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**NATURA IMPACT STATEMENT OF AN APPLICATION FOR A
LICENCE AT DOON, ARAGLIN, CO TIPPERARY
(EPA LICENSE REVIEW NO. P1024-02)**



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1 INTRODUCTION

1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT

This Natura Impact Assessment was prepared to accompany an EPA License Review for a pig farm at Doon, Araglin, Co. Tipperary [P1024-02]. It followed on from an Appropriate Assessment Screening Determination initially made by the EPA in April 2020 regarding this License application. This NIS was subsequently updated following a Request for Further Information made by the EPA in April 2023.

Having regard to the location of the application site and its proximity to certain sites designated under the Natura 2000 network, an Appropriate Assessment of the proposed development was prepared in accordance with Article 6 of the Habitats Directive.

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 ecological impact 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 THIS 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 potential impacts of the atmospheric emissions from a pig farm at Doon, Araglin, Co. Tipperary on designated European 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 ecological impacts of this application was carried out initially in October 2021 (subsequently revised in 2023 and 2024) 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 associated with the proposed development to be assessed and mitigated for. This NIS was revised in January 2023 and March 2023.

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).

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.

2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This NIS 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 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.

2.2 STATEMENT OF COMPETENCY

This NIS report 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 eighteen years. Noreen has over 20 years' experience as a professional ecologist in 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, correspondence from the EPA regarding this License application;
- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- CLW Environmental Planners / Irwin Carr Consulting – Site plans, development description and information on potential emissions.
- Tipperary 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 (Zol) of the proposed development was defined. Based on the potential impacts and their Zol, 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 DESCRIPTION OF THE PROPOSED PROJECT

3.1 PROJECT DESCRIPTION

OVERVIEW

In 2017, Doon Farm Enterprises applied to the EPA for a License Review (Reg. No. P1024-02), in respect of an existing pig farm at Doon, Araglin, Co. Tipperary. The EPA Class of Activity (6.2) relates to “The rearing of pigs in an installation where the capacity exceeds (b) 2,000 places for production pigs which are each over 30kg”. The pig farm will operate as a 500 sow integrated pig farm. An extract from the planning drawings can be seen in Figure 1.

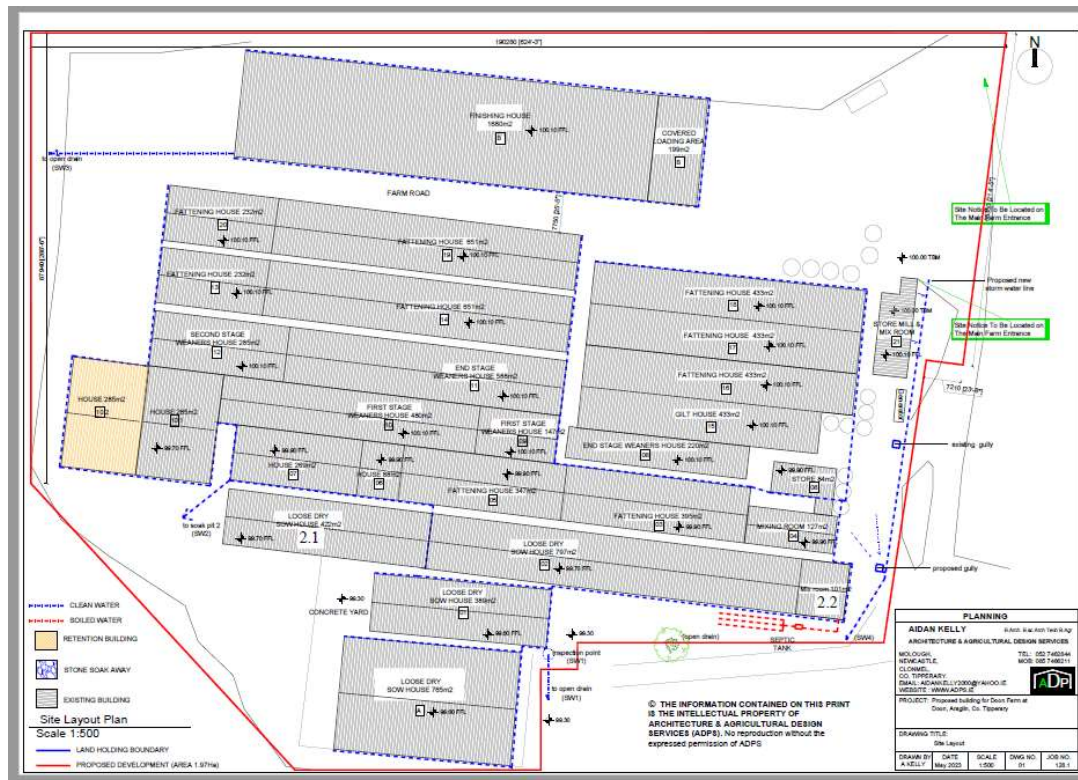


Figure 1 – Existing Site Survey of Application Site (as prepared by Aiden Kelly)

The main activities carried out at this facility involve the rearing and feeding of pigs, and it operates as a fully integrated pig farm. The installation currently consists of animal houses, ancillary structures and all equipment necessary for the accommodation, management and husbandry of the animals, along with the administration of the enterprise. This farm has been operational for many years.

The main emissions from the pig farm include pig manure, clean surface water, soiled water and atmospheric emissions. The pig manure produced on site will be utilised as a fertiliser on local farms for the purposes of efficient grass / crop production in accordance with S.I. 113 of 2022. Records for the movement of all manure will be kept on site. Clean roof water will be discharged to local watercourses and soiled water will be directed to storage tanks prior to its application on suitable landholdings.

S.I. 113 OF 2022

The European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 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. 113 of 2022.

Prior to its approval, a Natura Impact Statement was prepared for the Nitrates Action Programme (NAP) by RPS (2022). This Natura Impact Statement considered the potential of the measures proposed within the NAP to give rise to adverse effects on the integrity of European Sites, with regard to their qualifying interests, associated conservation status and the overall site integrity, alone and in combination with other relevant plans and programmes. The NIS concluded that the adoption of the NAP will not adversely affect the integrity of any European Site either alone or in combination with other relevant plans or programmes and subject to securing the mitigation measures prescribed in the NIS.

The applicant is fully aware of his obligations under S.I. 113 of 2022 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 located in a rural area within the townland of Doon. The site area is circa 2 hectares and it is accessed via an existing agricultural laneway that is just off a local, third-class road. The site is 4.3km east of Araglin and 4.7km north-west of Ballysaggart. The site is on the southern foothills of the Knockmealdown Mountain Range.

Land-use surrounding the site is predominantly agricultural and the main habitat in the lands surrounding the site is improved agricultural grassland. Other habitats represented locally include areas of wet grassland, unimproved grassland, coniferous woodlands, scrub, rough grasslands and heath, hedgerows, treelines and water courses. Site location maps can be seen in Figures 2 and 3, whilst an aerial photograph of the site and its surrounding habitats can be seen in Figure 4.

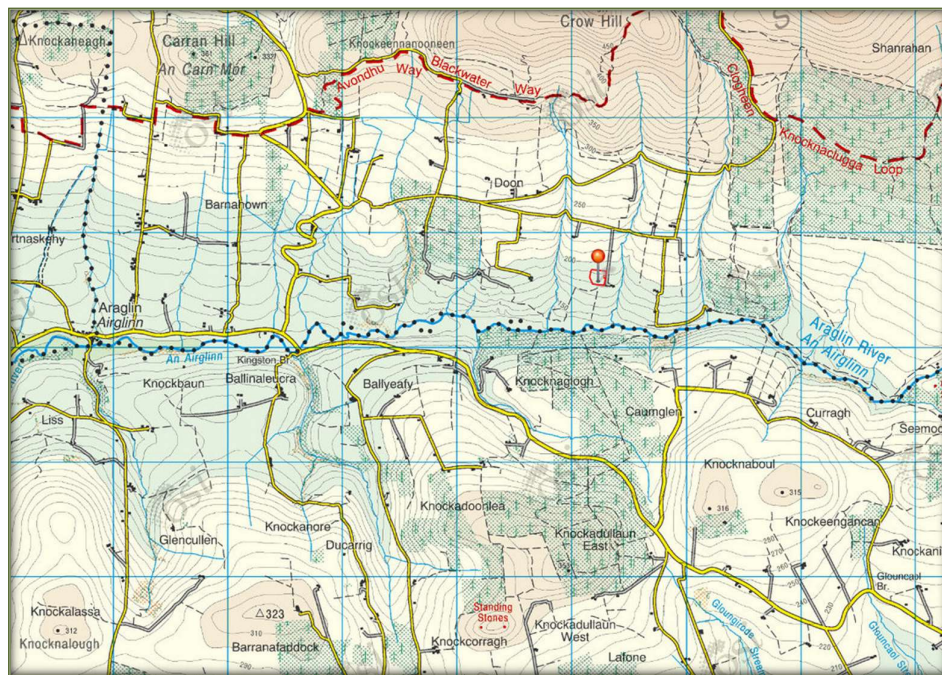


Figure 2 – Map showing the Location of the Proposed Development Site (Pinned)

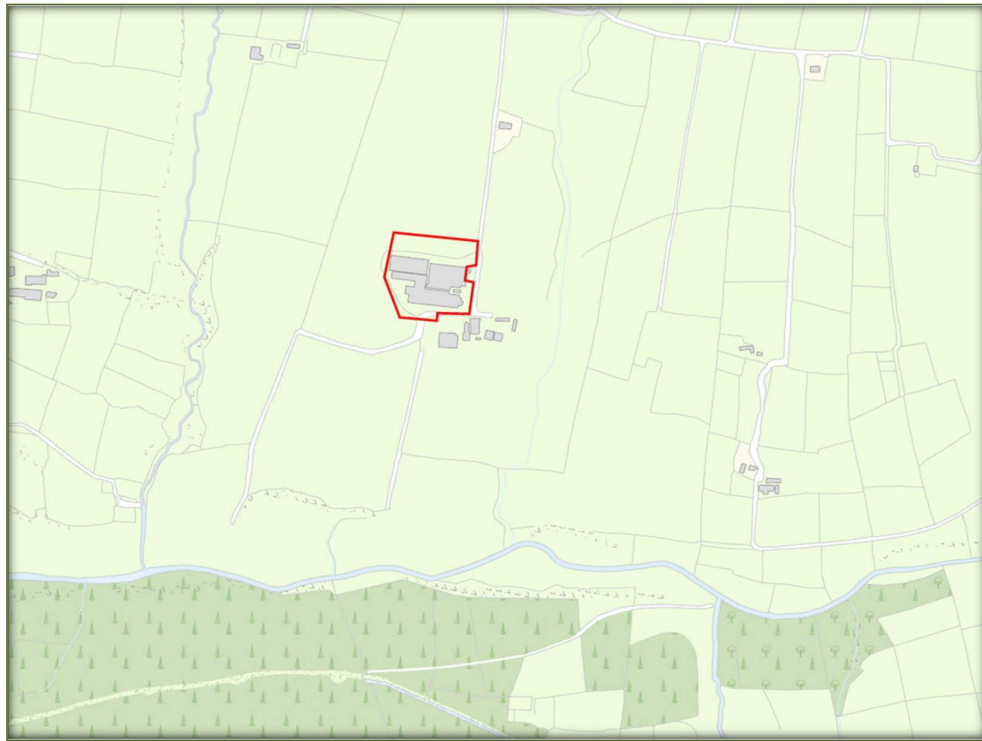


Figure 3 – Map showing the Location of the Proposed Development Site (Outlined in Red)

HABITATS AND SPECIES

The application site is not within or adjacent to any site that has been designated for nature conservation purposes. The site is dominated by buildings and artificial surfaces (the existing buildings and hard surfaces). There is a small area of improved agricultural grassland in the north-eastern corner of the site. The boundaries of the site are not defined by any natural features.

An examination of the website of the National Biodiversity Data Centre revealed that there are no records for the presence of any protected mammal species from within the relevant one km² (R9706) of this proposed development.

WATER FEATURES AND QUALITY

The application site lies within the Blackwater (Munster) Hydrometric Area and Catchment, the Crinnaghtane Sub-Catchment and the Araglin Sub-Basin. There are surface water features close to the application site, including a stream which is 136m east of the site and another which is 289m west of the site. Both these streams flow south to join the Araglin River, which is 380m south of the site. Clean surface water from the site will be directed to land drains with connectivity to this river.

The Araglin River flows west / south-west for 18km, until its confluence with the River Blackwater east of Fermoy.

The EPA have defined the ecological status of the Araglin River and its tributaries at points close to the application site as good. Under the requirements of the Water Framework Directive in Ireland, this status is satisfactory and it must be maintained.



Figure 4 – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats.

4 NATURA 2000 SITES IDENTIFIED

4.1 DESIGNATED SITES

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopsis, 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.

There are three Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the sheds within the proposed development are summarised in Table 2 and a map showing their locations relative to the application site is shown in Figure 5. A full description of these sites can be read on the websites of the National Parks and Wildlife Service (npws.ie),

Site Name & Code	Distance	Qualifying Interests	Possible Impacts?
Blackwater River (Cork/Waterford) SAC 002170	2.6km west	<ul style="list-style-type: none"> • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Perennial vegetation of stony banks • Salicornia and other annuals colonising mud and sand • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and Callitricho-Batrachion vegetation • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) 	<i>Potential significant effects upon this SAC and its QIs arising from atmospheric emissions will be considered further.</i>

		<ul style="list-style-type: none"> • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) • <i>Austropotamobius pallipes</i> (White-clawed Crayfish) • <i>Petromyzon marinus</i> (Sea Lamprey) • <i>Lampetra planeri</i> (Brook Lamprey) • <i>Lampetra fluviatilis</i> (River Lamprey) • <i>Alosa fallax fallax</i> (Twaite Shad) • <i>Salmo salar</i> (Salmon) • <i>Lutra lutra</i> (Otter) • <i>Trichomanes speciosum</i> (Killarney Fern) 	
Lower River Suir SAC 002137	6.4km north	<ul style="list-style-type: none"> • Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and Callitricho-Batrachion vegetation [3260] • Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] • <i>Taxus baccata</i> woods of the British Isles [91Jo] • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] • <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092] 	<i>Potential significant effects upon this SAC and its QIs arising from atmospheric emissions will be considered further.</i>

		<ul style="list-style-type: none"> • <i>Petromyzon marinus</i> (Sea Lamprey) [1095] • <i>Lampetra planeri</i> (Brook Lamprey) [1096] • <i>Lampetra fluviatilis</i> (River Lamprey) [1099] • <i>Alosa fallax fallax</i> (Twaité Shad) [1103] • <i>Salmo salar</i> (Salmon) [1106] • <i>Lutra lutra</i> (Otter) [1355] 	
Blackwater Callows SPA 004094	7km south	<ul style="list-style-type: none"> • Whooper Swan (<i>Cygnus cygnus</i>) • Wigeon (<i>Anas penelope</i>) • Teal (<i>Anas crecca</i>) • Black-tailed Godwit (<i>Limosa limosa</i>) • Wetland and Waterbirds 	<i>Potential significant effects upon this SPA and its QIs arising from atmospheric emissions will be considered further.</i>

Table 2 – Natura 2000 Sites Within 15km of the Proposed Site

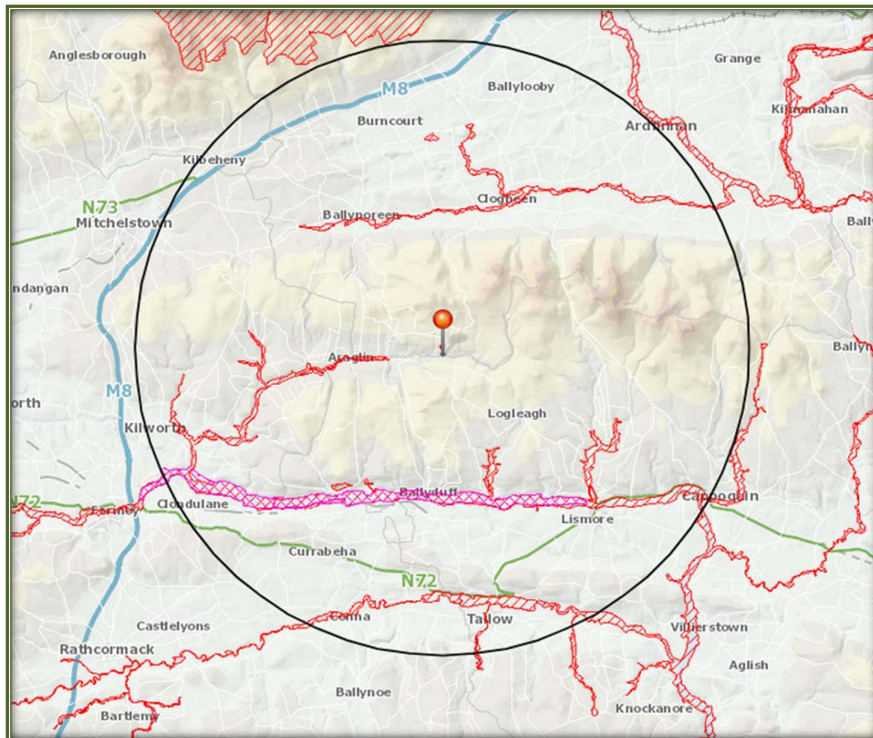


Figure 5 – The Application Site in relation to the Natura 2000 sites. SPAs – Vertical Hatching. SACs – Brown Shading.

5 IDENTIFICATION AND ASSESSMENT OF POTENTIAL IMPACTS

5.1 INTRODUCTION

An Appropriate Assessment Screening undertaken by the EPA (21/4/2020) identified the following impacts:

- *Air emissions have been modelled by the Agency using a screen model (SCAIL Agriculture). The model results indicated that the potential for adverse impact of emissions to air and their consequential potential impact on sensitive receptors cannot be ruled out due to elevated ammonia emissions and/or nitrogen deposition at European sites.*

In general, 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 Doon that were identified by the EPA in their screening report 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 their screening report, the EPA identified the following sites as having the potential to be impacted upon from the proposed development:

- Blackwater River (Cork/Waterford) SAC 002170 – 2.6km west
- Lower River Suir SAC 002137 – 6.4km north
- Blackwater Callows SPA 004094 – 7km south
- Galtee Mountains SAC 000646 – 15km north
- Nier Valley Woodlands SAC 000668 – 23km north-east

In a previous iteration of this NIS, potential effects upon these sites arising from atmospheric emissions were assessed using a SCAIL model. However, a subsequent request from the EPA regarding this license application determined that detailed atmospheric modelling was required and this was undertaken in January 2024 by Irwin Carr Consulting.

AMMONIA

Dispersion Modelling

In order to correctly assess the potential impacts of the operation of the farm on the Natura 2000 sites, detailed atmospheric modelling of the proposed development was undertaken by Irwin Carr Consulting in January 2024. The overall purpose of this report was to quantify the ammonia and nitrogen levels at the ecologically sensitive areas in the vicinity of the proposed pig farm. The predicted impacts can then be compared to an appropriate criterion and

graphically illustrated in the form of “contours of equal concentration” or isopleths which are superimposed on base maps.

Using an AERMOD Dispersion Modelling Package, the projected ammonia and nitrogen emissions from the proposed development at Ballynakill were modelled using details such as animals per house and the ventilation currently used in the house. Other factors taken into consideration as part of the model included meteorological data, building downwash, storage of manure (assuming full storage) and digital terrain data.

The report provided the annual average ammonia concentrations at ecologically sensitive sites, including the Natura 2000 sites considered as part of this assessment. The results are presented in Table 3, whilst Table 4 provides an assessment of the process contribution for ammonia on the Natura 2000 sites arising from the proposed development. For the purpose of this report, Natura 2000 sites beyond 7.5km from the sheds were screened out from further assessment. These Natura 2000 sites included:

- Blackwater River (Cork / Waterford) SAC
- Lower River Suir SAC
- Blackwater Callos SAC
- Blackwater River (Cork / Waterford) SAC South

Two locations were included for 'Blackwater River (Cork/Waterford) (SAC) to account for the closest point of that receptor in two directions (See Figure 5).

In addition, given that the predicted levels of ammonia and nitrogen are expected to be negligible at distances greater than 7.5km from the site, no detailed emission assessment for the Galtee Mountains SAC or the Nier Valley Woodlands SAC were undertaken.

Ammonia

The emission report provides the annual average ammonia concentrations (worst case scenario) arising from the farm at ecologically sensitive sites, including the Natura 2000 sites considered as part of this assessment. Ammonia modelling was carried out for the years 2016 – 2020 and an average figure was presented. The results are presented in Table 3, whilst Table 4 takes the highest predicted process concentration from the sheds and it uses this figure to determine the percentage contribution of the farm to the critical load of the designated site. These results are based on the worst case scenario, i.e., the worst case process contribution over the 5-year period.

It should be noted that for the purpose of this assessment, the Blackwater River Cork /Waterford SAC was considered as two separate areas, i.e., the ammonia sensitive areas and the non-sensitive areas. The most sensitive ammonia habitat in the SAC is the Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles. Map 7 of the Site Specific Conservation Objectives¹ for this SAC has illustrated the location of this habitat within the SAC. It is noted to occur close to the waterfall along the Glenmore River, at a point approximately 5.3km south of the site (Line 4 in table 3).

Natura 2000 Site	2016	2017	2018	2019	2020	Average
Blackwater River (Cork / Waterford) SAC	0.0113	0.0065	0.0075	0.0064	0.0089	0.0081
Lower River Suir SAC	0.0034	0.0034	0.0038	0.0041	0.0027	0.0035
Blackwater Callows SPA	0.0026	0.0024	0.0026	0.0023	0.0033	0.0026
Blackwater River (Cork / Waterford) SAC South	0.0038	0.0038	0.0032	0.0033	0.0032	0.0035

Table 3 – Ammonia Concentrations ($\mu\text{g}/\text{m}^3$) at Natura 2000 Sites (Taken from Table 16 Of Ammonia Impact Assessment Report)

All of the predicted ground level concentrations of ammonia detailed above are significantly below the limit values in relation to the protection of vegetation.

¹ NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

Natura 2000 Site	Critical Load Guideline	Background	Highest PC	PEC	PC / Guideline Level (%)	PEC / Guideline Level (%)
Blackwater River (Cork / Waterford) SAC	3	2.44	0.0113	2.45125	0.38	82
Lower River Suir SAC	3	2.46	0.0041	2.4341	0.14	82
Blackwater Callows SPA	3	3.02	0.0033	3.0233	0.11	101
Blackwater River (Cork / Waterford) SAC South	1	2.26	0.0038	2.2638	0.38	226

Table 4 – Ammonia Concentrations ($\mu\text{g}/\text{m}^3$) at Natura 2000 Sites – Predicted Impacts from the Proposed Development (Taken from Table 17 Of Ammonia Impact Assessment Report)

It can be seen from the Table 4 above that the ammonia concentrations at the sites are dominated by the background concentrations, which are approximately 75 – 226% of the air quality guideline for ammonia

Nitrogen

The AERMOD modelling also report provides an estimate of nitrogen arising from the proposed pig farm. A summary is provided in Table 5. This is based on a worst case scenario and the figure generated for the Highest PC for N at these sites was generated using a conversion factor.

Natura 2000 Site	Guideline	Background	Highest PC	PEC	PC / Guideline Level (%)	PEC / Guideline Level (%)
Blackwater River (Cork / Waterford) SAC	10	2.59	0.059	2.65	0.59	26
Lower River Suir SAC	3	12.78	0.021	12.80	0.70	427
Blackwater Callos SAC	10	7.95	0.017	7.97	0.17	80
Blackwater River (Cork / Waterford) SAC South	3	7.26	0.020	7.28	0.66	243

Table 5 – Nitrogen Concentrations ($\text{kg}/\text{N}/\text{ha}/\text{yr}$) at Natura 2000 Sites – Predicted Impacts from the Proposed Development (Taken from Table 20 Of Ammonia Impact Assessment Report)

It can be seen from Table 5 that the nitrogen concentrations at the sites are dominated by the background concentrations, which are approximately 26 – 427% of the guideline (critical load)

for each site. The PC at all Locations is less than 0.3kg.N/ha/yr, and as a result would be considered deminimus for the purposes of the Nitrogen assessment.

AERMOD Conclusions

It can be concluded that the predicted results of the ammonia modelling process show that the limits for the protection of vegetation are not exceeded at the designated habitats within the vicinity of the pig farm. Thus, any areas of ecological interest will not be adversely affected from the ammonia emissions during the operation of the proposed farm.

Annex 1: Flow Chart

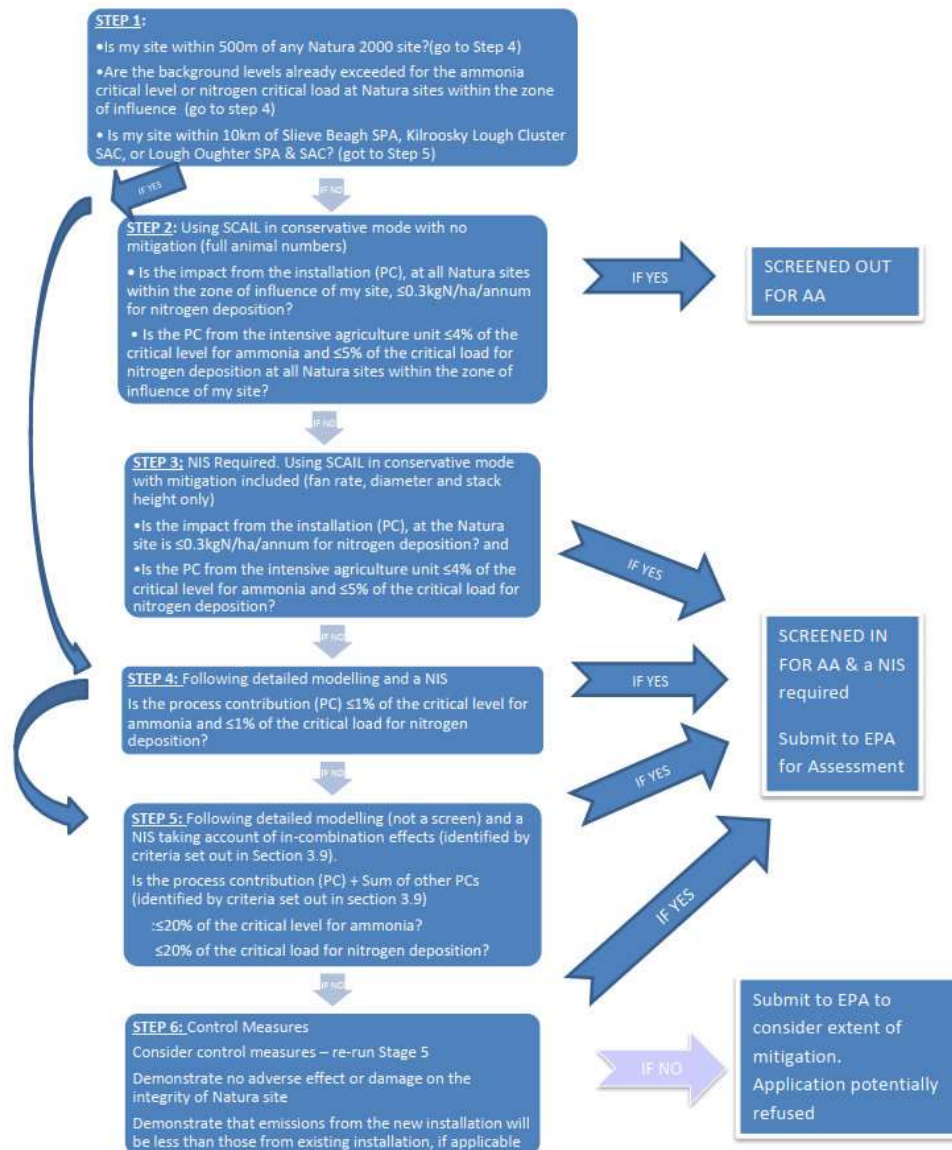


Figure 6 – EPA Flow Chart, Taken from Annex I of the Assessment of the Impact of Ammonia and Nitrogen on Natura 2000 sites from Intensive Agriculture Installations, EPA 2021

5.2 CUMULATIVE IMPACTS

There are other agricultural activities ongoing close to the current application site, therefore cumulative impacts arising from the operation of these farms together were considered. All farms, regardless of whether licensed by the EPA or not, are required to operate within the legalisation defined in S.I. 113 of 2022 regarding manure storage, minimisation of soiled water and general good agricultural practice, etc. Therefore, cumulative impacts arising from the combined operation of these activities with the proposed operation of the pig farm at Doon will be negligible.

The Ammonia Impact Assessment report has also considered potential cumulative impacts. Within the EPA Guidance (See Figure 6), specific information is provided in relation to the consideration of Cumulative Impact Assessments. Section 3.2 notes that,

'As a first step the applicant/licensee should confirm the background ammonia concentrations and nitrogen deposition levels at the sensitive receptor and indicate whether there is already an exceedance of the ammonia critical level or nitrogen critical load. Where background levels are already exceeded at sensitive receptors, detailed modelling of emissions, including in-combination effects, a Natura Impact Statement (NIS) and additional mitigation measures are likely to be required. This is dependent on the sensitivity of the habitat at the Natura impacted area.'

Annex 1 of the document shows a flowchart (Figure 6) for undertaking a cumulative impact assessment of a nearby industrial installation. The following points detail whether or not a cumulative assessment is necessary as part of this assessment, taking account of the flowchart:

- It is noted that Step 1 of the flowchart states "Are the background levels already exceeded for the ammonia critical level or nitrogen critical load at Natura sites within the zone of influence? (Go to step 4)

It can be seen from Table 5 above that the Critical Levels are already exceeded at two of the Natura 2000 sites (Lower River Suir SAC and Blackwater River (Cork/Waterford) SAC (South), and therefore the assessment continues to Step 4:

- *Following detailed modelling and a NIS, is the process contribution (PC) $\leq 1\%$ of the critical level for ammonia and $\leq 1\%$ of the critical load for nitrogen deposition?' It can be seen from Tables 4 & 5 that the total ammonia / nitrogen at all locations is less than 1% and as a result, a cumulative assessment is not required at these locations. Taking*

into account the points above, a cumulative/ in-combination assessment is not required for this application.

The land-spreading of the pig manure produced at the proposed facility has also been considered as part of this process. Records for the distribution and movement of all the manure produced will be kept on site and presented to the Department of Agriculture, Food and Marine if necessary. All organic fertiliser will replace the use of chemical fertiliser; therefore there will be no overall increase in the amount of nutrients spread.

All farmers that receive the manure from the proposed farm will do so under the European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2017 (S.I. 605 of 2017). Upon the receipt of the manure, they will be informed of their obligation under this legalisation. Compliance with these regulations will minimise cumulative impacts as well as any impacts

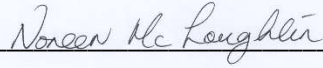
6 MITIGATION MEASURES

In order to minimise emissions from the pig facility at Doon and in order to protect certain designated sites and species, a number of mitigation measures must be implemented and followed. 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.

- Techniques for the reduction of emissions from the pig houses must be employed on the farm. These are outlined in the document *Best Available Techniques Reference Document for the Intensive Rearing of Poultry or Pigs* (http://eippcb.jrc.ec.europa.eu/reference/BREF/IRPP/JRC107189_IRPP_Bref_2017_publiched.pdf).
- The continued operation of the farm should be done in accordance with S.I. 113 of 2022 having regards to the storage and use of the manure produced on the farm.
- Only clean surface water should be discharged to local watercourses.
- The applicant must follow the guidelines set out in the Department of Agriculture's *Explanatory Handbook for Good Agricultural Practice Regulations*.

7 NIS CONCLUSIONS

This Natura Impact Statement has concluded that the continued operation of the pig farm at Doon will not lead to any significant impacts upon the designated sites identified.



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