Screening for Appropriate Assessment

Technical Amendment to an Industrial Emissions Licence at the Nutricia manufacturing facility in Macroom, Co. Cork

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Executive Summary

This *Screening for Appropriate Assessment* report has been prepared by NM Ecology Ltd on behalf of Nutricia Infant Nutrition Ltd (the applicant) regarding a technical amendment to an Industrial Emissions Licence for a manufacturing facility near Macroom in Co. Cork. The applicant has received planning permission to upgrade their on-site waste water treatment plant, which will improve treatment performance and reduce the concentrations of emissions. Two amendments will be required to the applicant's Industrial Emissions Licence regarding emissions to water: the addition of an Emission Limit Value (ELV) for Total Nitrogen, and a reduction in the concentration ELVs of a number of parameters. The ELV for total particulates ('dust') to air will also be reduced.

In accordance with their obligations under the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011), the competent authority must assess whether the proposed amendment could have 'likely significant effects' on any European designated sites. This document provides supporting information to assist the competent authority with an Appropriate Assessment screening exercise, including: a description of the proposed development, details of its environmental setting, a map and list of European sites within the potential zone of impact, and consideration of potential source-pathway-receptor links.

The proposed development site is not located within or adjacent to any European sites. The closest European sites are *The Gearagh* SAC and *The Gearagh* SPA, which are located 0.3 km and 1.8 km from the proposed development site, respectively. Potential pathways for indirect impacts on these and other European sites were considered, but none were found. Therefore, we conclude that the proposed development will not cause direct or indirect impacts on any European sites, and that Appropriate Assessment is not required.

1 Introduction

1.1 Background to Appropriate Assessment

Approximately 10% of the land area of Ireland is included in the European Network of Natura 2000 sites (hereafter referred to as European sites), which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect a range of habitats and species. Legislative protection for these sites is provided by the *European Council Birds Directive* (79/409/EEC) and *E.C. Habitats Directive* (92/43/EEC, as amended), which are jointly transposed into Irish law by the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011, as amended).

Regulation 42 (1) states that: "*Screening for Appropriate Assessment of a plan or project for which an application for consent is received* […] *shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on* [any European sites]." To ensure compliance with this regulation, planning authorities must screen all planning applications for potential impacts on European sites. Supporting information may be requested from the applicant to assist with this process.

This document provides background information to assist the planning authority with a *Screening for Appropriate Assessment* exercise for the proposed development. It includes a description of the proposed development, a review of the Site's environmental setting, details of European sites within the potential zone of impact, an appraisal of *source-pathway-receptor* relationships, and an assessment of potential impacts.

1.2 Statement of authority

This report was written by Nick Marchant, the principal ecologist of NM Ecology Ltd. He has an MSc in Ecosystem Conservation and Landscape Management from NUI Galway and a BSc in Environmental Science from Queens University Belfast. He is a member of the Chartered Institute of Ecology and Environmental Management, and operates in accordance with their code of professional conduct.

He has fifteen years of professional experience, including twelve years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He provides ecological assessments for developments throughout Ireland and Northern Ireland, including wind farms, infrastructural projects (roads, water pipelines, greenways, etc.), and a range of residential and commercial developments.

1.3 Methods

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

- *OPR Practice Note PN01: Appropriate Assessment Screening for Development Management* (Office of the Planning Regulator 2021)
- *Appropriate Assessment of Plans and Projects in Ireland* (Department of the Environment, Heritage and Local Government, 2009)
- *Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive* 92/43/EEC, 2021
- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (Chartered Institute of Ecology and Environmental Management, 2018)

In accordance with Section 3.2 of *Appropriate Assessment of Plans and Projects in Ireland*, a screening exercise comprises the following steps:

- Description of the project and local site characteristics
- Review of European sites in the surrounding area, using the source-pathway-receptor model to identify potential impacts
- Where pathways exist, a preliminary impact assessment is carried out, including:
  - Direct impacts (e.g. loss of habitat area, fragmentation)
  - Indirect impacts (e.g. disturbance of fauna, pollution of surface water)
  - Cumulative / 'in-combination' effects associated with other concurrent projects
- Screening Statement with conclusions

A desk-based study was carried out using data from the following sources:

- Plans and specifications for the proposed development
- Qualifying interests / conservation objectives of European sites from www.npws.ie
- Bedrock, soil, subsoil, surface water and ground water maps from the Geological Survey of Ireland webmapping service (dcenr.maps.arcgis.com), the National Biodiversity Data Centre (http://maps.biodiversityireland.ie/), and the Environmental Protection Agency web viewer (gis.epa.ie/EPAMaps/)
- The *Cork County Development Plan* 2022 – 2028, and details of permitted or proposed developments from the local authority's online planning records

Desktop data from internet resources was accessed in January 2023.

2 Description of the Project

2.1 Environmental setting

Site location and surroundings

The proposed development site (hereafter referred to as the Site) is located in a rural setting approximately 2.8km south of Macroom, Co. Cork. It is a large-scale dairy processing facility, including a factory / warehouse, storage tanks, vehicle loading areas, and other related features. The surrounding area is characterised by arable fields, pastures and one-off rural dwellings.

Geology and soils

The underlying geology is a mixture of sandstone and siltstone, which are locally-important and poor bedrock aquifers, respectively. The subsoil is sandstone till, and soils are a combination of made ground and fine loam.

Hydrology

The Site is located approx. 350 m from the Carrigadrohid Reservoir, which is a linear lake of approx. 12 km length. The waterbody is of artificial origin, created by the construction of a dam and power station at its eastern end. It is formed by the main channels of the River Lee (which flows in from the west) and the Sullane River (which approaches from the north, via Macroom). To the north-west of the Site the reservoir covers an area of floodplain and former primeval woodland known as 'The Gearagh'.

Under the Water Framework Directive Status assessments 2016 – 2021, the Carrigadrohid Reservoir is of Moderate status, as is the River Lee upstream of The Gearagh. The Sullane River (and associated tributaries) ranges from Good to High status along its course. The River Lee downstream of the Carrigadrohid dam is of Good status.

3 Existing and Proposed Development

3.1 Overview of existing facility and planning consents

The Nutricia facility at Macroom processes raw milk to make powdered infant formula and other dairy products. The facility was initially constructed in 1979, and the site was acquired by Nutricia in 1995 and converted to its current use.

A number of extensions to the facility have been approved, notably a major extension that was granted planning permission in 2020 (Cork County Council Planning Reference 19/6869). It was accompanied by an Appropriate Assessment Screening Report prepared by Panther Environmental Solutions Ltd, which supported the Appropriate Assessment screening carried

out by Cork County Council as part of the planning consent process. The following was concluded in Cork County Council's planning reports:

> *"There is no direct hydrological linkage to the Gearagh from the Nutricia Plant, as all surface and waste water outputs are discharged under license to the river downstream of these sites, and the abstraction area for water supply is also located downstream of these sites…*
>
> *On the basis of this, I am satisfied that there is no risk of the proposed development giving rise to negative effects on the qualifying interests of either the SAC or the SPA".*

Waste Water Treatment

Liquid waste products are treated in an on-site waste water treatment system, which is an extended aeration activated-sludge plant with simultaneous nitrification and denitrification processes. Treated effluent is discharged to the River Lee / Carrigadrohid Reservoir at Farranavarrigane, approximately 800 m north of the Site.

The applicant was granted planning permission in 2022 for an upgrade to the waste water treatment system (Cork County Council planning reference 22/5922), including the construction of a concrete anoxic tank and the installation of an additional aeration system to the oxidation ditch. Cork County Council carried out screening for Appropriate Assessment of the proposed works as part of the planning consent process. The following was concluded in Cork County Council's planning report:

> *"I am satisfied that there is no risk of the proposed development giving rise to negative effects on the qualifying interests of either the SAC or the SPA or any other Natura 2000 site and therefore screens out from the Requirement to carry out a Stage 2 Appropriate Assessment."*

Emissions to air

The production of infant formula requires the drying of milk to create powder. The drying process produces fine dust particles, which are emitted to air via a filter.

3.2 Industrial Emissions licence

Emissions to water and air are monitored under an Industrial Emissions (IE) licence issued by the Environmental Protection Agency (EPA). Under the terms of their IE licence, the applicant submits monthly monitoring data and annual summary reports to the EPA (licence number P0792-02). The licence specifies Emission Limit Values (ELVs) to water for key parameters such as pH, temperature, Biological Oxygen Demand, Suspended Sediments, Ammonia, etc. It also includes an Emission Limit Value for total particulates to air. Any exceedances of these values are outlined in the monthly submissions, and actions are required to prevent recurrences of these exceedances.

3.3 Proposed technical amendment to Industrial Emissions licence

The upgrade to the waste water treatment system will improve treatment efficacy, and will consequently facilitate the net reduction of maximum permitted emissions to water for all parameters in the IEL. Following discussion with the Environmental Protection Agency, the applicant intends to make the following technical amendments to Schedule 2 of the IEL:

- Include Total Nitrogen as a parameter in Schedule B.2; and
- Reduce the concentration ELVs in Schedule B.2 as per the proposed WWTP upgrade.

The current and revised ELVs for each parameter are outlined in Table 1. It is important to note that there will be no net increase in mass emissions from the emission point as a result of the proposed amendment. No changes to the following elements of Schedule B.2 are proposed:

- Maximum permitted daily and hourly volumetric flows.
- Maximum permitted temperature or the pH range.
- Mass emission limit values (i.e. kg/d) for BOD, TP or Ammonia.

Table 1: Emission Limit Values (ELVs) in the applicants Industrial Emissions licence. The current and revised ELVs are compared, and the change between the values is presented

Parameter	Current ELV	Revised ELV	Change
BOD	15	10	33% reduction
COD	70	50	29% reduction
Suspended Solids	25	15	40% reduction
Orthophosphate (as P)	1.0	0.8	20% reduction
Total Phosphorus (as P)	1.5	1	33% reduction
Total Nitrogen	-	15	New parameter
Total Oxidised Nitrogen	15	10	33% reduction
Ammonia (as N)	2	1	50% reduction
Oils, fats and greases	10	8	20% reduction
Mineral Oils	1	0.5	50% reduction

In addition, following changes to the milk drying process, the applicant intends to reduce emissions to air of total particulates from the current limit of 50 mg/m^3 to 10 mg/m^3.

The proposed changes will ensure that the facility is in compliance with the European Parliament Directive 2010/75/EU regarding best available techniques (BAT) conclusions for the food, drink and milk industries.

As part of the IEL amendment process it is necessary to carry out screening for Appropriate Assessment, and that is the purpose of this document.

4 Description of European sites

4.1 Identification of European sites within the zone of influence

The Site is not within or adjacent to any European sites. The closest site European site is *The Gearagh* SAC, which is located approx. 300 m west of the Site. Potential indirect impacts on this and other European sites were considered using the source-pathway-receptor model. Details of relevant sites are presented in Table 2, and their locations are shown in Figure 1. A buffer zone of 5km is presented in Figure 1 to assist with the interpretation of scale.

Table 2: European sites of relevance to this assessment

Site Name	Distance	Qualifying Interests
The Gearagh SAC (site code 108)	0.3 km west	**Annex I habitats:** water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation, Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation, Old sessile oak woods with Ilex and Blechnum in the British Isles, Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) **Annex II species:** otter
The Gearagh SPA (4109)	1.8 km west	**Key habitats:** shallow lake and seasonally flooded islands **Special Conservation Interests:** wigeon, teal, mallard, coot
Mullaghanish to Musheramore Mountains SPA (4162)	9.5 km north-west	**Key habitats:** upland habitats including immature conifer plantation and blanket bog **Special Conservation Interests:** hen harrier

4.2 Conservation objectives

The standard conservation objective for all SACs and SPAs in Ireland is "*to maintain or restore the favourable conservation condition of the qualifying interests for which the SAC / SPA has been selected*". In addition, the Department of Housing, Local Government and Heritage has produced detailed conservation objectives for the European sites listed in Table 1. They can be viewed on the website of the National Parks and Wildlife Service (http://www.npws.ie/protected-sites), but are not reproduced here in the interests of brevity.

Figure 1	European sites
Location	Inchinashingane, Macroom
Applicant	Nutricia Infant Nutrition Ltd
Date	20-01-2023

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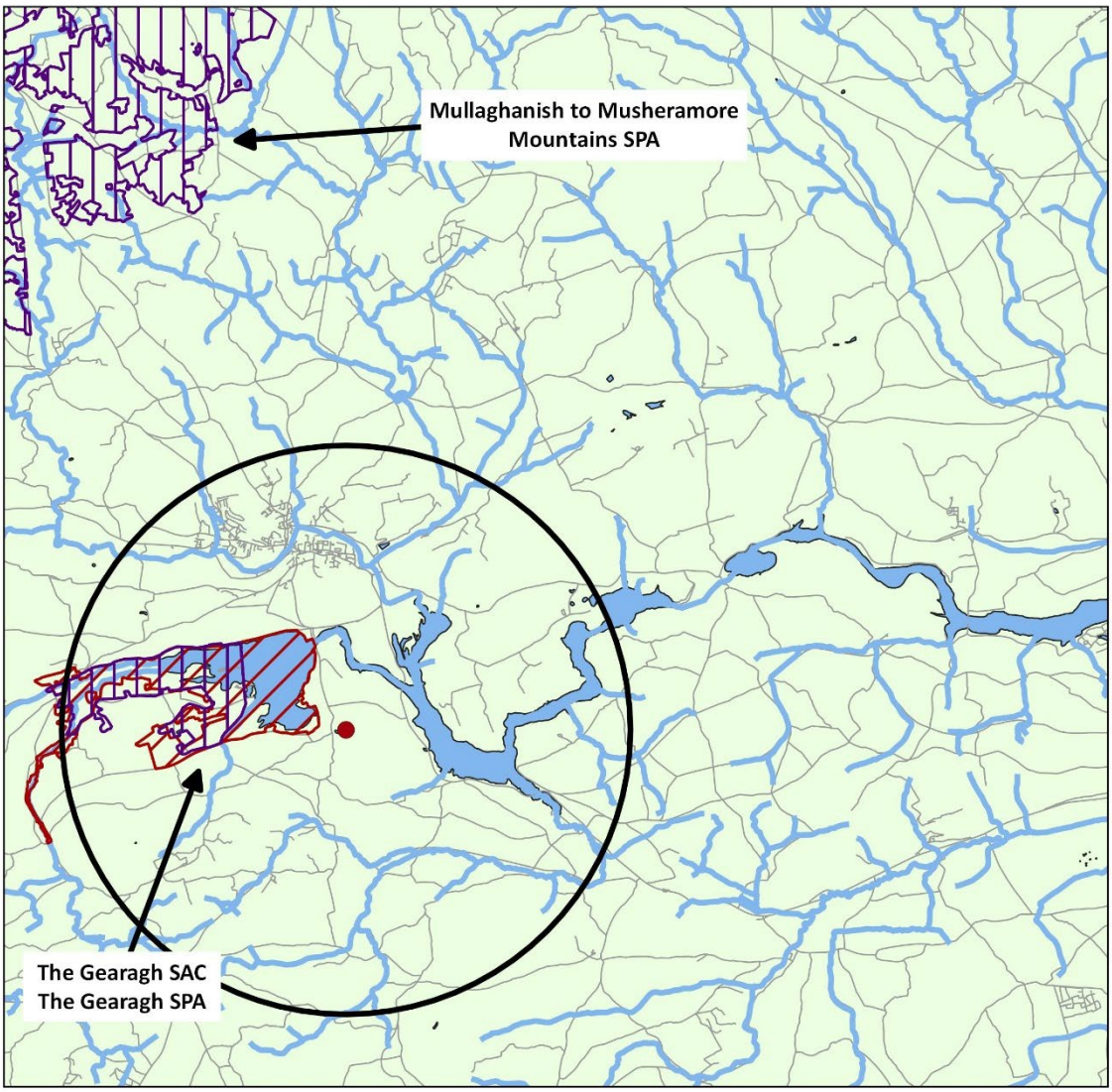
Site location
- Proposed development site
- Buffer zone (5km)
- Roads
- Watercourses

Designated sites
- Special Areas of Conservation
- Special Protection Areas



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0 1 2 3 4 5 km

4.3 Identification of potential pathways for indirect impacts

Indirect impacts can occur if there is a viable pathway between the source (the Site) and the receptor (the habitats and species for which a European site has been designated). The most common pathway for impacts is surface water, e.g. if a pollutant is washed into a river and carried downstream into a European site. Other potential pathways are groundwater, air (e.g. airborne dust or sound waves), or land (e.g. flow of liquids, vibration). The zone of effect for hydrological impacts can be several kilometres, but for air and land it is rarely more than one hundred metres. An appraisal of potential pathways to European sites is provided below.

The Gearagh SAC and *The Gearagh* SPA are located 0.3 km and 1.8 km west of the Site, respectively. As there is considerable overlap between these sites, potential pathways for impacts are considered here in combination. A surface water pathway between the Site and the SAC / SPA can be ruled out because treated effluent from the waste water treatment system is discharged to the River Lee / Carrigadrohid Reservoir downstream of The Gearagh; this means that the flow of the watercourse will carry the treated effluent away from the SAC / SPA. A pathway via air can be ruled out due to distance. The proposed development will not involve any discharge to groundwater or land, so these pathways can be ruled out.

The *Mullaghanish to Musheramore Mountains* SPA is located 9.5 km north-west of the Site. It is an upland area that has been designated for the protection of key habitats for hen harriers. A surface water pathway can be ruled out because the SPA is located upstream and at a higher altitude than the Site's effluent discharge point. A pathway via air can be ruled out due to distance. The proposed development will not involve any discharge to groundwater or land, so these pathways can be ruled out.

The River Lee flows east past the Site and reaches the coast near Cork City. Some tidal / coastal habitats at the mouth of the river have been designated as part of the *Cork Harbour* SPA due to their important for over-wintering migratory birds. However, the total hydrological distance between the Site and the SPA is approx. 44 km: over this distance the concentration of any pollutants would be reduced to negligible concentrations before they could reach the SPA, so a surface water pathway can be ruled out. Pathways via groundwater, land and air can also be ruled out due to distance.

In summary, no potential pathways were identified to any European sites.

5 Conclusion of Stage 1: Screening Statement

In Section 3 of *Appropriate Assessment Screening for Development Management* (OPR 2021), it is stated that the first stage of the AA process can have two possible conclusions:

1. **No likelihood of significant effects**: Appropriate assessment is not required and the proposal can proceed as normal. Documentation of the screening process including

conclusions reached and the basis on which decisions were made must be kept on the planning file.

2. **Significant effects cannot be excluded**: Appropriate assessment is required before permission can be granted. A Natura Impact Statement (NIS) will be required in order for the project to proceed.

Having considered the particulars of the proposed development, we conclude that this application meets the first conclusion, because there are no European sites in the immediate vicinity of the Site, nor any pathways for indirect impacts on any other European sites. Therefore, with regard to Article 42 (7) of the *European Communities (Birds and Natural Habitats) Regulations 2011*, it can be excluded on the basis of objective scientific information following screening, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site. Appropriate Assessment is not required.

In accordance with the OPR 2021 guidance, we note that no mitigation measures have been considered when reaching this conclusion.

References

Chartered Institute of Ecology and Environmental Management, 2018. *Guidelines for Ecological Impact Assessment in the U.K and Ireland: Terrestrial, Freshwater, Coastal* and Marine (2nd Edition). C.I.E.E.M., Hampshire, England.

Department of the Environment, Heritage and Local Government, 2009. *Appropriate Assessment of Plans and Projects in Ireland.* National Parks and Wildlife Service, DAHG, Dublin, Ireland.

European Commission. 2021. *Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg.

Office of the Planning Regulator 2021. *Practice Note PN01: Appropriate Assessment Screening for Development Management*. Available online at opr.ie