this AA process.

S.I. 588 of 2025

The European Union (Good Agricultural Practice for Protection of Waters) Regulations 2025 provides a basic set of measures to ensure the protection of waters, including drinking water sources, against pollution caused by nitrogen and phosphorus from agricultural sources, with the primary emphasis being on the management of livestock manures and other fertilisers. This directive outlines measures that must be followed during the land-spreading of manure. These measures are summarised in the points below.

- Livestock manure or slurry containing more than 170kg per hectare in a year must not be spread.
- The spreading of any organic fertiliser during certain times of the year is prohibited (The prohibited spreading period, generally between Mid-October and Mid-January).
- Farmers must keep within the overall maximum fertilisation rates for nitrogen and phosphorus.
- Farmers must have sufficient storage capacity to meet the minimum requirements of the regulations.
- All storage facilities must be kept leak proof and structurally sound.
- Records for the movement of fertilisers
- Chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water must be spread as accurately and as evenly as possible.
- An upward-facing splash plate or sludge irrigator on a tanker or umbilical system must not be used for the spreading of organic fertiliser or soiled water.
- Chemical fertilisers, livestock manure, soiled water or other organic fertilisers must not be spread when:
 - The land is waterlogged;
 - The land is flooded, or it is likely to flood;
 - The land is frozen, or covered with snow;
 - Heavy rain is forecast within 48 hours;
 - The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- Chemical fertilisers must not be spread on land within 2 metres of a surface watercourse.

Table 1 shows the buffer zones for various water bodies (lakes, rivers, wells etc.). Soiled water, effluents, farmyard manures or other organic fertilisers must not be spread inside these buffer zones.

Water Feature	Buffer Zone
Any water supply source providing 100m ³ or more of water per day, or serving 500 or more people	200m (or as little as 30m where a local authority allow)
Any water supply source providing 10m ³ or more of water per day, or serving 50 people or more	100m (or as little as 30m where a local authority allows)
Any other water supply for human consumption	25m (or as little as 15m where a local authority allows)
Lake shoreline or turlough likely to flood	20m
Exposed cavernous or karstified limestones features	15m
Any surface watercourse where the slope towards the watercourse exceeds 10%	10m
Any other surface waters	5m

Table 1 – Requirements for the Application of Fertilisers and Soiled Water as set out in S.I. 588 of 2025.

The applicant is fully aware of his obligations under S.I. 588 of 2025 and he will meet all the requirements under this Directive with the proposed application.

3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

The site in question is 1.48ha and it is located in a rural area, on the Loophead peninsula and within the townland of Kilbaha North. The site is approximately 1km west of Kilbaha village, and it is 12km west of Carrigaholt. The site is on the Western end of the Loop Head peninsula, and it is 4km east of Loop Head. The site will be accessed via an existing entrance into the farm, and this is just north of a Regional Road, the R487.

The land use surrounding the site is low intensity agriculture and the landscape is characterised by many long, narrow fields that are divided by low hedgerows. The predominant habitats that are represented locally include improved / semi-improved agricultural grasslands, along with wet grasslands, hedgerows and watercourses. The proposed spreadlands extend down south towards the shoreline habitats of the River Shannon mouth and the coastal / marine habitats that are represented locally here include vegetated sea cliffs, coastal grasslands and rocky / shingle shores. There is also a moderate level of one-off rural dwellings and farms in the locality, and the dominant habitats associated with these areas include buildings and artificial surfaces, and amenity grasslands and gardens.

Site location maps can be seen in Figures 2 and 3, whilst aerial photographs of the site and the surrounding habitats can be seen in Figures 4a and b.



Figure 2 – Map showing the Location of the Proposed Development Site (Pinned). Lands Owned by the Applicant in Kilbaha are Outlined in Orange.

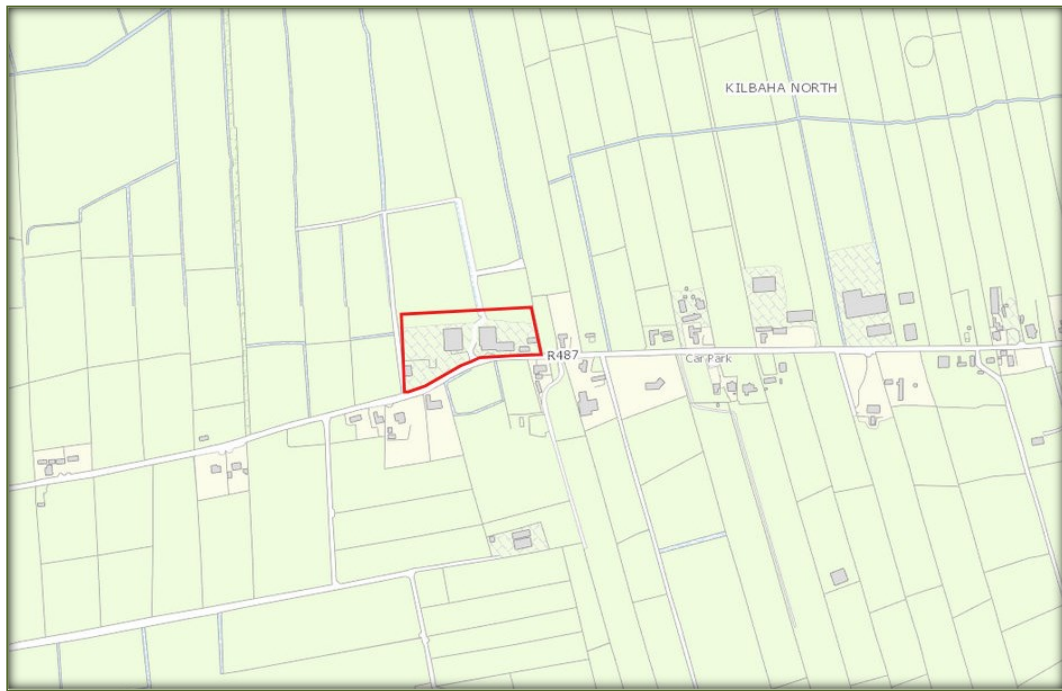


Figure 3a – Map showing the Location of the Proposed Development Site (Outlined in Red).

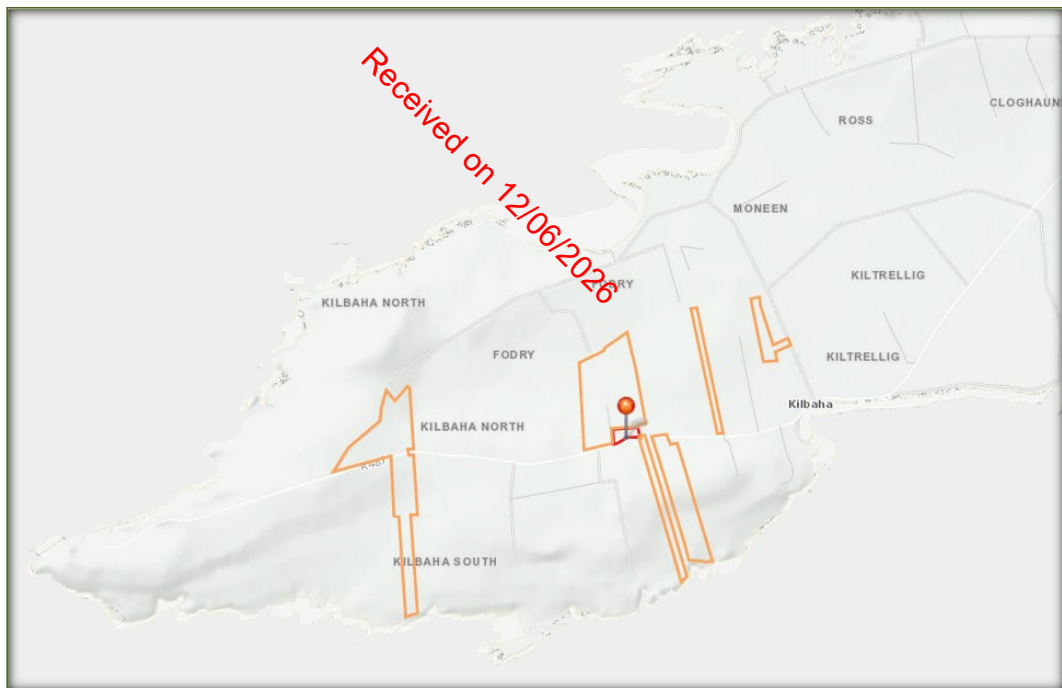


Figure 3b – Map showing the Location of the Proposed Development Site (Pinned). Lands Owned by the Applicant Outlined in Orange.

HABITATS WITHIN THE SITE

The application site itself does not lie within or immediately adjacent to any site that has been designated for nature conservation purposes. The site encompasses the applicants existing farmyard complex and the dominant habitat within it is Buildings and Artificial surfaces.

The land-spreading of the manure on the farm will be done on areas of improved grasslands that have traditionally been land-spread and improved.

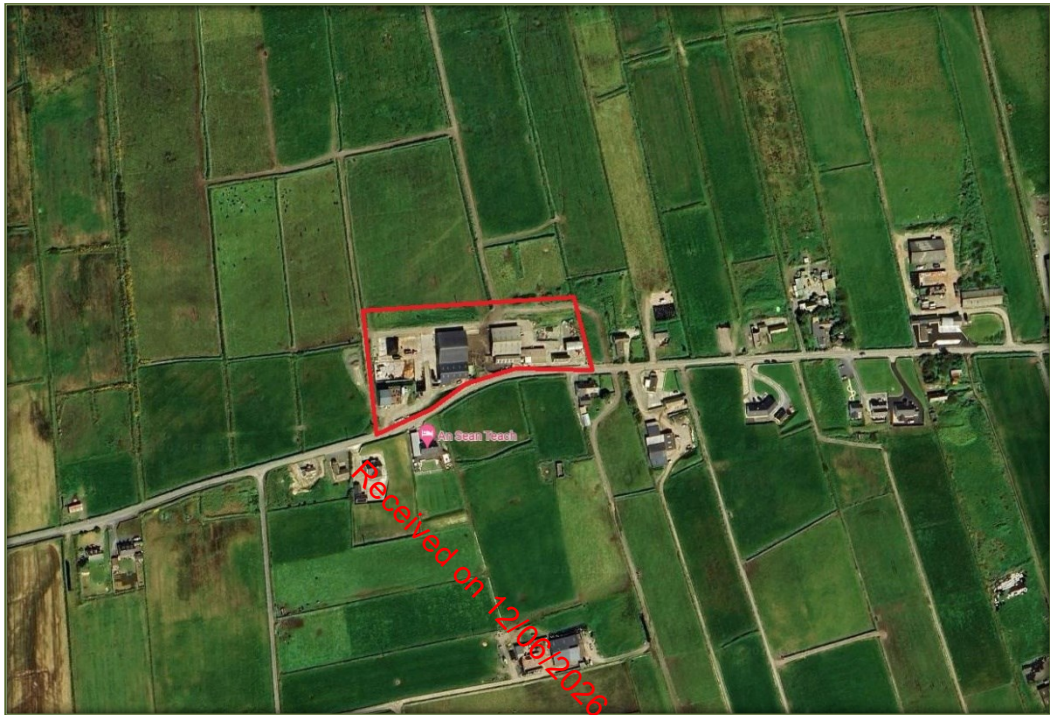


Figure 4a – Aerial Photograph of the Main Area of the Site (Outlined in Red) and its Surrounding Habitats © Google



Figure 4b – Aerial Photo Including Spreadlands (Outlined in Orange).

WATER FEATURES AND QUALITY

The application site is located within the Shannon Estuary North Hydrometric Area (27) and Catchment (27), the Doonah Sub-catchment (010) and the Kiltrellig Sub-Basin (010). The application site is surrounded by drainage ditches and watercourses and there is an extensive network of drains on the lands that surround the site. These drainage ditches will ultimately discharge to the coastal waters surrounding Loop Head.

The EPA have not mapped or defined the ecological status of any of the watercourses that are close to the application site or its spreadlands. They have classed the Shannon Estuary (Coastal Waterbody:Mouth of the Shannon) as good ecological status. The coastal waters to the immediate west and north of Loop Head and along the Clare Coast are classed as high ecological status. Under the requirements of the Water Framework Directive, at least good ecological status must be maintained in these waterbodies within the time frame set out in the Directive.

The application site is also within the Kilrush groundwater body and the overall status of this groundwater body is good. This groundwater body is not currently considered to be *Not At Risk*.

The proposed land-spreading areas were also assessed in terms of their groundwater vulnerability. The groundwater vulnerability of the application site itself is noted to be extreme, whilst that of the mapped spreadlands varies from moderate to extreme / bedrock at surface. The site and its spreadlands are not located in a Source Protection Area and the Groundwater Protection Response Matrix for Land-spreading is therefore noted as R₁ in the areas of moderate to high vulnerability. This means that land-spreading is acceptable in these areas subject to normal good practice. In areas of extreme vulnerability, the Groundwater Protection Response Matrix is R₃¹ and in this case land-spreading can be done providing a consistent minimum thickness of 1m of soil and subsoil can be demonstrated. The location of the application site, spread-lands in relation to groundwater vulnerability is shown below in Figure 5.

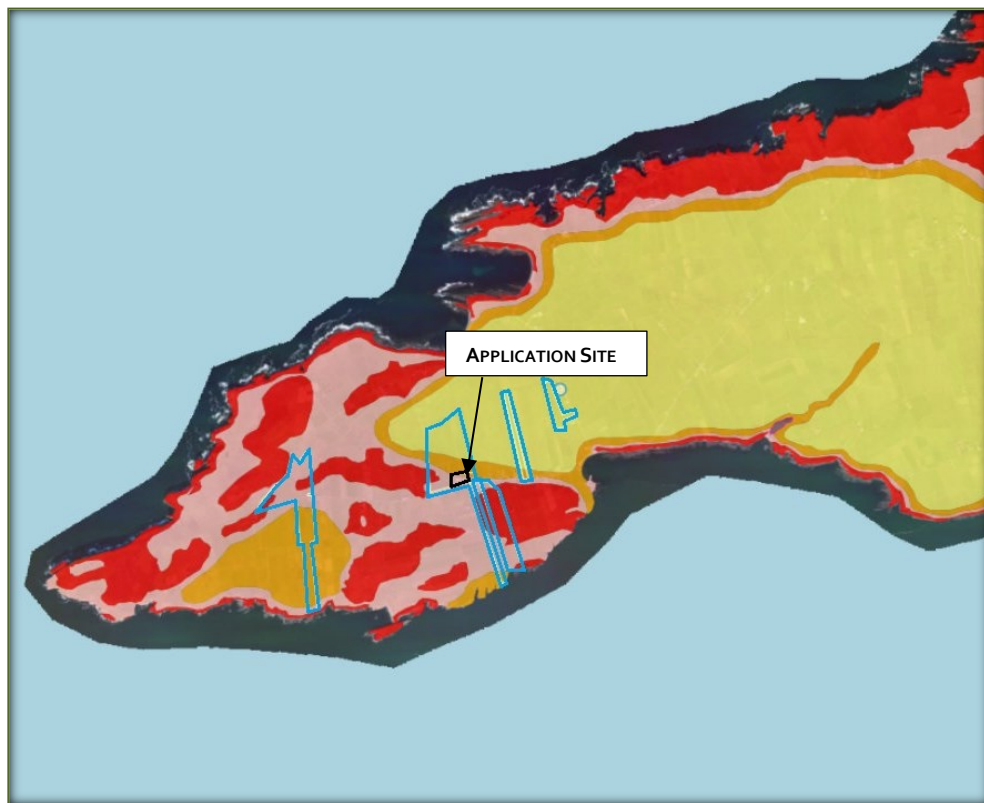


Figure 5 – Groundwater Vulnerability. Application Site (Outlined in Black) and Spreadlands (Outlined in Blue). Green = Low Vulnerability; Yellow = Moderate Vulnerability; Orange = High Vulnerability; Pink/Red = Extreme Vulnerability / Bedrock at Surface

3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are six Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the application site are summarised in Table 2 and maps showing their locations relative to the application site are shown in Figures 6 and 7. A full description of all these sites can be read on the website of the National Parks and Wildlife Service (npws.ie).

European Site		Distance	Qualifying Interests	Screened In / Out
Lower Shannon	River SAC	990m south Land-Spreading is Adjacent	- Sandbanks which are slightly covered by sea water all the time - Estuaries - Mudflats and sandflats not covered by seawater at low tide - Coastal lagoons - Large shallow inlets and bays - Reefs - Perennial vegetation of stony banks - Vegetated sea cliffs of the Atlantic and Baltic coasts - Salicornia and other annuals colonising mud and sand - Atlantic salt meadows (Glauco-Puccinellietalia maritima)	<i>Screened In - Potential impacts and subsequent effects are possible in this SAC due to potential source – pathway – receptor linkages between the application site, its spread-lands and the SAC and these effects can not be ruled out.</i>

		• Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) • <i>Petromyzon marinus</i> (Sea Lamprey) • <i>Lampetra planeri</i> (Brook Lamprey) • <i>Lampetra fluviatilis</i> (River Lamprey) • <i>Salmo salar</i> (Salmon) • <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) • <i>Lutra lutra</i> (Otter)	
Loop Head SPA 004119	2.4km south-west Land-Spreading is circa 600m east at its closest point	• Kittiwake (<i>Rissa tridactyla</i>) • Guillemot (<i>Uria aalge</i>)	Screened In - Potential impacts and subsequent effects are possible due to potential source – pathway – receptor linkages between the application site, its spread-lands and the SAC and these effects can not be ruled out.
Kilkee Reefs SAC 002265	12.7km north-east	• Large shallow inlets and bays • Reefs • Submerged or partially submerged sea caves	Screened Out – There is no connectivity between the application site, the spreadlands and this SAC and significant effects upon this SAC can be ruled out.
Kerry Head Shoal SAC 002263	10.4km south-west	• Reefs	Screened Out – There is no connectivity between the application site, the spreadlands and this SAC and significant effects upon this SAC can be ruled out.
Illelaunonearaun SPA 004114	13.5km north-east	• Barnacle goose <i>Branta leucopsis</i>	Screened Out – There is no connectivity between the application site, the spreadlands and this SPA and significant effects upon this SPA can be ruled out.
Kerry Head SPA 004189	14.3km south-east	• Fulmar (<i>Fulmarus glacialis</i>) • Chough (<i>Pyrrhocorax pyrrhocorax</i>)	Screened Out – There is no connectivity between the application site, the spreadlands and this SPA and

			<i>significant effects upon this SPA can be ruled out.</i>
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Table 2 – Designated Sites within 15km of the Application Site

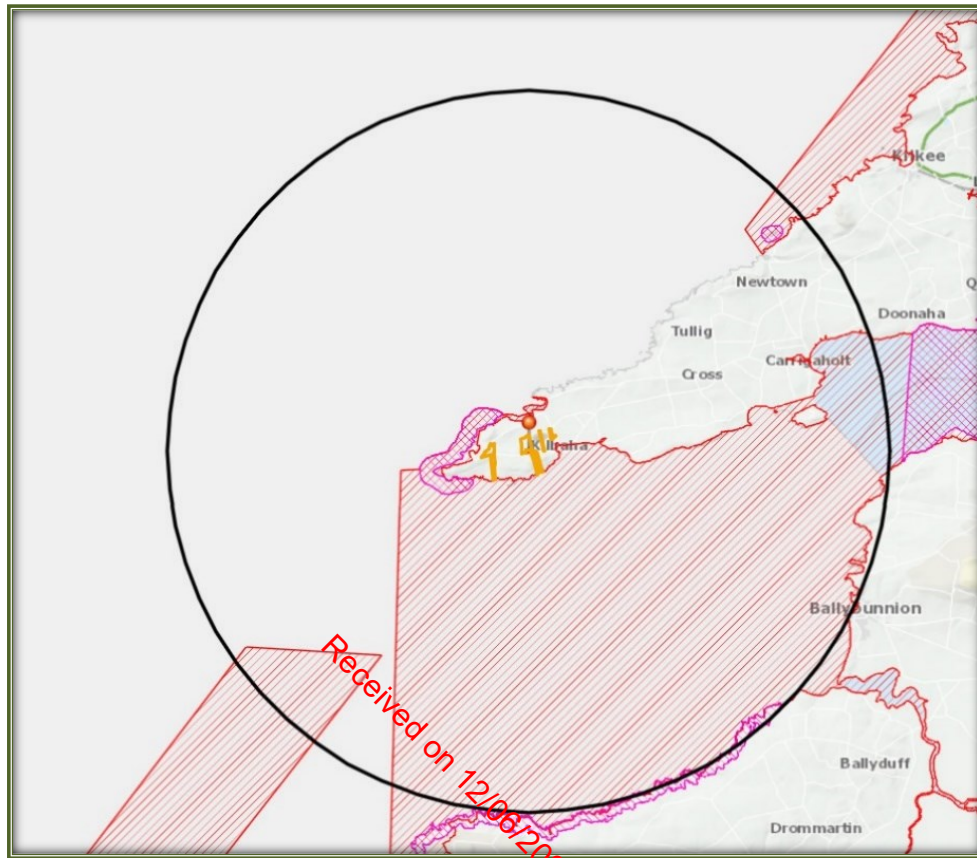


Figure 5 – The Application Site (Pinned) in relation to Natura 2000 Sites within 15km



Figure 6 – The Application Site (Pinned) in relation to the Lower River Shannon SAC (Red Hatching) and the Loop Head SPA (Pink Hatching). Spreadlands are Outlined in Orange.

3.4 IDENTIFICATION OF POTENTIAL EFFECTS

The proposed development at Kilbaha North will occur on lands that are within the Zone of Influence of the Lower River Shannon SAC and the Loop Head SPA. Following an evaluation of the relevant information including the characteristics of the proposed development, the groundwater vulnerability of the application site and the spreadlands and the likelihood of significant effects on European sites and with regards to the tenets of the precautionary principal, it is considered in the opinion of this author that it is not possible to exclude, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a likely significant effect on the above European sites.

As the development site is within the Zone of Influence of the SAC/SPA, potential significant effects upon Lower River Shannon SAC and the Loop Head SPA and their qualifying habitats and species arising from the construction and operation of this proposed development cannot be ruled out.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the identified Natura 2000 sites and protected species have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. The following areas were examined in relation to potential impacts from the proposed development on the Natura 2000 sites identified:

1. Deterioration of water quality in designated areas arising from pollution to surface water or ground water during site preparation and construction.
2. Deterioration of water quality in designated areas arising from pollution to surface water or ground water during site preparation and construction.
3. Deterioration in water quality in designated areas arising from the inappropriate land-spreading of the slurry / fertiliser.
4. Cumulative impacts with other proposed/existing developments.

3.5 ASSESSMENT OF SIGNIFICANCE

This section considers the list of sites identified in Section 3.3. It can be considered that all other sites with the exception of the Lower River Shannon SAC and the Loop Head SPA can be excluded from the Appropriate Assessment process. This is based on the separation distance between the application site and these areas, along with the lack of hydrological connectivity. The remaining concerns will therefore focus upon the protected habitats and species of the Lower River Shannon SAC and the Loop Head SPA.

3.6 SCREENING CONCLUSIONS

The proposed development is not directly connected with or necessary to the nature conservation management of the designated sites. Therefore, following consideration of the location of the Lower River Shannon SAC and the Loop Head SPA in relation to the proposed development at Kilbaha North and the potential effects that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

Received on 12/06/2026

4 STAGE II – APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the proposed development at Kilbaha North (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Lower River Shannon SAC and the Loop Head SPA with respect to these site's structures, species, functions and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive consent.

In this section, the Natura 2000 site identified in the previous section will be described in greater detail in terms of their site characteristics and conservation objectives.

4.2 NATURA 2000 SITES IDENTIFIED

LOWER RIVER SHANNON (SAC SITE CODE 0002165)

This site is a very large, long SAC approximately 14 km wide and 120 km long, encompassing: the drained river valley which forms the River Shannon estuary; the broader River Fergus estuary, plus a number of smaller estuaries e.g. Poulmasherry Bay; the freshwater lower reaches of the Shannon River, between Killaloe and Limerick, plus the freshwater stretches of much of the Feale and Mulkear catchments; a marine area at the mouth of the Shannon estuary with high rocky cliffs to the north and south; ericaceous heath on Kerry Head and Loop Head; and several lagoons. The underlying geology ranges from Carboniferous limestone (east of Foynes) to Namurian shales and flagstones (west of Foynes) to Old Red Sandstone (at Kerry Head). The salinity of the system varies daily with the ebb and flood of the tide and with annual rainfall fluctuations seasonally.

The site contains many Annexed habitats, including the most extensive area of estuarine habitat in Ireland. A good range of Annexed species are also present, including the only known resident population of the common bottlenose dolphin *Tursiops truncatus* in Ireland, all three Irish species of lamprey, and a good population of *Salmo salar*. A number of birds listed on the EU Birds Directive either winter or breed in the site. The site is internationally important for with more than 50,000 individuals occurring in winter. Several species listed in the Irish Red Data Book are present, perhaps most notably the only known Irish populations of *Scirpus triqueter*.

The full NPWS site synopsis for this SAC can be read on the website of the National Parks and Wildlife Service, along with the Site Specific Conservation Objectives for this site, the conservation objective supporting documents and the Natura 2000 standard data form. All these documents were referred to in the preparation of this NIS.

In 2012, the NPWS published Site Specific Conservation Objectives (SSCOs) for this SAC. These conservation objectives were also supported by a number of other documents relating to the marine, coastal, lagoon and woodland habitats and the watercourses of this large and complex SAC. In general, these SSCO's aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable condition for a habitat or species at a particular site. The restoration or maintenance of habitats and species within the Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. For the Lower River Shannon SAC, these SSCO's can be downloaded on the NPWS website. Arising from the proposed development at Clonmacken Road, any potential threats to the attributes and targets as defined in these SSCO's were assessed and where necessary, mitigated for.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or range of areas used by the species, other than that occurring from natural patterns of variation.

Qualifying Interests of the Lower River Shannon SAC

The Lower River Shannon SAC covers an extensive area of the south-west of Ireland. It is over 68,000 hectares in area and it has many qualifying interests and therefore there are certain qualifying interests within this SAC that will not be potentially impacted upon from this proposed development, either due to the distance involved or because they are features that are not sensitive to changes in water quality and are therefore outside of its Zone of Influence. Therefore, these features can be screened out from further AA assessment. All QIs of the SAC are listed below Table 3. They are screened in or out and rationale for this process is also outlined.

Qualifying Interest [Code]	Objective	Screened In / Out	Rationale
Freshwater pearl mussel <i>Margaritifera margaritifera</i> [1029]	To <i>restore</i> its favourable conservation condition	Out	Within this SAC, this species only occurs within the Cloon River in Co. Clare. It does not occur within the Zone of Influence of the application site as it is effectively upstream of any influences arising from the proposed development. Significant effects upon this species can be ruled out.
Sea lamprey <i>Petromyzon marinus</i> [1095]	To <i>restore</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site at the Shannon Estuary, significant effects upon this species arising from deteriorations in water quality cannot be ruled out.
Brook Lamprey <i>Lampetra planeri</i> [1096]	To <i>maintain</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site at the Shannon Estuary, significant effects upon this species arising from deteriorations in water quality cannot be ruled out.
River Lamprey <i>Lampetra fluviatilis</i> [1099]	To <i>maintain</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site at the Shannon Estuary, significant effects upon this species arising from deteriorations in water quality cannot be ruled out.
Salmon <i>Salmo salar</i> [1106]	To <i>restore</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site at the Shannon Estuary, significant effects upon this species arising from deteriorations in water quality cannot be ruled out.
Sandbanks which are slightly covered by sea water all the time [1110]	To <i>maintain</i> its favourable conservation condition	Out	Map 3 of the SSCOs illustrates the location of this QI in the SAC. It occurs approximately 6km east and hydrologically upstream of the application site. Its

			favourable conservation condition is not defined by any targets relating to water quality. Significant effects upon this QI can therefore be ruled out.
Estuaries [1130]	To <i>maintain</i> its favourable conservation condition	Out	Map 4 of the SSCOs illustrates the location of this habitat in the SAC. It is mapped as occurring as far west into the SAC as Kilrush, approximately 27km east and upstream of the application site. As this QI does not occur within the Zone of Influence of the application site, significant effects upon this QI can be ruled out.
Mudflats and sandflats not covered by seawater at low tide [1140]	To <i>maintain</i> its favourable conservation condition	In	Map 5 of the SSCOs indicates the potential presence of this habitat along the coast at points approximately 1km south and east of the application site. As this habitat occurs within the Zone of Influence of the application site, significant effects upon this habitat cannot be ruled out.
Coastal lagoons [1150]	To <i>restore</i> its favourable conservation condition	Out	Map 6 of the SSCOs illustrates the location of this QI in the SAC. The closest coastal lagoon to the site is known as Cloonconeen Pool and this is 11km west / upstream of the application site. Significant effects upon this QI will not arise.
Large shallow inlets and bays [1160]	To <i>maintain</i> its favourable conservation condition	In	Map 7 of the SSCOs maps this habitat as occurring in the most western part of the SAC, including at points south of Loop Head and close to the application site and its spreadlands. As this habitat occurs within the Zone of Influence of the application site, significant effects upon this habitat cannot be ruled out.
Reefs [1170]	To <i>maintain</i> its favourable conservation condition	In	Map 8 of the SSCOs maps this habitat as occurring in the coastal areas around Loop Head and close to the application site. As this habitat occurs within the Zone of Influence of the application site, significant effects upon this habitat cannot be ruled out.
Perennial vegetation of stony banks [1220]	To <i>maintain</i> its favourable conservation condition	In	Map 10 of the SSCOs illustrates the location of this QI in the SAC. Its closest known location is at the eastern end of Kilbaha Bay, approximately 2.5km east of and upstream of the application site. However, the extent of this habitat is not fully known in the SAC. It could potentially occur within the Zone of Influence of the application site and its spreadlands and therefore significant effects upon this QI cannot be ruled out.

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	To <i>maintain</i> its favourable conservation condition	In	Map 11 of the SSCOs illustrates the location of this QI in the SAC. NPWS have mapped this habitat at the cliffs in Kilbaha and to the south of the application site and spreadlands. As this QI occurs within the Zone of Influence of the application site and its spreadlands, significant effects upon this QI cannot be ruled out.
Salicornia and other annuals colonising mud and sand [1310]	To <i>maintain</i> its favourable conservation condition	Out	Map 12 of the SSCOs illustrates the location of this QI in the SAC. Its distribution is sparse and the closest mapped location to the application site is over 20km east. This QI is upstream of any influence of the application site and its spreadlands and significant effects upon this QI can be ruled out.
Atlantic salt meadows [1330]	To <i>restore</i> its favourable conservation condition	Out	Map 12 of the SSCOs illustrates the location of this QI in the SAC. The closest mapped location to the application site is over 10km east. This QI is upstream of any influence of the application site and its spreadlands and significant effects upon this QI can be ruled out.
Bottlenose dolphin <i>Tursiops truncatus</i> [1349]	To <i>maintain</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site (See Map 16 of SSCOs) and which may be affected by deteriorations in water quality, significant effects cannot be ruled out.
Otter <i>lutra lutra</i> [1355]	To <i>restore</i> its favourable conservation condition	In	As this is a water dependant species which potentially occurs within the Zone of Influence of this application site (See Map 17 of SSCOs) and which is affected by deteriorations in water quality, significant effects cannot be ruled out.
Mediterranean salt meadows [1410]	To <i>restore</i> its favourable conservation condition	Out	Map 12 of the SSCOs illustrates the location of this QI in the SAC. The closest mapped location to the application site is over 10km east. This QI is upstream of any influence of the application site and its spreadlands and significant effects upon this QI can be ruled out.
Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and Callitricho-Batrachion vegetation [3260]	To <i>maintain</i> its favourable conservation condition	Out	Map 13 of the SSCOs illustrates the location of this QI in the SAC. It occurs in the freshwater upper areas of the Shannon and also in the transitional waters. This habitat is over 70m east / upstream of the application site. Significant effects upon this QI will not arise.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils	To <i>maintain</i> its favourable conservation condition	Out	Full distribution of this habitat within the SAC is unknown, but it has been recorded on the eastern banks of the Shannon, just north of Castleconnell, Co. Limerick. It is

(<i>Molinia caerulea</i>) [6410]			unlikely to occur within the Zone of Influence of the application site and therefore significant effects upon this habitat can be ruled out.
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> [91E0]	To <i>restore</i> its favourable conservation condition	Out	Map 14 of the SSCO illustrates the location of this habitat within the SAC. It is found upstream of Limerick city and therefore it is outside of the Zone of Influence of the proposed development. Significant effects upon this QI can be ruled out.

Table 3 – The Qualifying Interests of the Lower River Shannon SAC

SSCOs of the Qualifying Interests

The additional attributes and targets which define the SSCO of the qualifying interests of the Lower River Shannon SAC which were screened into this AA are outlined below in Tables 4 – 14.

Sea Lamprey (1095)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: Extent of Anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from the estuary
Population: structure of juveniles	Number of age / size groups	At least three age / size groups present
Juvenile density in fine sediment	Juveniles / m ²	Juvenile density at least 1/m ²
Extent and distribution of spawning habitat	M ² and occurrence	No decline in extent and distribution of spawning beds.
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 4– SSCO for Sea Lamprey

River Lamprey (1099)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	Access to all watercourses down to first order streams
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of river lamprey present
Juvenile density in fine sediment	Juveniles / m ²	Mean catchment juvenile density of river lamprey at least 2/m ²
Extent and distribution of spawning habitat	M ² and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 5 – SSCOs for River Lamprey

Brook Lamprey (1096)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% of river accessible	Access to all watercourses down to first order streams
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of brook lamprey present
Juvenile density in fine sediment	Juveniles / m ²	Mean catchment juvenile density of brook lamprey at least 2/m ²
Extent and distribution of spawning habitat	M ² and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 6 – SSCOs for Brook Lamprey

Salmon (1106)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded
Salmon fry abundance	No of fry / 5 mins electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry / 5 minute sampling
Out-migrating smolt abundance	Number	No significant decline

Number and distribution of redds	Number and Occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes
Water quality	EPA Q Value	At least Q ₄ at all sites sampled by the EPA.

Table 7 – SSCOs for Salmon

Mudflats and sandflats not covered by seawater at low tide (1140)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Distribution	Hectares	Conserve the following community types in a natural condition: Intertidal sand with <i>Scolecipis squamata</i> and <i>Pontocrates</i> spp. community; and Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex

Table 8 – SSCOs for Mudflats and Sandflats not Covered by Seawater at Low Tide

Large Shallow Inlets and Bays [1460]

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Distribution	Hectares	Conserve the following community types in a natural condition: Intertidal sand with <i>Scolecipis squamata</i> and <i>Pontocrates</i> spp. community; Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex; Subtidal sand to mixed sediment with <i>Nucula nucleus</i> community complex; Subtidal sand to mixed sediment with <i>Nephtys</i> spp. community complex; Fucoid-dominated intertidal reef community complex; Mixed subtidal reef community complex; Faunal turf-dominated subtidal reef community; Anemone- dominated subtidal reef community; and <i>Laminaria</i> - dominated community complex.

Table 9 – SSCOs for Large Shallow Inlet and Bays

Reefs [1170]

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Distribution	Occurrence	The distribution of reefs is stable, subject to natural processes
Habitat Area	Hectares	The permanent habitat area is stable, subject to natural processes.
Community Distribution	Hectares	Conserve the following reef community types in a natural condition: Furoid-dominated intertidal reef community complex; Mixed subtidal reef community complex; Faunal turf-dominated subtidal reef community; Anemone-dominated subtidal reef community; and <i>Laminaria</i> -dominated community complex

Table 10 – SSCOs for Reefs

Perennial Vegetation of Stony Banks [1220]

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain the typical vegetated shingle flora including the range of sub- communities within the different zones
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover

Table 11 – SSCOs for Perennial Vegetation of Stony Banks

Vegetated Sea Cliffs of the Atlantic and Baltic Coasts [1230]

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat length	Kilometres	Area stable or increasing, subject to natural processes, including erosion. For sub- sites mapped: Kilbaha- 4.1km; Ladder Rock- 1.0km; Moyarta- 0.9km; Lisheencrony- 1.1km; Burrane- 0.2km; Kerry Head- 33.4km; Ballybunion- 15.6km; Kilclogher- 4.9km; Loop Head- 6.1km.
Habitat distribution	Occurrence	No decline, subject to natural processes.
Physical structure: functionality and hydrological regime	Occurrence of artificial barriers	No alteration to natural functioning of geomorphological and hydrological processes due to artificial structures
Vegetation structure: zonation	Occurrence	Maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in the Irish Sea cliff survey (Barron et al., 2011)
Vegetation composition: negative indicator species	Percentage	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation composition: bracken and woody species	Percentage	Cover of bracken (<i>Pteridium aquilinum</i>) on grassland and/or heath to be less than 10%. Cover of woody species on grassland and/or heath to be less than 20%

Table 12 – SSCOs for Vegetated Sea Cliffs

Bottlenose Dolphin (1349)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Access to suitable habitat	Number of Artificial Barriers	Species range within the site should not be restricted by artificial barriers to site use.
Habitat use: critical areas	Location and hectares	Critical areas, representing habitat use preferentially by bottlenose dolphin, should be maintained in a natural condition.
Disturbance	Level of Impact	Human activities should occur at levels that do not adversely affect the bottlenose dolphin population at the site.

Table 13 – SSCOs for Bottlenose Dolphin

Otter (1355)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 596.8ha above high water mark (HWM); 958.9ha along riverbanks / around ponds
Extent of Marine Habitats	Hectares	No significant decline. Area mapped and calculated as 4,461.6ha
Extent of Freshwater (River) Habitat	Km	No significant decline. Length mapped and calculated as 500.1km
Extent of Freshwater (Lake/Lagoon) Habitat	Hectares	No significant decline. Length mapped and calculated as 125.6ha
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline
Barriers to connectivity	Number	No significant increase

Table 14 – SSCOs for Otter

LOOP HEAD SPA 004119

Loop Head is situated at the most westerly point in Co. Clare, approximately 20 km south-west of Kilkee. The site includes the cliffs, shoreline and the adjacent marine area to a distance of 500 m from the shore. The vertical cliffs are impressive, rising to 60 m and extending for 5 km along the coast. They are composed of Carboniferous grits and flags and are highly exposed to the open Atlantic Ocean. A number of islets and stacks occur, notably Gull Island and Dermot & Grania's Rock. An automated lighthouse sits on the headland.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Kittiwake and Guillemot.

While much of the cliff face is unvegetated, a range of plant species typical of such cliffs are to be found, including Sea Campion (*Silene vulgaris subsp. maritima*), Thrift (*Armeria maritima*) and Rock Sea-spurrey (*Spergularia rupicola*). The cliff tops support a vegetation community that is very characteristic of exposed parts of the western seaboard, comprising of a short

'Plantago' sward of Sea Plantain (*Plantago maritima*) and Buck's-horn Plantain (*P. coronopus*), along with Thrift.

The cliffs support large numbers of breeding seabirds. The Kittiwake and Guillemot populations are of national importance. The site is also utilised by breeding Chough. Loop Head is also a traditional site for Peregrine.

Loop Head SPA is of high ornithological importance as it supports two seabird species, Kittiwake and Guillemot, with populations of national importance. Two species, Chough and Peregrine, which are listed on Annex I of the E.U. Birds Directive, breed here in small numbers.

Qualifying Interests of the Loop Head SPA

There are 2 bird species listed as Special Conservation Interests (SCIs) for this SPA. These species are water dependant and are therefore potentially likely to be indirectly affected by any deteriorations in water quality arising out of the construction and operation of the proposed developments. Therefore, it was considered prudent to screen all these SCIs into this AA process.

Site Specific Conservation Objectives

Site specific conservation objectives for this site were prepared in 2025¹. These SSCOs for each QI of the River Suck Callows are outlined in Tables 15 – 16 below.

Kittiwake *Rissa tridactyla* A188

This SSCO of this species is to *maintain* its favourable conservation condition in this SPA, which is defined by the following list of attributes and targets.

Attribute	Measure	Target
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA

Table 15 – SSCOs for Kittiwake

¹ NPWS (2025) Conservation Objectives: Loop Head SPA 004.119. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Guillemot *Uria aalge* A199

This SSCO of this species is to *maintain* its favourable conservation condition in this SPA, which is defined by the following list of attributes and targets.

Attribute	Measure	Target
Breeding population size	Individuals (IND)	Long term SPA population trend is stable or increasing
Productivity rate	Number of fledged young per breeding pair	Sufficient to maintain a stable or increasing population
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population
Barriers to connectivity	Number, location, shape, and area (ha)	Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA

Table 16 – SSCOs for Guillemot

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4.3 IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS

INTRODUCTION

The identification of potential impacts and the assessment of their significance typically requires the identification of the type and magnitude of the impacts. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation. This section will establish whether the impacts of the proposed development at Kilbaha North that were identified in the previous section, are likely to occur and whether or not they are significant. These potential impacts will be examined with respect to the conservation objectives of the Natura 2000 site identified.

In the screening section of this report, the following possible impacts upon the Natura 2000 sites were listed. These impacts are dealt with in greater detail below.

1. Deterioration of water quality in designated areas arising from pollution to surface water or ground water during site preparation and construction.
2. Deterioration of water quality in designated areas arising from pollution to surface water or ground water during site preparation and construction.
3. Deterioration in water quality in designated areas arising from the inappropriate land-spreading of the slurry / fertiliser.
4. Cumulative impacts with other proposed/existing developments.

DETERIORATION IN WATER QUALITY IN THE SAC DURING SITE PREPARATION/CONSTRUCTION

The construction of the new farm structures and associated works will involve the excavation of soil and the pouring of concrete. These works will take place on a site that has extreme groundwater vulnerability and there are also land drain that are close to the proposed site that lead to the coastal habitats and QIs of the Lower River Shannon SAC and the Loop Head SPA. If appropriate mitigation measures are not taken during construction and operation of the proposed development, then there is the possibility that water quality in these rivers and subsequently downstream in the SAC/SPA may be negatively impacted upon. Possible direct impacts include the pollution of the waters during construction with silt, oil, cement, hydraulic fluid etc. This would directly affect the habitat of protected species by reducing water quality. These substances would also have a toxic effect on the ecology of the water in general, directly affecting certain species and their food supplies.

Therefore, as there is a potential risk of direct and indirect impacts arising from the site preparation and construction of the proposed application, appropriate mitigation will be

required to maintain the conservation status of the QIs of the Lower River Shannon SAC and the Loop Head SPA and its protected habitats and species.

DETERIORATION IN WATER QUALITY IN THE SAC POST CONSTRUCTION / OPERATION

Negative impacts upon water quality in the Lower River Shannon SAC and the Loop Head SPA arising from the operation of this proposed development have also been considered. The most likely source of pollution during the operation of the development is slurry contaminated surface water run-off from the farmyard. In addition, any structural weaknesses in the effluent tanks on site could lead to impacts upon groundwater, which has vulnerability rating of extreme underneath the site. Groundwater quality can impact upon surface water quality as these two resources mix at the hyporheic zone, which is the region just under a river or stream bed where there is a mixing of shallow ground water and surface water. Mitigation measures to prevent surface water run-off from contaminating the local watercourses will need to be undertaken and all structures will have to be leak proof.

LAND-SPREADING

Inappropriate land-spreading of manure can lead to serious impacts upon the receiving waters in local catchments and it can result in eutrophication, algal blooms, fish kills and loss of biodiversity. Designated habitats and species can be impacted upon and it can take years for the eco-system to recover. This is an even greater risk when groundwater vulnerability at the spreadlands is high/extreme, or when land-spreading is undertaken close to drains or streams. In these situations, the Pollution Impact Potential for both phosphates and / or nitrates is high.

CUMULATIVE IMPACTS

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first; through persistent additions or losses of the same materials or resource, and second, -through the compounding effects as a result of the coming together of two or more effects (Bowers-Marriott, 1997).

To make an overview assessment of cumulative impacts, an examination was made of other planning applications granted within the Kilbaha North townland for the past five years. In this time, three other applications were permitted:

- 23/27 - To remove part of existing dwelling and to construct, renovate and extend remaining structure, construct domestic garage and revise site boundaries plus all ancillary site works. This was screened for AA in the Planner's Report and significant effects were ruled out.

- 23/60095 - Construction of a straw storage shed and all associated siteworks. This application was also by John Walsh at the same farm site. Granted by An Bord Pleanála in June 2024. This was screened for AA in the Planner's Report and significant effects were ruled out.
- 24/60134 - For partial demolition of existing old silage pit and construction of a calf shed & underground effluent tank and all associated siteworks. This application was also by John Walsh at the same farm site. Granted in September 2024. An NIS accompanied this application (also prepared by Whitehill Environmental) and this NIS concluded that the integrity of the Natura 2000 sites would be maintained with the mitigation. The applicant confirmed that all mitigation measures included in this NIS were implemented at the time of construction and that he continues to commit to ongoing mitigation during the continued operation of the farm.

For future applications, the Local Authority must ensure that any development that has the potential to impact upon the Lower River Shannon SAC / Loop Head SPA be screened competently for Appropriate Assessment. With the implementation of the mitigation measures contained herein, this current application will have no cumulative impacts upon the SAC /SPA when considered in combination with other developments that are adequately screened or where mitigation measures have been included as part of a Natura Impact Assessment.

Cumulative impacts with agricultural activities in the area have been considered. As these activities are required to operate within the legalisation defined in S.I. 588 of 2025 regarding manure storage, minimisation of soiled water and general good agricultural practice, etc., cumulative impacts arising from the combined operation of these activities with the operation of the proposed farm at Kilbaha North will be negligible.

5 MITIGATION MEASURES

In order to avoid any reductions in water quality in the area surrounding the application site in Kilbaha North a number of mitigation measures must be implemented and followed. These measures will protect the water quality and integrity of the Lower River Shannon SAC and the Loop Head SPA and any other local watercourses. Measures have also been suggested that will help to protect the local biodiversity of the surrounding area and to ensure the protection of local wildlife. The implementation of these site-specific mitigation measures will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors.

The applicant confirmed that mitigation measures contained in the NIS for application no 24/60134 were implemented in full. It is recommended that a record of the mitigation measures contained in this NIS is kept and presented to the Local Authority if needed.

Pre-Construction and General Requirements

- Site preparation and construction must be confined to the development site only and it must adhere to all the mitigation measures outlined in this NIS. Work areas should be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works.
- Prior to the commencement of developments on site, the site engineer and the contractors must be made aware of the ecological sensitivity of the site and its connection to the Lower River Shannon SAC and the Loop Head SPA. They must be made familiar with the mitigation measures outlined in this NIS report and a signed statement saying that they have read and this NIS and that they take on board the mitigation measures contained herein should be presented to the local authority along with the Notice of Commencement. The applicant will be responsible for alerting the engineers and contractors to the sensitivity of the habitats and water receptors surrounding the site. This will be done prior to the commencement of any site works.
- The construction and operation of the proposed development must comply with the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2017 (S.I. 588 of 2025).
- Guidelines within the Department of Agriculture's Explanatory Handbook for Good Agricultural Practice Regulations must also be followed.

Site Specific Requirements – Construction

- Manure, slurry and soiled water storage facilities should be constructed to Department of Agriculture, Food and The Marine specifications with leak detection facilities underneath. They should be certified by an engineer before use and inspected regularly.
- There must be no discharges of contaminated waters to ground or surface waters from this development, either during the construction or operation of the development. The control and management of hydrocarbons on site will be vital to prevent deteriorations in surface and groundwater quality locally. This is especially important considering the extreme groundwater vulnerability rating of the site. The following measures must be employed on site:
 - Re-fuelling of equipment and machinery should be done off site. If this is not possible, then a dedicated re-fuelling location should be established on site in the compound area away from ground clearance or rock-breaking activities.
 - Spill kits stations must be provided at the fuelling location for the duration of the works.
 - Staff must be provided with training on spill control and the use of spill kits.
 - All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.
 - All chemicals must be stored as per manufacturer's instructions. A dedicated chemical bund must be provided on site if chemicals are to be stored on site. Any chemicals used on site must be returned to the site compound and secured in a lockable and sealed container overnight in proximity to the fuel storage area.
 - Procedures and contingency plans must be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms must be kept on site, on plant working near the water and at the refuelling area.
 - Daily plant inspections must be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the applicant should remove the plant from operations for repairs.
 - All personnel shall observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.

- Best practice concrete / aggregate management measures must also be employed on site.
 - It is important that run-off from the construction works does not enter the drains surrounding the site. Therefore, it is recommended that prior to the commencement of all works, that silt fences are to surround the construction works area. The silt fences should be sturdy and constructed of a suitable geotextile membrane to ensure that water can pass through, but that silt will be retained. An interceptor trench will be required in front of this silt fence. The silt fence must be capable of preventing particles of 425µm from passing through. Straw bales could also be used as an effective measure to prevent the movement of silt from the works into the local watercourses.
 - The silt fences must be monitored daily to ensure that they remain functional throughout the construction of the proposed development. Maintenance of the fences should must be carried out regularly. Fences must be inspected thoroughly after periods of heavy rainfall.
 - The washing out of concrete trucks or chutes on site must be avoided. If this cannot be avoided, then a designated concrete wash out area should be set up on site; typically, this will involve washing the chutes, pumps into a designated IBC before removing the waste water off site for disposal.
 - Best practice in bulk-liquid concrete management must be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.
 - Stockpile areas for sands and gravel must be kept to a minimum size, well away from the drain on site.
 - Where concrete shuttering is used, measures should be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
 - Activities which result in the creation of cement dust should be controlled by dampening down the areas.
 - Raw and uncured waste concrete should be disposed of by removal from the site;
 - Stockpile areas for sands and gravel must be kept to a minimum size.
- All construction waste must be removed from site by a registered contractor to a registered site. Evidence of the movement and safe disposal of the construction waste will be retained and presented to Local Authority upon request. The applicants and construction contractors will be responsible for the safe removal of any construction waste generated on site. There must be no disposal of construction waste or spoil in areas outside of the application site.

Farm Operation and Land-Spreading

The following measures must be adhered to during the operation the site:

- The storage and handling of all wastes and fertilisers on site must be in accordance with S.I. 588 of 2025.
- All drains, gullies and manholes should be regularly cleaned, kept free from debris and inspected to ensure they are functioning correctly.
- Areas of cracks/stress in concrete should be repaired/sealed to prevent soiled water infiltrating down into the subsoil/aquifer.
- Leak detection systems should be monitored on a weekly basis for all new slurry tanks.
- Fuels/oils should be handled and stored with care to avoid spillage or leakage.
- Where re-fuelling of agricultural machinery will take place onsite, re-fuelling should be undertaken within a paved concrete area away from drains.
- All pesticides, animal medicines, chemicals and cleaning products should be stored in a sealed, lockable cabinet.

In order to avoid any reductions in water quality within the catchment as a whole, all organic fertiliser must be used in accordance with S.I. 588 of 2025 European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2025). The following measures **must** be implemented at the applicant's farm on an ongoing basis.

- During operation, there must be no soiled water run-off into any local drain or watercourse. All water must be managed as per the Grasstec plan. Only clean roof water should be discharged to local drains and this must not be allowed to become contaminated with soiled yard water at any stage.
- The access of livestock to local watercourses for drinking should be eliminated or kept to a minimum. The riparian zone of the watercourses should be fenced off to prevent access for livestock.
- Manure must only be spread on lands that have a requirement for it and in accordance with the Nutrient Management Plan for the farm and in accordance with S.I. 588 of 2025.

- All silt drains and farm yard discharge must be in accordance with the specifications within the Department of Agriculture's "Minimum specification for Farmyard Drainage, Concrete Yards and Roads".
- Manure must not be spread in areas where bedrock occurs at the surface. Manure should not be spread in areas of extreme groundwater vulnerability unless a consistent minimum thickness of soil and subsoil (3m) is demonstrated according to the Geological Survey Ireland Response Matrix for Landspreading."
- The amount of livestock manure applied in any year to land on a holding, together with that deposited to land by livestock, shall not exceed an amount containing 170 kg nitrogen per hectare.
- There must be no land-spreading within any SAC / SPA.
- To avoid contamination of the local watercourses in areas identified for land-spreading, a minimum buffer zone of 10m for any main river channels and 5m for smaller watercourses must be adhered to at all times during the application of effluent. Buffer zones should be increased depending on the gradient of the land. *In addition, when the waterbody is with 1km upstream of a water dependent designated site (SAC / SPA) the buffer for a river should be increased to 20m while a stream should be increased to 10m.*
- Manure must not be applied within 3m of open field drains or ditches in accordance with Good Agricultural Practice for Protection of Waters 2025. The applicant is cognisant of these required buffers and these drains are currently fenced off.
- Land spreading must only take place when suitable climatic and environmental conditions exist. Spreading must be avoided on:
 - wet or waterlogged soils
 - land sloping steeply towards water courses
 - frozen or snow covered soils
- Effluent must not be applied in proximity of hedgerows and field margins. This will maintain the biodiversity of these areas and allow for a more natural ecological corridor.
- The spreading of any organic fertiliser during certain times of the year is prohibited (The prohibited spreading period, generally between Mid-October and Mid-January).
- The applicant must keep within the overall maximum fertilisation rates for nitrogen and phosphorus.
- The applicant must have sufficient storage capacity to meet the minimum requirements of the regulations.
- All storage facilities must be kept leak proof and structurally sound.

- Records for the movement of fertilisers must be kept.
- Chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water must be spread as accurately and as evenly as possible.
- An upward-facing splash plate or sludge irrigator on a tanker or umbilical system must not be used for the spreading of organic fertiliser or soiled water.
- Chemical fertilisers, livestock manure, soiled water or other organic fertilisers must not be spread when:
 - The land is waterlogged;
 - The land is flooded, or it is likely to flood;
 - The land is frozen, or covered with snow;
 - Heavy rain is forecast within 48 hours;
 - The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- Chemical fertilisers must not be spread on land within 2 metres of a surface watercourse.
- Soiled water, effluents, farmyard manures or other organic fertilisers must not be spread inside the buffer zones specified in S.I. 588 of 2025.
 - Any water supply source providing 100m³ or more of water per day, or serving 500 or more people – 200m;
 - Any water supply source providing 10m³ or more of water per day, or serving 50 people or more – 100m;
 - Any other water supply for human consumption – 25m;
 - Lake shoreline or a turlough likely to flow – 25m;
 - Exposed cavernous or karstified limestones features – 15m;
 - Any surface watercourse where the slope towards the watercourse exceeds 10% - 10m;
 - Any other surface waters – 5m.
- The applicant has land-holdings adjacent to a number of watercourses. The opportunity exists here for the creation of natural riparian buffer zones which will have positive impacts on biodiversity and water quality. Natural buffer zones along watercourses are the main impediment to the movement of silt into these watercourses and silt is known to be the most significant ecological stresser of watercourses.

6 CONCLUSIONS

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the Lower River Shannon SAC and the Loop Head SPA. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon natural eutrophic lakes, there will be no loss or disturbances to any habitat that is used by the otter and there will be no direct or indirect impacts upon the bird species that use the lake.

In light of the above, it is considered that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of Lower River Shannon SAC and the Loop Head SPA. The integrity of the site will not be adversely affected. Table 13 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	Yes / No
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	N

Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	N
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

Table 5 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002))

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(PI Insurance details available on request)

Appendix I: REFERENCES AND FURTHER READING

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