Appropriate Assessment Report and Determination for Maritime Usage Licence Application

From

Aughinish Alumina Ltd, Aughinish Island, Askeaton, Co. Limerick

FOR Maintenance dredging at four sites around the Aughinish Alumina Ltd jetty, Shannon Estuary, Co. Limerick and deposit of dredge material on the seabed off Foynes Island.

Application Number No. LIC230004

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Statement of Authority

This Appropriate Assessment Report has been undertaken by the Assessment, Research and Data Unit within MARA, a specialist unit with appropriate expertise in environmental assessment.

1 Introduction

1.1 Background

Aughinish Alumina Ltd has applied to MARA for a licence to undertake maintenance dredging to maintain the water depths at the deep water jetty at Aughinish Island, Co. Limerick.

Aughinish Alumina held both a foreshore licence (Foreshore licence no.: FS006578) and a Dumping at Sea permit (EPA Permit no.: S0026-01) for maintenance dredging at the deep water jetty. Both of these consents expired in August 2024. The applicant has submitted an application to the Environmental Protection Agency for a new Dumping at Sea permit in parallel with this licence application. The applicant submitted a Natura Impact Statement with their licence application in support of this appropriate assessment.

1.2 Legislative Context

This appropriate assessment report relates to a licence application for an activity in the maritime area in accordance with Part 5 of the Maritime Area Planning Act, 2021. Section 117 of the Act sets out the requirements for MARA to undertake appropriate assessment in respect of a proposed maritime usage. The EU Habitats Directive (Council Directive 92/43/EC) and Birds Directive (2009/147/EC0 are transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011 and by Part XAB of the Planning and Development Act, 2000. Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations, 2011 outlines requirements for screening for appropriate assessment and for undertaking appropriate assessment. In addition, a 30-day public consultation is required on the Natura Impact Statement under Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations, 2011 and Section 117 of the Maritime Area Planning Act, 2021.

1.3 Screening for Appropriate Assessment

MARA completed a screening for appropriate assessment and published an appropriate assessment screening determination on 3rd October 2024. The determination stated that the proposal by Aughinish Alumina Ltd to carry out maintenance dredging at four sites and deposit of dredge material at a designated site off Foynes Island at Aughinish Alumina Jetty, Shannon Estuary, Co. Limerick, requires an appropriate assessment, as it cannot be excluded, on the basis of objective scientific information, following screening that the proposed activities, individually or in combination with other plans or projects, will have a significant effect on a European Site.

2 Description of proposed works

2.1 Description of the Proposed Maritime Usage Activity

Aughinish Alumina Ltd operates an alumina refinery at the proposed location. Delivery of bauxite and export of finished product alumina requires a deep-water jetty which extends into the sub-tidal waters of the Shannon Estuary. There is an outer and an inner berth at the jetty for ships to come alongside. The outer berth can accommodate vessels of up to 90,000 dwt[1] with 12.4m alongside, while the inner berth can accommodate vessels up to 40,000 dwt with 11m depth alongside.

There is a continuous movement of sediment load from the upper reaches of the estuary to the lower estuary. This movement of sediment is a fundamental element of the dynamics of the estuarine system, as are fluctuations in the patterns of deposition of the sediments within the estuary. Within the confines of the immediate environs of the jetty at Aughinish, the jetty itself constitutes a barrier to lateral movement of sediments and this leads to accumulations of sediments which result in raised areas or mounds occurring on the seabed.

The purpose of the proposed maintenance dredging is to maintain the design and navigational depths for shipping due to the movement of sediment in the estuary. The dredging will enable the full use of the length of the jetty structure and maneuvering area. It will also allow for the berthing of larger ships in conjunction with a new unloader being provided on the jetty structure.

The proposed maintenance dredging will be undertaken using a combination of trailer suction hopper dredger, long-arm reach excavator on a barge and plough dredging. The applicant has applied for a licence for 8 years. It is proposed to undertake a biannual dredge campaign with a maximum duration of 21 days. Dredging operations would take place for 24 hours per day during each 21-day cycle.

The applicant has proposed to dredge a maximum volume of 64,462 wet tonnes at the areas around the jetty in each 21-day campaign. The applicant proposes to deposit a maximum of 53,846 wet tonnes per annum at the deposit site.

2.2 Location

The proposed activity includes four distinct locations around the jetty - Area A outer berth of the main jetty, Area B an intertidal area, Area C the inner berth of the main jetty, Area D the approach arm. There is also a fifth area, Area E, the deposit site in the estuary channel, south west of the jetty. It is proposed that a proportion of the dredge production in Areas A and C will be deposited at this location (Area E) (Figure 1). The proposed maritime usage activity is located within both the Lower River Shannon Special Area of Conservation (SAC) and the River Shannon and River Fergus Estuaries Special Protected Area (SPA).

[1] DWT – deadweight tonnage

No No

Yes Yes – possible visual and above water noise disturb

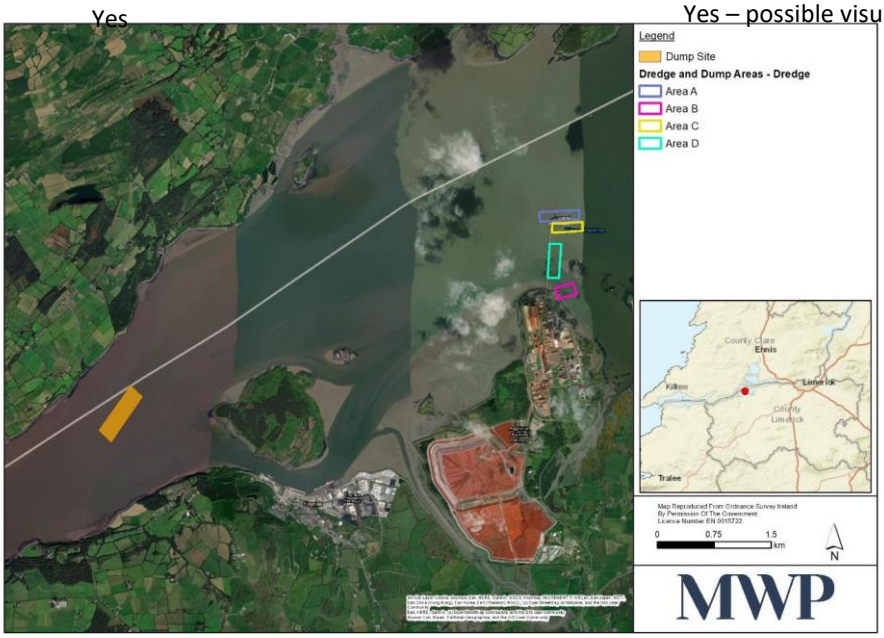

Figure 1: Location of the Proposed Dredge Locations and Dump Site, as per the licence application.

3 European Sites and Qualifying Interests

3.1 Identification of European sites likely to be affected

The Screening for Appropriate Assessment Report and Determination, prepared by MARA, identified European sites which were considered to be within the Zone of Influence of the proposed maritime usage activity. These European sites, their Qualifying Interests and Special Conservation Interests that were screened in, and possible impact as a result of the proposed project, are given in Table 1 below.

3.2 Description of the Qualifying Interests and Special Conservation Interests affected

The appropriate assessment screening identified a number of species, including bird species, and habitats as qualifying interests that may be impacted as a result of the proposed maritime usage and therefore require further assessment (Table 1).

Table 1: Special Areas of Conservation, Special Protected Areas, qualifying interests and conservation objectives identified as requiring further assessment.

European Site Code	Distance from the Proposed MUL area (km)	List of Qualifying Interests	Potential Source of impact	Conservation objectives[2]
Lower River Shannon SAC [Site Code IE002165]	Within MUL boundary	Estuaries [1130] Reefs [1170] *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355] *Tursiops truncatus* (Common Bottle-nose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351] *Halichoerus grypus* (Grey Seal) [1364]	Possible physical disturbance, habitat loss, and disturbance from underwater noise.	NPWS, 2012 Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Blasket Islands SAC [Site code IE002172]	75-100km	*Phocoena phocoena* (Harbour Porpoise) [1351] *Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise	NPWS, 2014 Conservation Objectives: Blasket Islands SAC 002172. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Slyne Head Islands SAC [Site code IE000328]	>100km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise	NPWS, 2012 Conservation Objectives: Slyne Head Islands SAC 000328. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Slyne Head Peninsula SAC [Site code IE002074]	>100km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise	NPWS, 2015 Conservation Objectives: Slyne Head Peninsula SAC 002074. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Inishmore Island SAC [Site code IE000213]	>100km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to Harbour Porpoise in this SAC, so

[2] Where site specific conservation objectives are not available, the conservation objectives of the closest relevant European Site shall apply.

				the conservation objectives from Blasket Islands SAC were used in their absence. NPWS (2014) Conservation Objectives: Blasket Islands SAC 002172. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Kilkieran Bay and Islands SAC [Site code IE002111]	>100km	*Phocoena phocoena* (Harbour Porpoise) [1351] *Phoca vitulina* (Harbour Seal) [1365]	Possible disturbance from underwater noise	NPWS (2014) Conservation Objectives: Kilkieran Bay and Islands SAC 002111. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
West Connacht Coast SAC [Site code IE002998]	>100km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	NPWS (2015) Conservation Objectives: West Connacht Coast SAC 002998. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Inishbofin and Inishshark SAC [Site code IE000278]	>100km	*Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise	NPWS (2015) Conservation Objectives: Inishbofin and Inishshark SAC 000278. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Duvillaun Islands SAC [Site code IE000495]	>200km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise	NPWS (2013) Conservation Objectives: Duvillaun Islands SAC 000495. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Inishkea Islands SAC [Site code IE000507]	>200km	*Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise	NPWS (2015) Conservation Objectives: Inishkea Islands SAC 000507. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Roaringwater Bay and Islands SAC [Site code IE000101]	>200km	*Halichoerus grypus* (Grey Seal) [1364] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	NPWS, 2011 Conservation Objectives: Roaringwater Bay and Islands SAC 000101. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Rockabill to Dalkey SAC [IE003000]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	NPWS, 2013 Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service,

				Department of Arts, Heritage and the Gaeltacht
Kenmare River SAC [IE002158]	>200km	*Phoca vitulina* (Harbour Seal) [1365] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	NPWS, 2013 Conservation Objectives: Kenmare River SAC 002158. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht There are no specific conservation objectives relating to Harbour Porpoise in this SAC, so the conservation objectives from Blasket Islands SAC were used in their absence. NPWS (2014) Conservation Objectives: Blasket Islands SAC 002172. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Belgica Mound Province SAC [IE002327]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351] *Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Blasket Islands and Lower River Shannon SACs were used in their absence. NPWS (2014) Conservation Objectives: Blasket Islands SAC 002172. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Bunduff Lough and Machair/Trawalua/Mullaghmore SAC [IE000625]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Blasket Islands and Lower River Shannon SACs were used in their absence. NPWS (2014) Conservation Objectives: Blasket Islands SAC 002172. Version 1. National Parks and Wildlife Service,

				Department of Arts, Heritage and the Gaeltacht.
St Johns Point SAC [IE000191]	>200km	*Tursiops truncatus (*Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from West Connaught Coast SAC were used in their absence. NPWS (2015) Conservation Objectives: West Connacht Coast SAC 002998. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Hook Head SAC [IE000764]	>200km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands and Lower River Shannon SACs were used in their absence. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Carnsore Point SAC [IE002629]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC were used in their absence. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Blackwater Bank SAC [IE002953]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to

				Dalkey Islands SAC were used in their absence. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Porcupine Bank Canyon SAC [IE003001]	>200km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower River Shannon SAC were used in their absence. NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
South-west Porcupine Bank SAC [IE002329]	>200km	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower River Shannon SAC were used in their absence. NPWS (2012) Conservation Objectives: Lower River Shannon SAC 002165. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Codling Fault Zone SAC [IE003015]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to this species in this SAC, so the conservation objectives from Rockabill to Dalkey Islands SAC were used in their absence. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Lambay Island SAC [IE000204]	>200km	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	NPWS (2024) Conservation Objective Series: Lambay Island SAC 000204. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

North Anglesey Marine / Gogledd Môn Forol [UK 0030398]	Within Management Unit for Harbour porpoise[3]	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status for Harbour Porpoise in UK waters
Bristol Channel Approaches / Dynesfeydd Môr Hafren [UK0030396]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status for Harbour Porpoise in UK waters
North Channel [UK 0030399]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status for Harbour Porpoise in UK waters
West Wales Marine / Gorllewin Cymru Forol [UK 0030397]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status for Harbour Porpoise in UK waters
Récifs et landes de la Hague [FR2500084]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Anse de Vauville [FR2502019]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Banc et récifs de Surtainville [FR2502018]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Chausey [FR2500079]	Within Management Unit for	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the

[3] Review of Management Unit boundaries for cetaceans in UK waters (2023)

	Harbour porpoise			conservation objectives from Lower Shannon River SAC (Site code: IE002165).
Baie du Mont Saint-Michel [FR2500077]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Estuaire de la Rance [FR5300061]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [FR5300012]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Cap d'Erquy-Cap Fréhel [FR5300011]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Baie de Saint-Brieuc – Est [FR5300066]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Tregor Goëlo Est [FR5300010]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Côte de Granit rose-Sept-Iles [FR5300009]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Nord Bretagne DH [FR2502022]	Within Management Unit for	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the

	Harbour porpoise			conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Baie de Morlaix [FR5300015]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Abers - Côte des legends [FR5300017]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were.
Ouessant-Molène [FR5300018]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
Côtes de Crozon [FR5302006]	Within Management Unit for Harbour porpoise	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise	There are no specific conservation objectives relating to these species in this SAC, so the conservation objectives from Lower Shannon River SAC (Site code: IE002165) were used.
River Shannon and River Fergus Estuaries SPA [Site code IE004077]	Within MUL boundary	Cormorant (*Phalacrocorax carbo*) [A017] Whooper Swan (*Cygnus cygnus*) [A038] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Scaup (*Aythya marila*) [A062] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Knot (*Calidris canutus*) [A143] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156]	Possible visual & above water noise disturbance and disturbance from underwater noise	NPWS (2012) Conservation Objectives: River Shannon and River Fergus Estuaries SPA 004077. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

		Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Greenshank (*Tringa nebularia*) [A164] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]		

4 Assessment and Mitigation

4.1 Assessment of Likely/Possible Significant Impacts on European Sites and their conservation interests

The impacts that have been identified that have the potential to cause significant impacts on European sites and their designated species are physical disturbance and habitat loss, increased suspended sediment concentrations, disturbance and displacement from underwater noise and visual impacts. Any mitigation measures recommended on foot of the assessment in this section are included in Section *4.4 Mitigation Measures*.

4.1.1 Physical disturbance and habitat loss

There is potential for the proposed dredging and disposal activity to cause physical disturbance to habitats and habitat loss. Any such impacts would be in respect of the Lower River Shannon SAC. The marine habitat types within this SAC include estuaries, mudflats and sandflats not covered by seawater at low tide and reefs. The *Lower River Shannon SAC Conservation objectives supporting document marine habitats and species* notes the resilient nature of tidal marine areas. The document also notes that anthropogenic disturbance may be considered significant when it causes a change in biotic and/or abiotic variable in excess of what could reasonably be envisaged under natural processes. Where a proposed marine usage activity is proposed within the marine habitat is likely to cause continuous disturbance of each community type, it should not exceed an approximate area of 15%. While the proposed dredging activity is entirely anthropogenic, it mimics natural processes that are characteristic of the estuary.

The conservation objective for estuaries within the Lower River Shannon SAC is that the permanent habitat area remains stable or increasing subject to natural processes. The dredging areas and the area identified for disposal of the dredge sediments comprise 0.12% of the total estuary habitat within the SAC, significantly below the 15% threshold identified by the NPWS. In addition, neither the dredge areas nor the disposal site will be subject to sustained disturbance beyond each 21-day dredging campaign, continuous anthropogenic disturbance of the constituent community types in the protected habitat will not occur.

Mudflat and sandflats protected in the SAC are not located within the mapped areas for either dredging or disposal. There is no potential for direct loss of this habitat type as a result of the proposed activity. There is potential for indirect impacts in the form of limited sediment deposition. However, any sediment deposition that would occur would be indigenous material from the adjacent seabed and supports any benthic species present. Therefore, significant effect to the structure and function of this habitat type are not likely.

Reef habitat type occurs as a small, discrete area of habitat within the vicinity of the jetty and it also occupies a larger footprint adjacent to the proposed disposal site. The applicant submitted a benthic assessment report as part of the licence application. The assessment took account of existing mapping on foot of a previous dive survey, Water Framework Directive benthic monitoring and NPWS mapped information on community types. The assessment also took account of sediment sampling from the proposed dredge areas. The benthic assessment referred to video marine monitoring

surveys undertaken by the NPWS which identified the habitat around the deposit site comprising of cobble reef with sparse epifauna supporting robust species capable of withstanding the scouring effect and sediment load. The assessment concluded that, due to the scouring effect of the River Shannon, any sediment from the dredge sites deposited at the deposit site will be washed away in a relatively short period of time (<1 year). It further concluded that any smothering of epifaunal species present at the location of the deposit site will recolonise from the upstream populations within a similar time period.

In addition, pre and post dredging monitoring for turbidity levels in the water column for previous dredge campaigns illustrate that large fluctuations in turbidity occur naturally as a result of the flood and ebb tides alone. These fluctuations were often in excess of those seen during dredging campaigns. These results showed that the structure and function of the habitats within the SAC adapted to these prevailing, highly dynamic environmental conditions. No further mitigation is required.

As discussed earlier, the nature and frequency of the proposed dredging activity is temporary and intermittent, therefore any potential disturbance is expected to be short term and not significant. No further mitigation is required.

4.1.2 Increased suspended sediment concentrations

The nature of the activity involves movement of sediments. Plough dredging will push any localised accumulations of sediment from one part of the seabed to another adjacent part of the seabed. Any increase in suspended sediments in the water column are likely to remain relatively low in the water column and close to the estuary bed. As discussed above the level of sediment in the water column in the estuary is naturally high, so any temporary increases in sediment are expected to be minor relative to the natural state of the water.

Adopting a precautionary approach, it would be prudent to assume that both sea and river lamprey could migrate through the area around the jetty during the migratory phases of their life cycles when adults migrate upstream to spawning sites or the young make their seaward migration. The wider estuary channel also acts as a corridor for returning salmon adults and migrating smolts. The NPWS (in the site synopsis document for the Lower River Shannon SAC) notes that both river and sea lamprey, and Atlantic salmon, have all been observed spawning in the lower Shannon or its tributaries.

The applicant submitted a Dredge Modelling report with the licence application. The model simulated and assessed three dredge scenarios. These scenarios represented the likely worst case scenarios in terms of dredge quantities, locations, sequencing and the combination of dredge methodologies used.

The model used the MIKE21 suite of software, an established model used for modelling coastal and marine water processes. The input data for the model is based on tidal boundary conditions and measured data from the River Shannon at Ardnacrusha, Co. Clare. The hydrodynamic model output was validated against data collected in September 2019 by Aquafact Ltd.

The model found that suspended sediment concentrations peaks at the dredge site (0.7kg/m^3) and the deposit site (0.6kg/m^3) were local to both locations and the suspended solids concentrations diminish rapidly outside of these areas. The model report noted that background suspended sediment concentration is generally 0.1kg/m^3 to 0.15kg/m^3 but peaks of up to 0.25kg/m^3 do occur.

The model also looked at changes in sea bed thickness which would be an indication of habitat smothering. Occurrences of changes in bed thickness predicted under modelled conditions corresponded with areas of natural mudflats. This signifies that the dredge material falls out of suspension and settles in the same manner as the natural sediment transport regime of the Lower Shannon.

The model predicted any increases in suspended solids associated with the dredging activity would be local to either the proposed dredge or deposit sites, and temporary in nature. It is therefore considered that the proposed dredging activity is extremely unlikely to pose any significant risks to the aforementioned fish species.

It is recommended that suitable mitigation measures be included in the licence for the Permitted Maritime Usage, if granted. The purpose of the mitigation would for the conditions during the proposed maritime usage to reflect the conditions modelled.

4.1.3 Disturbance due to underwater noise

Marine mammals depend on sound for a wide range functions including navigation, perception of their environment, communication, prey identification and capture, and the detection of predators. The dredge operations emit continuous low frequency sound into the marine environment. The increase in noise will be greatest within the immediate vicinity of the dredger, but its intensity decreases with distance. In addition, while the presence of an operational dredger within the Shannon Estuary will lead to small local increase in noise, the disturbance is likely to be minimal given the proximity to the port operations for Shannon Foynes. With respect to the resident population of bottlenose dolphins, given that they are resident in the estuary and would be reasonably habituated to fugitive noise emissions to water, any impacts on them as a result of the dredging are not expected to be significant.

The applicant submitted a marine mammal risk assessment with the licence application. Specifically, the risk assessment addressed marine mammal activity in the vicinity of the proposed maritime usage and the impacts of the proposed maintenance dredging campaign on marine mammals with respect to the effects of noise. The risk assessment, undertaken by the Irish Whale and Dolphin Group, on behalf of the applicant explained that the response of marine mammals to dredging is dependent on the type of dredger used, but is accepted that noise from dredging is generally well below suspected injury thresholds or permanent threshold shift. Temporary threshold shift cannot be ruled out if marine mammals are exposed to noise for prolonged periods. Sound production from the proposed maritime usage in Aughinish is dependent on the hardness or how consolidated the mounds to be removed are – harder mounds will require greater force from the dredger and thus greater noise generated. However, considering this, the risk assessment states that it is likely the underwater sound is inaudible at approximately 500m from the source. The risk assessment concludes that while the dredging will lead to a small local

increase in noise, given the nature of the area in the context of high traffic, disturbance from the proposed maritime usage is likely to be minimal.

The closest SACs for grey and harbour seals are 111km (Blasket Islands SAC) and 150km (Galway Bay Complex SAC) away respectively. There are no known haul-out, moulting or resting sites within the Shannon Estuary for these species, therefore any effects from dredging are limited to likely affect a small number of individuals.

In addition to the marine mammals, otters are also protected in the Lower River Shannon SAC. The shoreline around the area of the proposed maritime usage is a known commuting corridor for the otters. However, given the busy nature of the site, it is considered that any otters in the vicinity of the jetty at Aughinish would likely be habituated to the levels of disturbance that prevail at the jetty.

Atlantic salmon and species of lamprey are protected within the Lower River Shannon SAC also. These fish all have the potential to migrate through the area around the jetty during the migratory phases of their life cycle. However, notwithstanding this, it is not expected that these fish, in particular salmon, would be present in the brackish waters of the estuary for considerable periods of time. Considering the short term nature of the proposed maritime usage, as discussed above, it is extremely unlikely that the proposed maritime usage would pose a significant risk.

However, the possibility of impact on marine species as a result of the proposed maritime usage activity, cannot be entirely excluded. Therefore, it is recommended that suitable mitigation measures be included in the Maritime Usage Licence, if granted.

Diving birds such as cormorants can be sensitive to disturbance from underwater noise. However, given the level of activity which normally takes place within the vicinity of Aughinish Alumina and throughout the wider estuarine area, it is likely that any affected bird species present will be accustomed to a relatively high level of noise associated with vessel movements. Therefore, it can be concluded that underwater noise would be very unlikely to have a significant effect on diving birds in the vicinity of the dredging activity. No further mitigation is recommended for birds.

4.1.4 Disturbance due to above water noise and visual impacts

There is potential for disturbance to birds from above water noise, however, this is likely to be temporary and intermittent given the nature, duration and frequency of dredging operations. Many of the bird species for which the Shannon Estuary is designated are only resident in the estuary for parts of the year, mostly October to March. In these instances, the birds will only be disturbed if their presence coincides with the dredging. Similarly, to disturbance due to underwater noise, the bird species present in the area are likely to be accustomed to the level of vessel activity in the vicinity of the jetty in Aughinish and the wider Shannon Estuary. Any noise disturbance from the dredging operations is not expected to exceed that which would normally occur in the area. No further mitigation is recommended.

4.1.5 Disturbance due to accidental incidents

The use of dredging vessels to undertake the activity present a risk of diesel or oil spills which can impact foraging ability, health and mortality of species identified as

susceptible to potential impacts from the proposed project. While the risks associated with this are low, the impact could be significant and mitigation is required. Therefore, it is recommended that suitable mitigation measures be included in a Maritime Usage Licence, where granted.

4.2 Assessment of In-combination effects

Article 6(3) of the Habitats Directive requires that an Appropriate Assessment be carried out in respect of any plan or project which is likely to have a significant effect on one or more European sites, either individually or in combination with other plans or projects. Therefore, regardless of whether or not the likely or possible effects of a plan or project are significant when considered in isolation, the potential for the plan or project to significantly affect European sites in combination with other past, present or foreseeable future plans or projects must also be assessed. All types of plans or projects that could, in-combination with the project under consideration, have a significant effect, should be taken into account. This in-combination assessment has been undertaken using professional and scientific judgement.

1. Defining the Cumulative Effects Spatial Scope (CESS)

Impacts of underwater noise associated with the proposed maritime usage are considered to have the widest spatial reach, with harbour porpoise being most sensitive to noise disturbance[4]. The CESS was defined at Appropriate Assessment screening stage as 10km.

2. Defining the Cumulative Effects Temporal Scope (CETS)

The temporal scope for examination of cumulative effects has been defined considering the period over which the proposed maritime usage would take place. The Natura Impact Statement states, it is anticipated that the proposed maritime usage will take place twice a year over 8 years. Therefore, the CETS is 8 years.

3. Impact identification

The impacts identified are:

- Physical disturbance and habitat loss
- Disturbance from underwater noise
- Increased suspended sediment concentrations
- Visual and above water noise disturbance

4. Pathway Identification

Impact	Potential Cumulative Pathway
Physical disturbance and habitat loss	Pathway requires direct spatial overlap. Potential pathway for physical disturbance and habitat loss impact where there is spatial and temporal overlap.
Disturbance from underwater noise	Pathway possible via sound travelling through water with impacts possible within CESS where there is temporal overlap with other underwater noise producing projects.
Increased suspended sediment concentrations	Pathway possible via increased sediments in the water column with impacts possible within the CESS where there is temporal and spatial overlap with other relevant projects.

[4] JNCC Guidance on Assessing the Significance of Noise Disturbance against Harbour Porpoise SACs Conservation Objectives (https://data.jncc.gov.uk/data/2e60a9a0-4366-4971-9327-2bc409e09784/JNCC-Report-654-FINAL-WEB.pdf)

Visual and above water noise disturbance	Pathway possible via sound travelling above water with potential impacts within the CESS where there is temporal overlap with other relevant projects.

5. Prediction:

The magnitude and extent of identified likely cumulative effects have been predicted below.

Physical disturbance and habitat loss

There is the potential for increased physical disturbance and habitat loss if other relevant projects were to take place at the same time.

Disturbance from underwater noise

There is the potential for increased underwater noise disturbance effects if other projects, capable of producing underwater noise, were to take place at the same time.

Increased suspended sediment concentrations

There is potential for increased suspended sediment concentrations in the water column where there is temporal or spatial overlap with other relevant projects.

Visual and above water noise disturbance

There is the potential for increased visual and above water noise disturbance if other relevant projects were to take place at the same time.

6. Identification of Plans or Projects that could act in combination:

A search was carried out of relevant databases (e.g. EPA, Foreshore, MARA, planning authorities, aquaculture, *etc*) for other plans/projects with characteristics that may cause in-combination or cumulative effects with the project being assessed, on Natura 2000 sites (25th September 2024 and 25th February 2025). In addition, the Natura Impact Statement submitted with the licence application considers the potential impacts of key relevant projects. All relevant plans and projects within the CESS and CETS have been considered. The projects within the CESS and CETS have been considered for their potential to cause cumulative effects, in combination with the proposed marine usage activity being considered in this licence application, on the qualifying interests of Special Areas of Conservation and Special Protection Areas.

Particular attention is given in the context of this in-combination assessment to the following projects:

- Maintenance dredging permitted at the Shannon Foynes Port (Foreshore licence: FS006975 and Dumping at Sea permit: S0009-03);
- Extension of Shannon Foynes Port Company (An Bord Pleanála ref: PA91.301561; MARA Ref: LIC230014);
- Maritime Usage Licence for site investigations to inform the design of the proposed Moneypoint Hub Project at Moneypoint, Co. Clare (MARA Ref: LIC230008).

In addition, the in-combination assessment considers the potential cumulative impacts from minor development projects, aquaculture, waste water discharges and agriculture in the geographical area surrounding the proposed maritime usage.

The following plans, related to the development of the maritime environment were also identified:

- Limerick County Development Plan (2022-2028)
- Clare County Development Plan (2023-2029)
- Strategic Integrated Framework Plan for the Shannon Estuary (2013-2020)

These plans promote sustainable development and integrated management planning in the maritime environment. It is unlikely that any of these plans will result in a negative in-combination effect on the conservation objectives of the Natura 2000 sites.

7. Cumulative Effects Assessment conclusion

There is potential for likely significant in-combination effects on the conservation objectives of the Natura 2000 sites addressed in this appropriate assessment, where impacts from the proposed maritime usage could interact synergistically with other plans and projects, to create adverse effects on the integrity of the Natura 2000 sites. In order for synergistic interactions to occur both sources of impacts must reach a threshold of interactive potential that is of sufficient character, magnitude, duration or intensity. The assessment in Section 4.1 of this report above, has already assessed the potential for significant effects of the proposed maritime usage on Natura 2000 sites.

While agriculture and wastewater discharges are known to be amongst the biggest pressures on water bodies in Ireland, their impacts are primarily on physico-chemical parameters such as the levels of dissolved nutrients and suspended solids. The pressures resulting from dredging are primarily associated with increased levels of sediments, hydro-morphology and some, albeit limited, risk of fuel or oil spills. Therefore, any diffuse pollution from agriculture and wastewater in the vicinity of the proposed maritime usage combined with the pressures from the proposed dredging are unlikely to be of sufficient character magnitude, duration, or intensity to reach a threshold sufficient to initiate synergistic interaction particularly because the sediments are not likely to impact on physico-chemical parameters in the water column.

While the projects relating to site investigations for the expansion of the Shannon Foynes Port and the site investigations to inform the design of a proposed hub at Moneypoint in Co. Clare could potentially be undertaken simultaneously to the proposed dredging for Aughinish, these projects will not interact synergistically with the proposed maritime usage in Aughinish and therefore in-combination effects as a result of these projects are unlikely.

There is potential for in-combination effects on the Lower Shannon Estuary SAC where the maintenance dredging permitted for Shannon Foynes to maintain the channel to Shannon Foynes Port and Limerick Dock is undertaken simultaneously with the proposed dredging for Aughinish. The dispersion model submitted with the licence application predicted dispersion of dredge sediment on the basis of the tonnages proposed to be dredged as part of the maritime usage being considered in this licence application only. The effects of the dispersion of sediments if multiple dredging operations were to be undertaken simultaneously, could lead to significant effects on the Natura 2000 site in the form of increased sea bed thickness, which could lead to smothering effects or a delayed dispersion of suspended solids. Neither scenario was considered within the model submitted with the licence application. On this basis, and using the precautionary principle, the above project is considered to

have potential in-combination effects should there be temporal overlap with the proposed maritime usage activity.

It is not possible to exclude the possibility of likely significant in-combination effects on the conservation objectives of the Natura 2000 sites considered in this assessment as a result of this proposed maritime usage, the projects identified and the relevant plans. Therefore, it is recommended that suitable mitigation for the possibility of likely significant in-combination effects be included in the Maritime Usage Licence, if granted.

4.3 Assessment of Transboundary effects

The mitigation measures proposed as part of this appropriate assessment will mitigate against any transboundary effects on the qualifying interests from the British and French protected sites.

4.4 Public consultation

A 30-day public consultation was undertaken commencing on 15th January 2025, with the public invited to make observations. In addition to the public consultation, observations were invited from relevant public bodies. One (1) submission was received on foot of the public consultation. This submission was not in relation to the Appropriate Assessment. Nine (9) submissions were received from relevant public bodies. These submissions have been considered as part of this appropriate assessment. The submissions are summarised in the MUL Assessment Report associated with this MUL application.

4.5 Mitigation Measures

Mitigation measures for those impacts identified in Section 4.1 *Assessment of Likely/Possible Significant Impacts on European Sites and their conservation interests* are detailed below.

4.5.1 Physical disturbance and habitat loss

No further mitigation is required in relation to this.

4.5.2 Increased suspended sediment concentrations

It is recommended that suitable mitigation in the form of limiting the tonnages related to the proposed maritime usage and restricting dredging to be undertaken concurrently with other dredging or deposit operations within the Lower River Shannon Estuary, be included in the licence for the Permitted Maritime Usage, if granted. This will ensure that the environment used in the model to predict how the sediments will behave will be reflected in reality. The mitigation should be as follows:

Quantities of dredge spoil associated with the Permitted Maritime Usage
The tonnages associated with the Permitted Maritime Usage shall not exceed the following:

Location	*Associated activity*	*Maximum Quantity (wet tonnes)* ***per 21 day campaign***
Area A, B, C, D	*Dredging*	*64,462*

Location	*Associated activity*	***Maximum Annual Quantity (wet tonnes)***
Area E	*Deposit*	*53,846*

The Holder shall ensure that the Permitted Maritime Usage does not take place concurrently with other authorised dredging or deposit (or dumping) campaigns in the Lower Shannon Estuary, unless otherwise agreed by the Grantor.

4.5.3 Disturbance due to underwater noise

Appropriate mitigation for the effects of underwater noise on marine mammals is the implementation of the NPWS *Guidance to manage the Risk to marine mammals from man-made sound sources in Irish Waters*. It is recommended a condition be included in the licence, if granted, as follows:

Marine Mammals

i) The Holder shall appoint a marine mammal observer(s) for the purposes of overseeing the Permitted Maritime Usage. The Holder shall ensure the marine mammal observer(s) shall satisfy the requirements of National Parks and Wildlife Service guidance. During the activity the Holder shall comply with the directions of the marine mammal observer(s).

ii) The Holder shall implement risk control and mitigation measures for marine mammals in strict accordance with National Parks and Wildlife guidance.

iii) The Holder shall, within 30 days of completion of the Permitted Maritime Usage, forward a report of the marine mammal observer(s) operations and mitigation undertaken, to offshore@npws.gov.ie and compliance@mara.gov.ie.

iv) The Holder shall publish the report and recording and data forms on their website within 60 days of completion of the Permitted Maritime Usage unless otherwise agreed with the Grantor.

To ensure appropriate records of the above mitigation measure are maintained, it is also recommended a condition be included in any maritime usage licence that may be granted as follows:

The Holder shall keep the following documents together and available for inspection by the Grantor:

a. a copy of the licence related to this Permitted Maritime Usage;
b. all correspondence with the Grantor;
c. up to date drawings, plans and maps relating to the Permitted Maritime Usage;

d. documents and photographs and other relevant records relating to the Permitted Maritime Usage to provide evidence of compliance with licence conditions;
e. marine positional log; and,
f. any elements of the licence application and associated documentation referenced in this licence.

4.5.4 Disturbance due to above water noise and visual impacts

No further mitigation is required in relation to this.

4.5.5 Disturbance due to accidental incidents

Mitigation is required to minimise the risk of impacts as a result of accidental spills from small craft or survey vessels. It is recommended a condition be included in any maritime usage licence in relation to this activity that may be granted as follows:

Accidental events

The Holder shall ensure that there is an oil pollution emergency plan on-board any survey vessels. This plan should specify:

i) Information on the location and detail of spill response resources on-board;
ii) Information on crew training in relation to oil pollution response;
iii) How crew will interface with other site investigation operators, where applicable.

4.5.6 In-combination effects

To minimise any in-combination effects as a results of other projects or plans, it is recommended that a condition be included requiring the applicant to coordinate their proposed maritime usage with the local harbor authority, as follows:

The Holder shall ensure that the Permitted Maritime Usage does not take place concurrently with other authorised dredging or deposit (or dumping) campaigns in the Lower Shannon Estuary, unless otherwise agreed by the Grantor.

5 Appropriate Assessment Conclusion

The applicant provided a Natura Impact Statement which detailed the potential impact of the proposed project on relevant European sites and whether these impacts would adversely affect the integrity of the sites in light of their conservation objectives.

The Appropriate Assessment Screening process identified likely/possible significant impacts due to physical disturbance and habitat loss, increased suspended sediment concentrations, disturbance and displacement from underwater noise, disturbance and displacement by visual impacts, displacement by above water noise, as well as accidental incidents. These likely significant impacts could not be ruled out, beyond reasonable scientific doubt, without mitigation.

The potential direct and indirect effects as a result of underwater noise from the proposed maritime usage were identified as having the potential to cause in-combination impacts which could not be ruled out, beyond reasonable scientific doubt, without mitigation.

Mitigation measures were identified to ensure that impacts on European sites and their qualifying interests and special conservation interests do not occur. Therefore, with adherence to the mitigation measures specified in section *4.5 Mitigation Measures*,

and in view of best scientific knowledge, and of the sites 'conservation objectives, the project, individually, or in-combination with other plans or projects, will not have adverse effects on European sites.

Signature and Date of Recommending Marine Advisor	[redacted] **Suzanne Wylde** Senior Marine Advisor Assessment, Research and Data 18th March 2025

6 Appropriate Assessment Determination

Having considered this report, the documents submitted by Aughinish Alumina Ltd, the observations received on foot of the public consultation on the application, along with my own assessment, it can be concluded, and I determine, for the purposes of Article 6(3) of the Habitats Directive and Regulation 42(11) of the Birds and Natural Habitats Regulations, that the **proposal by Aughinish Alumina to carry out maintenance dredging at four sites and deposit of dredge material at a site off Foynes Island at Aughinish Alumina Jetty, Shannon Estuary, Co. Limerick** (either individually or in combination with any other plans or projects), will not adversely affect the integrity of any European sites, in view of the sites' conservation objectives, subject to the implementation of the mitigation measures specified in section 4.5 Mitigation Measures adopted and outlined above, which must be included as conditions to any consent that may be granted in respect of the respective maritime usage licence application.

Signature and Date of Decision Maker	[redacted] _____ **John Evans** Director of Assessment, Research and Data 18th March 2025