

Historic Landfill at Ardfert, Co. Kerry

STAGE 1 APPROPRIATE ASSESSMENT SCREENING REPORT FOR THE REMEDIATION OF HISTORIC LANDFILL SITE, ARDFERT, COUNTY KERRY

Prepared for: Kerry County Council



Date: August 2021

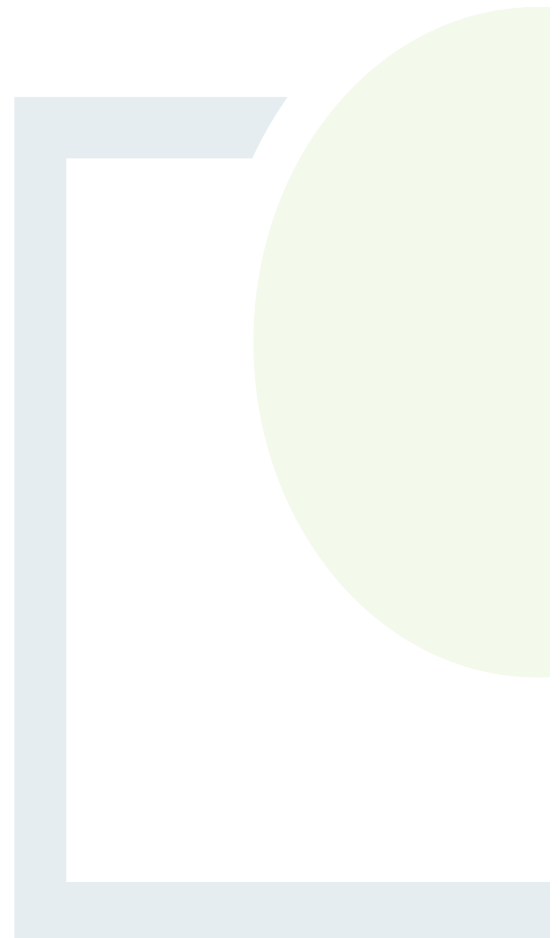
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STAGE 1 APPROPRIATE ASSESSMENT SCREENING REPORT FOR HISTORIC LANDFILL SITE, ARDFERT, COUNTY KERRY

HISTORIC LANDFILL AT ARDFERT, CO. KERRY

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Abstract: This document comprises the Stage One: Appropriate Assessment Screening Report for the Historic Landfill at Ardfert, Co. Kerry. Appropriate Assessment is required under Article 6 (3) of the Habitats Directive for any project or plan that may give rise to significant effects on a European (Natura 2000) site.

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1. INTRODUCTION

Fehily Timoney and Company (FT) were commissioned by Kerry County Council to prepare a Stage 1 Appropriate Assessment Screening Report, as required by Article 6 of Council Directive 92/43/EEC (Habitats Directive). The preparation of the Appropriate Assessment Screening Report (AA Screening) follows the completion of a Tier 2 and 3 Risk Assessment (see Appendix 2) and recommendation for remediation works to the Historic Landfill at Ardfert Co. Kerry (see Figure 1-1 for location).

In compliance with the provisions of Article 6 of the Habitats Directive, as implemented by Part XAB of the Planning and Development Act 2000, as amended, in circumstances where a proposed plan or project is likely to have a significant effect on a European (Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the competent authority, of the implications for the site in view of the site's conservation objectives.

European sites comprise both Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for habitats and species. The Habitats Directive formed a basis for the designation of SACs. Similarly, SPAs are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). In general terms, European sites are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

Article 6 of the Habitats Directive envisages a two-stage process, which is implemented in some detail by the provisions of sections 177U and 177V of the Planning and Development Act. Screening for appropriate assessment in accordance with section 177U is the first stage of the AA process (Stage One), in which the possibility of there being a significant effect on a European site is considered. Plans or projects that have no appreciable effect on a European site are thereby excluded, or screened out, at this stage of the process. Where screening concludes that there is the potential for significant effects, then it is necessary to carry out an AA (Stage Two) for the purposes of Article 6(3), and a Natura Impact Statement (NIS) is produced. The NIS, which forms the basis of the AA, considers the effects of a project or plan on the integrity of a European site and on its conservation objectives, and where necessary, draws up mitigation measures to avoid/minimise negative effects.

The competent authority, in carrying out an AA, is required to make an examination, analysis, evaluation, findings, conclusions and a final determination as to whether or not the proposed works would be likely to have significant effects on the relevant European site(s) in view of their conservation objectives. To evaluate the potential effect(s) of the proposed development on the European sites, all sites located within a 15 km radius of the development or those which are ecologically linked were considered. Please note that while a 15 km buffer is recommended for plans, there is no hard and fast rule for buffer size (EPA, 2009). A 15 km buffer was used as it encompasses a distance in which the qualifying features and special conservation interests of European sites may potentially be impacted with regards to the proposed development separately and in combination with other developments. However, European sites located outside of the 15 km buffer with potential links to the proposed development were also considered (e.g., hydrological connections); there were none present.

Ardfert historic landfill is not located within any European site. Ten European sites are located within 15 km of the historic landfill site:

- Akeragh Banna and Barrow Harbour cSAC (000332)
- Tralee Bay Complex SPA (004188)
- Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070)



- Magharee Islands SAC (002261)
- Magharee Islands SPA (004125)
- Kerry Head SPA (004189)
- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)
- Slieve Mish Mountains cSAC (002185)
- Ballyseedy Wood SAC (002112)
- Lower River Shannon cSAC (002165)

1.1 Legislative Requirements

The requirements for an AA are set out in the Habitats Directive 92/43/EEC. Articles 6(3) and 6(4) of this Directive states:

6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have 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.

6(4) 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 social or economic nature, the Member State 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 statutory agency responsible for European sites is the National Parks and Wildlife Service (NPWS) of the Department of Culture, Heritage and the Gaeltacht (DCHG). In December 2009 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government' was published with a minor amendment in 2010 (DoEHLG, 2010). This guidance document was prepared jointly by the NPWS and Planning Divisions of DoEHLG (now DCHG), with input from local authorities. Previously, in 2001, the European Commission issued a guidance document. This guidance document has been updated in the published European Commission (2018) "Managing Natura 2000 sites the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC". This Appropriate Assessment Screening Report has been prepared in accordance with the relevant Irish and European Commission Guidance.

1.1.1 Regulatory Context

In 1997, the Habitats Directive was transposed into Irish National Law by the European Communities (Natural Habitats) Regulations, SI 94/1997 (as amended by S.I. 233/1998 and S.I. 378/2005).

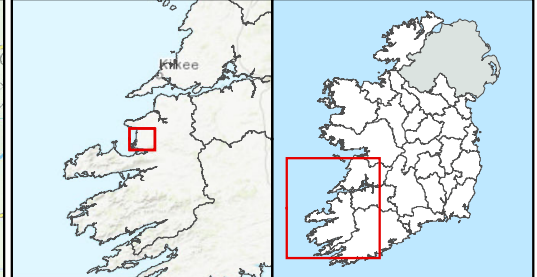
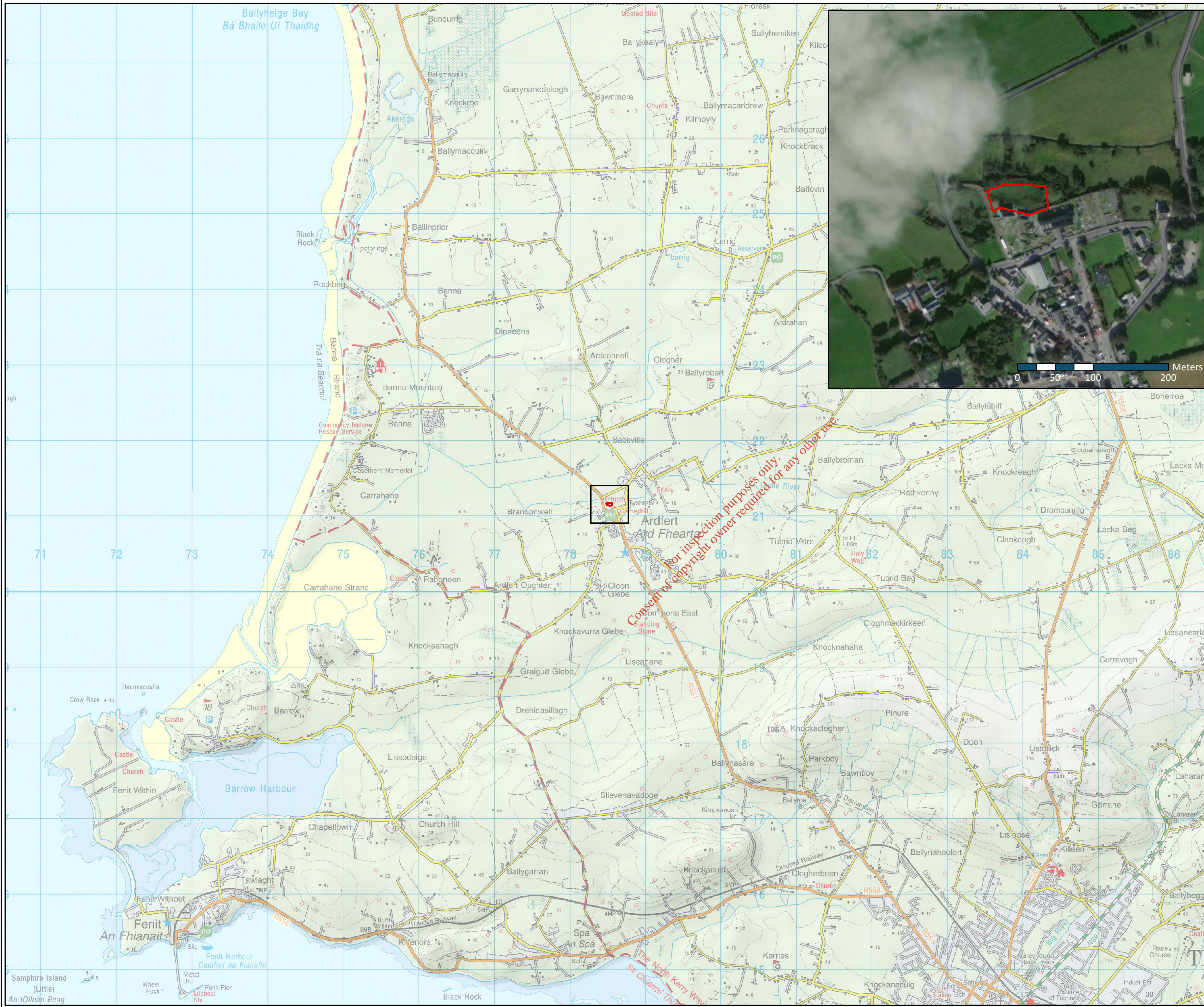


The European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477/2011) revoked the 1997 Regulations (and amendments) as well as the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010. The purpose of the 2011 Regulations was to address transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

Following additional amendments in 2013 (S.I. 499/2013) and 2015 (S.I. 355/2015) the regulations are now cited as the European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.

The Regulations have been prepared to address several judgments of the CJEU against Ireland, notably cases C-418/04 (*Commission v Ireland*) and C-183/05 (*Commission v Ireland*), in respect of failure to transpose elements of the Birds Directive and the Habitats Directive into Irish law.

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Site Boundary

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TITLE:	Site Location
PROJECT:	AA Screening for Ardfert Historic Landfill, Co. Kerry
FIGURE NO:	1.1
CLIENT:	Kerry County Council
SCALE:	1:50000
REVISION:	0
DATE:	27/04/2020
PAGE SIZE:	A3





2. METHODOLOGY

2.1 Stages of Appropriate Assessment

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures to be addressed in the AA process. Firstly, a project should aim to avoid any negative effects on European sites by identifying possible effects early in the project and should design the project in order to avoid such effects.

There are four stages in an AA, as outlined in the European Commission Guidance document (2001). The following is a brief summary of these steps:

- Stage One - Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a European Site and considers whether it can be objectively concluded that these effects will not be significant.
- Stage Two - Appropriate Assessment: In this stage, the effect of the project on the integrity of the European site is considered with respect to the conservation objectives of the site and to its structure and function. Mitigation measures should be applied to the point where no adverse effects on the site(s) remain.
- Stage Three - Assessment of Alternative Solutions: Should the Appropriate Assessment determine that adverse effects are likely upon a European site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse effects.
- Stage Four - Assessment where no alternative solutions exist and where adverse effects remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the Natura site will be necessary. European case law highlights that consideration must be given to alternatives outside the project area in carrying out the IROPI test. It is a rigorous test which projects are generally considered unlikely to pass.

In the preparation of this assessment therefore regard has been given to the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations 2011, and with reference to the relevant guidance, in particular:

- 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 2001.
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin 2010.
- European Commission (2018). *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC*. Brussels, 21.11.2018 C (2018) 7621 final.



2.1.1 Impact Assessment

The first step in the screening process is to develop a list of European sites potentially affected by the proposed development. Each European site is reviewed to establish whether or not the proposed development is likely to have a significant effect on the integrity of the site, as defined by its structure and function, and its conservation objectives.

The qualifying interests of each European site are identified, and the potential threats are summarised into the following categories for the screening process, and described within the screening matrix as follows:

- Direct effects refer to habitat loss or fragmentation arising from land-take requirements for development or agricultural purposes. Direct effects can be as a result of a change in land use or management, such as the removal of agricultural practices that prevent scrub encroachment.
- Indirect and secondary effects do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect effects of the plan (or project) – in combination with other plans and projects - have been established. These can arise when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site, and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as both an indirect or direct consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect effect, which results in increased movement of vectors (humans, fauna, surface water), and consequently the transfer of alien species from one area to another.
- Disturbance to fauna can arise directly through the loss of habitat (e.g., bat roosts) or indirectly through noise, vibration and increased activity associated with construction and operation.

2.2 Desktop Study

In order to complete the Screening for Appropriate Assessment certain information on the existing environment is required. A desk study was carried out to collate available information on the site's natural environment. This comprised a review of the following publications, data and datasets:

- Kerry County Development Plan 2015-2021
- Tralee Municipal District Local Area Plan 2018-2024
- Kerry County Council Planning Enquiry System (www.kerrycoco.ie/planning/online-planning-enquiry/)
- National Parks and Wildlife Service (NPWS) website and metadata available (www.npws.ie)
- OSI Aerial photography and 1:50,000 mapping
- National Biodiversity Data Centre (NBDC) (on-line map-viewer)
- BirdWatch Ireland website
- Teagasc soil area maps (NBDC website)
- Geological Survey Ireland (GSI) area maps
- Environmental Protection Agency (EPA) (on-line map-viewer)
- River Catchment & Sub-catchment WFD datasets



- Tier 2 Risk Assessment Report for Ardfert Historic Landfill
- Tier 3 Risk Assessment Report for Ardfert Historic Landfill

2.3 Field Study

A site walkover was undertaken of the site on 14th February 2019. Habitats were identified and classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000). The site walkover included a search for invasive species. Bird, mammal and other taxa observations or signs were also recorded during the site walkover.

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3. DESCRIPTION OF THE EXISTING SITE

Ardfert historic landfill site is approximately 1.01ha and is located within a relatively rural setting on the edge of Ardfert village which is located ca. 8km north-west of Tralee town. The site is bounded to the west by the R551 road and further west beyond the road is agricultural land. The south and east the site is bound by lands connected to Ardfert Cathedral of St. Brendan. An access road runs along the northern and eastern boundary of the site. The site is bound by agricultural land to the north.

The site walkover and Tier 3 Risk Assessment indicates that the existing site has a soil cap with established grassland and scrub cover. The site is undulating sporadically across the entirety of the site and ground is generally uneven with an elevation of approximately 10m Ordnance Datum (OD). During the site walkover the site was categorised under Fossitt (2000) of a mosaic of 'dry meadows and grassy verges' (GS2) and 'scrub' (WS1). No invasive species were observed during the site walkover. No qualifying species of any European sites within 15 km of the proposed development were recorded during the site visit.

GSI mapping identifies the quaternary sediments as 'Karstified bedrock outcrop or subcrop (KaRck)' indicating shallow rock and outcrops dominate locally. In general, wet, poorly drained soils and peats occupy the landscape. The entirety of the site and surrounding area are underlain by the Cloonagh Limestone. Bedrock outcrop is present within a portion of site, at the north-eastern corner. This outcrop extends further east beyond the site boundary.

An examination of the GSI national bedrock aquifer map classifies the Cloonagh formation as a Regionally Important Aquifer – Karstified (Diffuse) Bedrock (Rkd), i.e. dominated by diffuse rather than conduit flow. Groundwater vulnerability is classified as being extremely vulnerable, given the presence of bedrock outcrop at the site and thin overburden.

The EPA mapviewer indicates that the:

- site is located within the catchment of the Tralee Bay-Feale, Sub-catchment Ardfert-Oughter and river sub-basin Tyshe_020. The River Tyshe (name: TYSHE_020) is located approximately 70m north of the site and flows in a westerly direction before turning north-west and north eventually meeting the sea at Black Rock on Banna Beach approximately 5km north-west of the site.
- River Tyshe has a WFD status (2013-2018) of 'Moderate' or Q Value of 3-4.
- Historic landfill site is located within the Ardfert ground waterbody and is of 'Good' WFD status (2013-2018) and the ground waterbody risk status is currently under review by the EPA.

Site walkovers and a review of aerial photography indicates that a stream/drainage ditch which runs along the northern perimeter of the site, is likely to provide a hydrological link between the site and the River Tyshe.



4. TIER 2 AND 3 RISK ASSESSMENT FINDINGS

The Tier 3 Risk Assessment reviewed the findings of the Tier 1 Risk Assessment undertaken by Kerry County Council and amended by FT, the Tier 2 site investigation and Risk Assessment (undertaken by FT) and assessed and determined the overall risk the site may pose to the receiving environment. Based on the potential overall risk of the site on the environment, the Tier 3 Risk Assessment determined appropriate remediation measures for the site.

In 2019, a site investigation was undertaken as part of Tier 2 Risk Assessment and included the following elements:

- Site walkover.
- 1 No. Geophysical survey (2D resistivity and seismic refraction profiling undertaken by Minerex).
- 4 No. trial pit excavations (undertaken by Causeway Geotech (CGL))
- Installation and monitoring of 2 No. groundwater boreholes.
- Topographical survey.

A site walkover was conducted prior to site investigation works by an FT Engineer and ecologist in February 2019. Geophysical surveys were undertaken on the 8th and 28th of March 2019. Trial pitting was undertaken on the 29th May 2019. Two rounds of groundwater quality monitoring were attempted at the site on the 16th July and 3rd September 2019¹. Two surface water monitoring rounds were carried out on the 19th July and 6th September 2019. For monitoring parameters and results please see Appendix 3.

The Tier 2 site investigation indicates that the insitu soil cap is approximately 1.0 m deep and that the historic landfill typically contains mixed municipal/household waste deposited within a single infill area over an area approximately 1,675 m². It is estimated that the landfill contains approximately 5,025 m³ of waste. This estimate assumes an average thickness of waste and made ground of 3 m albeit that waste extends to depths of 4.2 m at some locations.

Tier 2 groundwater sampling indicated exceedances in levels of ammoniacal nitrogen (as N), Chloride, Iron, Manganese, Potassium, Calcium Carbonate (alkalinity). Iron, Manganese and alkalinity are typical of the local bedrock hydrochemistry. Elevated ammonia, chloride and potassium concentrations are indicative that landfill waste body may be impacting groundwater quality locally. It is noted that the measured groundwater level indicates the local groundwater regime is not connected to the River Tyshe surface water body to the north of the site.

Results from surface water sampling show very little variation in parameter levels between upstream and downstream sampling locations. All results were found to be below the Maximum Admissible Concentration (MAC) Regulations (1989) and the Environmental Quality Standard (EQS) for Surface Waters Regulations (2009) assessment criteria. The results indicate the landfill is not having an impact on surface water quality.

¹ No groundwater samples were recovered on the 16th of July 2019 as the boreholes were dry. On the 3rd September a single sample could only be recovered at one borehole (BH01) as the other borehole remained dry. The static groundwater level from the 3rd September 2019 was calculated from the single sample.



Based on the findings of the modelling exercises and quantitative risk assessment, the Tier 3 assessment determined that:

- Leachate generated at the landfill site is not likely to have a negative impact on groundwater quality at the Ardfert Public Water Supply or groundwater downstream of the site and the risk of the deposited waste causing a deterioration in groundwater quality at the water supply aquifer is low to very low.
- Landfill gas is relatively low, the concentrations of gas detected during fielding monitoring indicates that landfill gas will continue to be produced.
- The risk of surface water contamination from the waste body is considered to be extremely low given that there is no evidence of leachate breakouts, the cap typically exceeds 1.0 m in thickness and underlying waste is typically inert and as such will not be subject to significant settlement which might otherwise create preferential pathways.

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5. PROPOSED REMEDIATION WORKS

The historic landfill site has an effective cap with a predominantly inert waste body and no significant settlement. It was determined that due to the site's relative proximity to the Ardfert Water Supply that minor remedial capping works are required. Remediation works will further isolate the waste body from rainfall inputs.

5.1 Overview

Proposed works for Ardfert historic landfill are outlined in Section 5 - Remedial Action Plan of the Tier 3 Risk Assessment report. The proposed works are comprised of the following elements:

- Scrub within the footprint and on the perimeter to be removed (0.1675ha)
- Topsoil layer to be rotovated and supplemented if required to establish a 200 mm topsoil layer (0.1675ha)
- Grass seeding
- Regular maintenance requiring a minimum 3 mowings per annum
- Perimeter fencing (164m),
- Groundwater and surface water monitoring regime,
- Landfill gas monitoring regime, and
- 1 no. borehole.

The remediation plan is presented in drawing P1766-0100-0002 and existing (BH01 and BH02) and proposed borehole (BH03) are presented in drawing P1766-0100-0003 which are appended to the Tier 3 Risk Assessment, located in Appendix 2 of this report.

5.1.1 Construction Phase

The topsoil layer will be rotovated (168m³) and supplemented, if required, to establish a 200 mm topsoil layer (335m³) and graded to ensure no localised surface depressions are present. Top surface to be re-profiled to remove local depressions to facilitate improved surface runoff and rolled thereafter. Site to be seeded using permanent rhizobium inoculated pasture species rich clover grass mix which will be maintained. The site will be fenced off to prevent poaching by livestock.

5.1.2 Operational Phase / Post Construction

There will be no operational activities associated with this site other than conducting environmental mentoring. This includes no further ground excavations.

The two existing wells used for Tier 2 monitoring will be used as part of groundwater and landfill gas monitoring regimes. An additional groundwater monitoring well will be installed at a location (to be confirmed) to the north-west of the site.



This well is to be installed directly downgradient of the waste body between the Ardfert Landfill and the Ardfert Public Water supply. Surface water monitoring will continue at Tier 2 monitoring locations. The new well location and monitoring works shall be cognisant of the future site use.

The suite of tests required for groundwater and surface water monitoring shall adhere to the EPA Landfill Monitoring landfill manual minimum monitoring requirements for surface water, groundwater and leachate. presented in Table C.2 of the EPA's *Landfill Manuals - Landfill Monitoring, 2nd Edition (2003)*. Groundwater samples shall be taken quarterly. Surface water samples shall be taken every 6 months.

Gas sampling should be carried out using a calibrated gas analyser for the following parameters:

- Methane.
- Carbon dioxide.
- Oxygen.
- Carbon monoxide.
- Temperature.

Gas wells on or immediately adjacent to historic waste body should terminate at least 3.0 m above adjacent ground surfaces and be capped to prevent rainfall ingress and insertion of ignition sources (cigarettes or other). Elsewhere monitoring boreholes can be terminated within 500 mm of ground level to mitigate visual impact.

For the purposes of this AA Screening the unmitigated effects of the proposed works are only being considered. This AA Screening report does not consider measures included to reduce and / or avoid potential significant effects to a European site.

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6. STAGE ONE – SCREENING REPORT

6.1 Brief Description of the European Sites within 15km of the Development

There are 10 European sites within the zone of influence (15 km) of the project (see Figure 6-1). Of these 10 European sites, 6 are SACs and four are SPAs. Table 6-1 lists these European sites, including their qualifying interests, conservation objectives and known threats to these sites (according to information provided by the NPWS (www.npws.ie)). The 10 European sites are as follows:

- Akeragh Banna and Barrow Harbour cSAC (000332); 2.5km from historic landfill site
- Tralee Bay Complex SPA (004188); 2.5km from historic landfill site
- Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070); 5.9km from historic landfill site
- Magharee Islands SAC (002261); 6.9km from historic landfill sit
- Magharee Islands SPA (004125); 8.4km from historic landfill site
- Kerry Head SPA (004189); 8.9km from historic landfill site
- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161); 9.2km from historic landfill site
- Slieve Mish Mountains cSAC (002185); 9.7km from historic landfill site
- Ballyseedy Wood SAC (002112); 11km from historic landfill site
- Lower River Shannon cSAC (002165); 11.9km from historic landfill site

No Hydrological Link

Sites with no hydrological link to Ardfert historical site:

- Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070)
- Magharee Islands SAC (002261)
- Magharee Islands SPA (004125)
- Kerry Head SPA (004189)
- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)
- Slieve Mish Mountains cSAC (002185)
- Ballyseedy Wood SAC (002112)
- Lower River Shannon cSAC (002165)

Hydrological Link

Sites with a hydrological link to Ardfert historic landfill site:

- Akeragh Banna and Barrow Harbour cSAC (000332)
- Tralee Bay Complex SPA (004188)



Aerial photography indicates that a drainage ditch runs along the historic landfill's northern boundary and is linked to the River Tyshe. There is an instream distance of 51.4m between the perimeter drain and the Tyshe River. The Tyshe River travels a further 5.9km (instream distance) before reaching the overlapping SAC and SPA.

Groundwater link

Sites with a groundwater link the historic landfill at Ardfert:

- Akeragh Banna and Barrow Harbour cSAC (000332)
- Tralee Bay Complex SPA (004188)

Both the SAC and SPA are located within the outer reaches of the same ground waterbody (Ardfert) as the historic landfill site.

Screening

Screening continues for all 10 European sites in Section 6.2.

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Table 6-1: European Sites within the zone of influence

Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
Akeragh Banna and Barrow Harbour cSAC (000332)	To maintain (M) and restore (R) the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4). Conservation Objectives available for site: 27 Jan 2017 [Version 1].	<ul style="list-style-type: none"> • Annual vegetation of drift lines [1210] (M) • Salicornia and other annuals colonising mud and sand [1310] (M) • Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330] (R) • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] (M) • Embryonic shifting dunes [2110] (M) • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] (R) • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] * (R) • Humid dune slacks [2190] (R) • European dry heaths [4030] (M) 	<p><u>High Level (inside site)</u> G01.02 Walking, horseriding and non-motorised vehicles</p> <p><u>High Level (outside site)</u> G01.02 Walking, horseriding and non-motorised vehicles G02.01 Golf course G02.08 Camping and caravans</p> <p><u>Medium Level (inside site)</u> C01.01.02 Removal of beach materials A04 Grazing</p> <p><u>Medium Level (outside site)</u> A04 Grazing</p>	2.5
Tralee Bay Complex SPA (004188)	To maintain (M) or restore (R) the favourable conservation condition of the Annex I species for which the SPA has been selected (further details available in Appendix 4).	<ul style="list-style-type: none"> • Whooper Swan (<i>Cygnus cygnus</i>) [A038] (M) • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] (M) • Shelduck (<i>Tadorna tadorna</i>) [A048] (M) • Wigeon (<i>Anas penelope</i>) [A050] (M) • Teal (<i>Anas crecca</i>) [A052] (M) • Mallard (<i>Anas platyrhynchos</i>) [A053] (M) • Pintail (<i>Anas acuta</i>) [A054] (M) • Scaup (<i>Aythya marila</i>) [A062] (M) 	<p><u>High Level (inside site)</u> G01.02 Walking, horseriding and non-motorised vehicles</p> <p><u>High Level (outside site)</u> E01 Urbanised areas, human habitation</p> <p><u>Medium Level (inside site)</u> C01.01.02 Removal of beach materials A04 Grazing</p>	2.5



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
	Conservation Objectives available for site: 22 Apr 2014 [Version 1]	<ul style="list-style-type: none"> • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] (M) • Ringed Plover (<i>Charadrius hiaticula</i>) [A137] (M) • Golden Plover (<i>Pluvialis apricaria</i>) [A140] (M) • Grey Plover (<i>Pluvialis squatarola</i>) [A141] (M)/(R) • Lapwing (<i>Vanellus vanellus</i>) [A142] (M) • Sanderling (<i>Calidris alba</i>) [A144] (M) • Dunlin (<i>Calidris alpina</i>) [A149] (M) • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] (M) • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] (M) • Curlew (<i>Numenius arquata</i>) [A160] (M) • Redshank (<i>Tringa totanus</i>) [A162] (M) • Turnstone (<i>Arenaria interpres</i>) [A169] (M) • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] (M) • Common Gull (<i>Larus canus</i>) [A182] (M) • Wetland and Waterbirds [A999] (M) 	<p><u>Medium Level (outside site)</u> A04 Grazing A08 Fertilisation</p> <p><u>Low Level (inside site)</u> G01.01 Nautical sports</p> <p><u>Low Level (outside site)</u> Not applicable</p>	
Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070)	To maintain (M) and restore (R) the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for	<ul style="list-style-type: none"> • Estuaries [1130] (M) • Mudflats and sandflats not covered by seawater at low tide [1140] (M) • Coastal lagoons [1150] * (R) • Large shallow inlets and bays [1160] (M) • Reefs [1170] (M) 	<p><u>High Level (inside site)</u> G05 Other human intrusions and disturbances</p> <p><u>High Level (outside site)</u> Not applicable</p>	5.9



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
	<p>which the SAC has been selected (further details available in Appendix 4)</p> <p>Conservation Objectives available for site: 11 Feb 2014 [Version 1]</p>	<ul style="list-style-type: none"> • Annual vegetation of drift lines [1210] (R) • Perennial vegetation of stony banks [1220] (M) • Salicornia and other annuals colonising mud and sand [1310] (M) • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330] (M) • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] (M) • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] (R) • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] * (R) • Dunes with <i>Salix repens ssp. argentea</i> (<i>Salicion arenariae</i>) [2170] (M) • Humid dune slacks [2190] (R) • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] (M) • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * (R) • Lutra (<i>Otter</i>) [1355] (R) • <i>Petalophyllum ralfsii</i> (<i>Petalwort</i>) [1395] (R) 	<p><u>Medium Level (inside site)</u></p> <p>A10.01 Removal of hedges and copses or scrub F01 Marine and Freshwater Aquaculture K04 Interspecific floral relations A04 Grazing</p> <p><u>Medium Level (outside site)</u></p> <p>A08 Fertilisation B Sylviculture, forestry A04 Grazing G02.01 Golf course E01.03 Dispersed habitation</p> <p><u>Low Level (inside site)</u></p> <p>C01.01 Sand and gravel extraction G02.01 Golf course E03.01 Disposal of household / recreational facility waste E03.01 Disposal of household / recreational facility waste G01.01 Nautical sports F02.03 Leisure fishing A08 Fertilisation</p>	



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
			<p><u>Low Level (outside site)</u> E02 Industrial or commercial areas</p>	
Magharee Islands SAC (002261)	<p>To maintain (M) the favourable conservation condition of the Annex I habitat for which the SAC has been selected (further details available in Appendix 4)</p> <p>Conservation Objectives available for site:13 Dec 2013 [Version 1]</p>	<ul style="list-style-type: none"> Reefs [1170] (M) <p style="color: red; transform: rotate(-45deg); font-size: small;">Consent of copyright owner required for any other use. For inspection purposes only.</p>	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> Not applicable</p> <p><u>Medium Level (outside site)</u> Not applicable</p> <p><u>Low Level (inside site)</u> No threats or pressures</p> <p><u>Low Level (outside site)</u> Not applicable</p>	6.9
Magharee Islands SPA (004125)	<p>To maintain or restore the favourable conservation condition of the Annex I species for which the SPA has been selected (further details available in Appendix 4).</p>	<ul style="list-style-type: none"> Storm Petrel (<i>Hydrobates pelagicus</i>) [A014] Shag (<i>Phalacrocorax aristotelis</i>) [A018] Barnacle Goose (<i>Branta leucopsis</i>) [A045] Common Gull (<i>Larus canus</i>) [A182] Common Tern (<i>Sterna hirundo</i>) [A193] Arctic Tern (<i>Sterna paradisaea</i>) [A194] Little Tern (<i>Sterna albifrons</i>) [A195] 	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> Not applicable</p>	8.4



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
	<p>Generic Conservation Objectives available: 21/02/2018 [Version 6]</p>		<p><u>Medium Level (outside site)</u> Not applicable <u>Low Level (inside site)</u> G01.01 Nautical sports A04 Grazing</p> <p><u>Low Level (outside site)</u> Not applicable</p>	
<p>Kerry Head SPA (004189)</p>	<p>To maintain and restore the favourable conservation condition of the Annex I species for which the SPA has been selected (further details available in Appendix 4).</p> <p>Generic Conservation Objectives available: 21/02/2018 [Version 6]</p>	<ul style="list-style-type: none"> • Fulmar (<i>Fulmarus glacialis</i>) [A009] • Chough (<i>Pyrrhocorax pyrrhocorax</i>) [A346] 	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> Not applicable</p> <p><u>Medium Level (outside site)</u> E05 Storage of materials E04.01 Agricultural structures, buildings in the landscape</p> <p><u>Low Level (inside site)</u> A04.03 Abandonment of pastoral systems, lack of grazing A02 Modification of cultivation practices</p>	<p>8.9</p>



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
			<u>Low Level (outside site)</u> A01 Cultivation A07 Use of biocides, hormones and chemicals	
Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)	<p>To maintain or restore the favourable conservation condition of the Annex I species for which the SPA has been selected (further details available in Appendix 4).</p> <p>Generic Conservation Objectives available: 21/02/2018 [Version 6]</p>	<ul style="list-style-type: none"> Hen Harrier (<i>Circus cyaneus</i>) [A082] <p style="color: red; transform: rotate(-45deg); font-style: italic;">Consent of copyright owner required for any other use. For inspection purposes only.</p>	<u>High Level (inside site)</u> B Sylviculture, forestry <u>High Level (outside site)</u> Not applicable <u>Medium Level (inside site)</u> C01.03 Peat extraction <u>Medium Level (outside site)</u> Not applicable <u>Low Level (inside site)</u> Not applicable <u>Low Level (outside site)</u> A09 Irrigation E01.03 Dispersed habitation D01.02 Roads, motorways D01.01 Paths, tracks, cycling tracks	9.2
Slieve Mish Mountains cSAC (002185)	To maintain or restore the favourable conservation condition of the Annex I species for	<ul style="list-style-type: none"> Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] 	<u>High Level (inside site)</u> A04 Grazing	9.7



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
	<p>which the SAC has been selected (further details available in Appendix 4)</p> <p>Generic Conservation Objectives available: 21/02/2018 [Version 6]</p>	<ul style="list-style-type: none"> Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] <i>Trichomanes speciosum</i> (Killarney Fern) [1421] 	<p><u>High Level (outside site)</u> A04 Grazing</p> <p><u>Medium Level (inside site)</u> J01 Fire and fire suppression C01.03 Peat extraction</p> <p><u>Medium Level (outside site)</u> A10 Restructuring agricultural land holding</p> <p><u>Low Level (inside site)</u> G04.01 Military manouvres</p> <p><u>Low Level (outside site)</u> C01.01.01 A08 Fertilisation E01.03 Dispersed habitation C01.03 Peat extraction</p>	
Ballyseedy Wood SAC (002112)	To maintain or restore the favourable conservation condition of the Annex I habitat for which the SAC has been selected (further details available in Appendix 4)	<ul style="list-style-type: none"> Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * 	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> I01 Invasive non-native species</p>	11

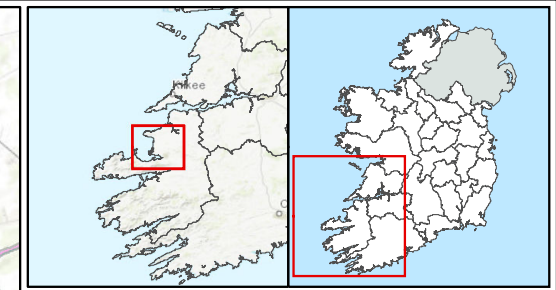
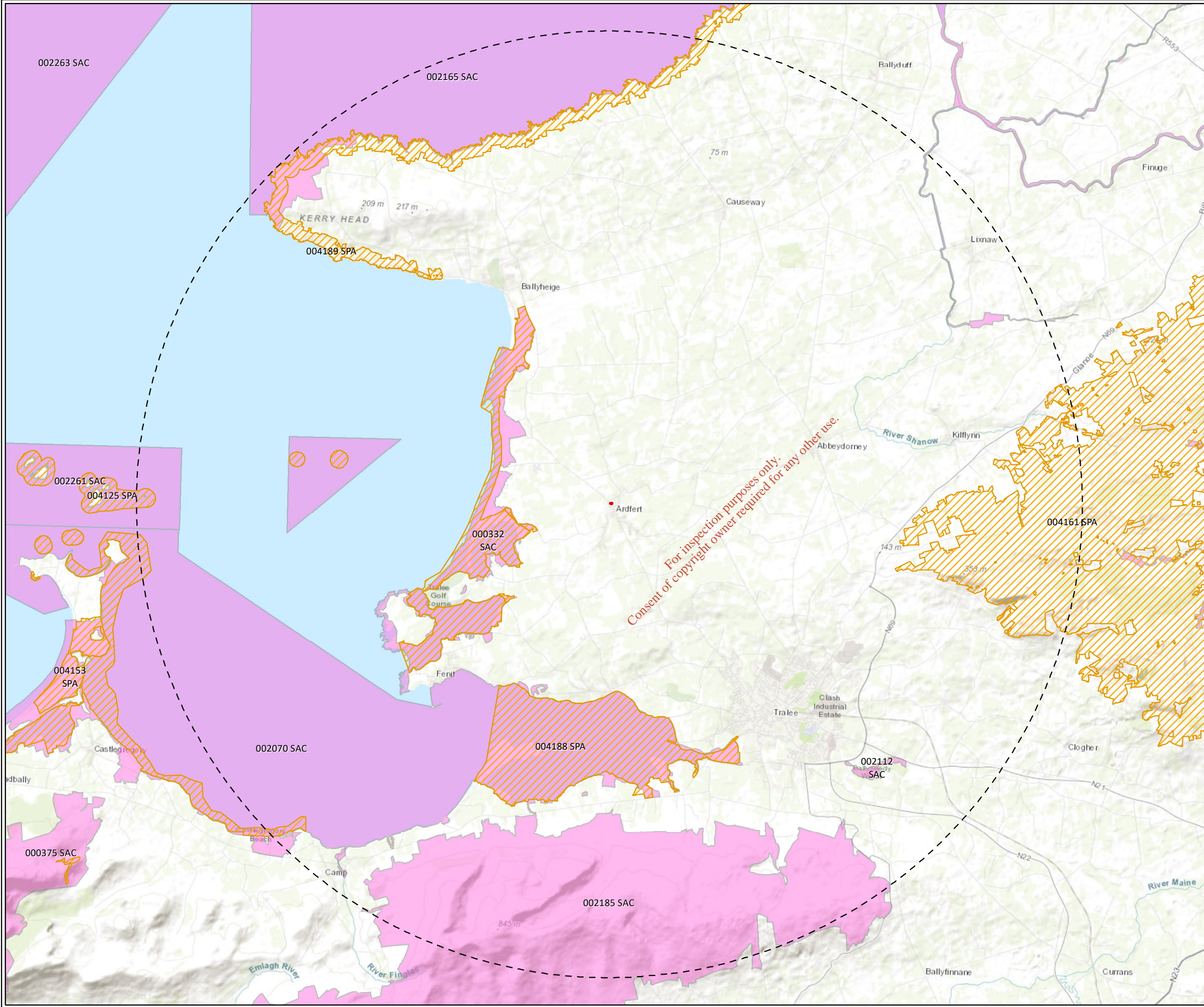


Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
	Generic Conservation Objectives available: 21/02/2018 [Version 6]		<p><u>Medium Level (outside site)</u> A04 Grazing</p> <p><u>Low Level (inside site)</u> A04 Grazing</p> <p><u>Low Level (outside site)</u> E01.03 Dispersed habitation</p>	
Lower River Shannon cSAC (002165)	<p>To maintain (M) and restore (R) the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (further details available in Appendix 4)</p> <p>Conservation Objectives available for site: 07 August 2012 [Version 1]</p>	<ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time [1110] (M) Estuaries [1130] (M) Mudflats and sandflats not covered by seawater at low tide [1140] (M) Coastal lagoons [1150] * (R) Large shallow inlets and bays [1160] (M) Reefs [1170] (M) Perennial vegetation of stony banks [1220] (M) Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] (M) Salicornia and other annuals colonising mud and sand [1310] (M) Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330] (R) Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] (R) Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and 	<p><u>High Level (inside site)</u> Not applicable</p> <p><u>High Level (outside site)</u> Not applicable</p> <p><u>Medium Level (inside site)</u> A08 Fertilisation E03 Discharges A04 Grazing J02.01.01 Polderisation</p> <p><u>Medium Level (outside site)</u> A08 Fertilisation E01 Urbanised areas, human habitation H04 Air pollution, air-borne pollutants E03 Discharges K02.03 Eutrophication (natural) J02.01.02 Reclamation of land from sea, estuary or marsh</p>	11.9



Designated Site (Site Code)	Conservation Objectives	Qualifying Interests	Threats and Pressures	Direct Distance from Historic Landfill Site (km)
		<p><i>Callitricho-Batrachion</i> vegetation [3260] (M)</p> <ul style="list-style-type: none"> • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] (M) • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] * (R) • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] (R) • <i>Petromyzon marinus</i> (Sea Lamprey) [1095] (R) • <i>Lampetra planeri</i> (Brook Lamprey) [1096] (M) • <i>Lampetra fluviatilis</i> (River Lamprey) [1099] (M) • <i>Salmo salar</i> (Salmon) [1106] (R) • <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] (R) • <i>Lutra lutra</i> (Otter) [1355] (R) 	<p><u>Low Level (inside site)</u></p> <p>I01 Invasive non-native species D01.01 Paths, tracks, cycling tracks G01.01 Nautical sports B Sylviculture, forestry F01 Marine and Freshwater Aquaculture E03.01 Disposal of household / recreational facility waste C01.01.02 Removal of beach materials C01.03.01 Hand cutting of peat J02.12.01 Sea defence or coast protection works, tidal barrages J02.10 Management of aquatic and bank vegetation for drainage purposes</p> <p><u>Low Level (outside site)</u> Not applicable</p>	

* indicates a priority Annex I habitat.



- Site Boundary
 - 15km Distance from Site Boundary
 - Special Protection Area (SPA)
 - Special Area of Conservation (SAC)
- Site Code, Site Name, Distance (km)**
- 004188, Tralee Bay Complex SPA, 2.5
 - 004125, Magharee Islands SPA, 8.4
 - 004189, Kerry Head SPA, 8.9
 - 004161, Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA, 9.2
- Site Code, Site Name, Distance (km)**
- 000332, Akeragh Banna and Barrow Harbour SAC, 2.5
 - 002070, Tralee Bay And Magharees Peninsula West To Cloghane SAC, 5.9
 - 002261, Magharee Islands SAC, 6.9
 - 002185, Slieve Mish Mountains SAC, 9.7
 - 002112, Ballyseedy Wood SAC, 11
 - 002165, Lower River Shannon SAC, 11.9

TITLE:	Designated European Sites		
PROJECT:	AA Screening for Ardfert Historic Landfill, Co. Kerry		
FIGURE NO:	6.1		
CLIENT:	Kerry County Council		
SCALE:	1:120000	REVISION:	0
DATE:	27/04/2020	PAGE SIZE:	A3





6.2 Conservation Objectives

According to the Habitat's Directive, the *conservation status of a natural habitat* will be taken as 'favourable' within its biogeographic range when:

- Its natural range and areas it covers within that range are stable or increasing; and
- 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; and
- The conservation status of its typical species is favourable as defined below.

According to the Habitat's Directive, the conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' within its biogeographic range when:

- 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; and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The specific conservation objectives for each site are available on www.npws.ie. These have been accessed for the sites listed in Table 6-1 above on 21st August 2020.

Generic conservation objectives only were available for:

- Magharee Islands SPA (004125); published 21/02/2018 [Version 6]
- Kerry Head SPA (004189); published 21/02/2018 [Version 6]
- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161); published 21/02/2018 [Version 6]
- Slieve Mish Mountains cSAC (002185); published 21/02/2018 [Version 6]
- Ballyseedy Wood SAC (002112); published 21/02/2018 [Version 6]

Detailed site-specific conservation objectives were available for the following sites:

- Akeragh Banna and Barrow Harbour cSAC (000332); published Jan 2017 [Version 1]
- Tralee Bay Complex SPA (004188); published 22 Apr 2014 [Version 1]
- Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070); published 11 Feb 2014 [Version 1]
- Magharee Islands SAC (002261); published 13 Dec 2013 [Version 1]
- Lower River Shannon cSAC (002165); published 07 August 2012 [Version 1]



Conservation objectives and supporting documents for these sites are available from the NPWS through the protected sites search portal at <https://www.npws.ie/protected-sites>.

No management plans were available for any of the sites.

6.3 Potential Cumulative Effects

In considering whether the proposed development, by itself or in combination with other plans and projects, has the potential to affect the conservation objectives of the designated sites within 15km of the proposed development, the following were considered:

- Kerry County Council Planning Enquiry System
- Kerry County Development Plan 2015-2021
- Tralee Municipal District Local Area Plan 2018-2024
- Permitted projects in the vicinity of the development
- Proposed projects in the vicinity of the development

A planning search limited to applications submitted within the townlands overlapping and surrounding the historic landfill site (Ardfert and Skrillagh) during the previous 5 years was conducted on 21st August 2020.

Of the planning applications identified only one (Ardfert Quarry) is of a scale or type that could act cumulatively with the proposed remediation works at the historic landfill site are proposed or consented in the townlands overlapping and surrounding the site. Consented and proposed developments in these townlands are few and comprised of the construction/extension of residential and agricultural buildings.

Ardfert Quarry

An operating limestone quarry, Ardfert Quarry is located approximately 1.9km to the northeast of the historic landfill site. The quarry has also received permission (ID: 151063) for an extension. The quarry is hydrologically linked to the River Tyshe upstream of the historic landfill and therefore is hydrologically connected to the Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188). The EPA mapviewer indicates that two first order tributaries run through the quarry whilst aerial photography does not indicate streams within the site; and the Environmental Impact Statement (EIS) states that they have been culverted within the footprint of the site. The EPA mapviewer also indicates that the quarry is located within the same ground waterbody as the site (Ardfert).

The quarry currently has a water discharge licence (Ref:AS/W82). The Environmental Impact Statement for the permitted extension indicated that the quarry does and will continue to pump groundwater and release it to the River Tyshe. In the past whilst water quality has remained the same, there have been spikes in suspended solid concentrations. Also, the release in pumped groundwater has caused flooding downstream of the River Tyshe. The Appropriate Assessment Screening Report carried out for the extension application concluded that there will be no significant impacts on its own or cumulatively with any other development. Planning conditions for the development include a Water Management Plan and Dust Management and Monitoring Plan.



It is unknown if extension works at the quarry have commenced. Prior to extension works at the quarry suspended solid release spikes are likely to continue. However, the fact that historical water quality sampling indicates that water quality has not changed indicates that suspended solid spikes are not a common occurrence and are not significant. As suspended solid release from proposed remediation works at Ardfert historic landfill will be limited and temporary (over a 3-4 week period), a cumulative suspended solids release will not be significant and will not have a cumulative impact on Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188).

During extension works the release of suspended solids will be mitigated via the Water Management Plan and Dust Management and Monitoring Plan. As suspended solid release from remediation works at Ardfert Historic landfill will be limited and temporary, a cumulative suspended solids release will not be significant and will not have a cumulative impact on of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188).

Other Historic Landfills

Within Ardfert historic landfill's 15km buffer there are 10 European sites. Of these 10 European sites, one or more is located within the 15km buffer of 6 other historical landfills which require remediation works (see Table 6-2 below for more information). Of these 6 historic landfills, two are located in north County Kerry (Ahascra, Listowel), three are located in mid County Kerry (Castleisland, Rockfield, Tralee) and one is located in west Kerry (Dingle). The closest historic landfill to Ardfert historic landfill is Tralee historic landfill, located ca. 8.4km southeast of Ardfert historic Landfill.

Pathways for surface water runoff (containing suspended solids) and leachate from Ardfert historic landfill are via the perimeter drainage ditch which feeds into the River Tyshe. The potential cumulative effect (if any) between Ardfert historic landfill site and the other historical sites on European sites on the European within Ardfert historic landfill's 15km buffer are assessed below.

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Table 6-2: European sites located within 15km of Ardfert Historic Landfill and Seven Other Historic Landfills (Requiring Remediation)

European sites within Ardfert historic landfill's 15km buffer	North Kerry Historic Landfills		Mid Kerry Historic Landfills			West Kerry Historic Landfill
	Ardfert	Listowel	Castleisland	Rockfield	Tralee	Dingle
	Distance between Historic Landfill sites and European Sites (km)					
Ballyseedy Wood SAC (002112)			12.9		3.2	
Kerry Head SPA (004189)	7.9					
Lower River Shannon cSAC (002165)	1.5	0	6.1		13.2	
Magharee Islands SAC (002261)					14.3	
Magharee Islands SPA (004125)						
Slieve Mish Mountains cSAC (002185)			13.3	14.6	2.3	
Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)	9.9	5	2.9	12	7.2	
Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070)						12.3

[Akeragh Banna and Barrow Harbour cSAC \(000332\) and Tralee Bay Complex SPA \(004188\)](#)

The ground waterbody of Ardfert historic landfill overlaps with that of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188). Ardfert historic landfills existing soil cap is estimated to be 1m deep. Remediation works will require site clearance of vegetation the rotavating of topsoil (20cm deep) and reprofiling of topsoil.

With regards to surface water and leachate, there is an indirect hydrological link between Ardfert historic landfill and Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) via the River Tyshe. As the wastebody will not be excavated remediation works will not increase leachate production and existing levels of leachate entering perimeter stream/drainage ditch will not be affected during remediation works.

Surface water runoff will leave the site via existing perimeter stream/drainage ditch. The surface water runoff may contain suspended solids. Suspended solids entering the perimeter silt/drainage ditch will be diluted in the receiving waterbody.



Emissions entering the perimeter stream/drainage ditch will travel 50.4m (instream distance) before entering the River Tyshe and a further 5.9km (instream distance) before reaching the overlapping SAC and SPA. Distance and dilution factor will result in negligible levels of suspended solids entering the coastal/marine European sites. All the SACs 9 qualifying interests are coastal/marine habitats and include no transitory species. The special conservation interests of the SPA are unlikely to find valuable foraging/breeding within the site or along the first, second third order tributaries of the River Tyshe as they are not coastal/marine habitats. See Section 6.5 for more detail.

There will be no effect on the qualifying interests/special conservation interests of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) due to suspended solids or leachate emissions, there can therefore be no cumulative in combination effects with any other historical landfill sites

Other European sites

Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070), Magharee Islands SAC (002261), Magharee Islands SPA (004125), Kerry Head SPA (004189), Stack's to Mullaghareirk Mountains West Limerick, Hills and Mount Eagle SPA (004161), Slieve Mish Mountains cSAC (002185) and Ballyseedy Wood SAC (002112), Lower River Shannon cSAC (002165) are located 2.5km or greater from Ardfert historic landfill. Ardfert historic landfill site does not have a hydrological link with any of the aforementioned Europeans sites. Lower River Shannon cSAC (002165) is the only SAC with transitory qualifying interests.

Transitory qualifying interests of the Lower River Shannon cSAC (002165) are: Otter, Salmon and Lamprey (Sea, Brook, River sp.). There is a 17km instream distance (along the coast) between the SAC and the historic landfill site. This distance is highly likely to be outside an otter's territory (of the SACs otter population). With regards to salmonids, aerial photography indicates that the River Tyshe has been largely improved, i.e., straightened and the EPA mapviewer indicates the River Tyshe has a WFD status (2013-2018) of 'Moderate' or Q Value of 3-4. This indicates that the River Tyshe would not be of high ecological value to breeding/feeding salmonids and is highly unlikely to be used by them. There will be no effect to the Transitory qualifying interests of the Lower River Shannon cSAC (002165)

The special conservation interests of the aforementioned SPAs are unlikely to find valuable foraging/breeding habitat within the site or along the first, second third order tributaries of the River Tyshe as they are coastal/marine species.

Ardfert historic landfill site will have no impact on the aforementioned European sites, Ardfert historic landfill will therefore not have a cumulative in combination effect with any other historical landfill sites. See Section 6.5 for more information.

6.4 Screening Assessment Criteria

Throughout this section the line items in *italics* refer to suggested instructions for information to be contained in a screening assessment, and in an appropriate assessment from the guidance document '*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, 2001). The standard 'Screening Matrix' and 'Finding of No Significant Effects Report Matrix' in Annex 2 of this guidance document are also followed.



As set out in NPWS guidance (DoEHLG, 2010), the task of establishing whether a plan or project is likely to have an effect on a European site(s) is based on an evaluation using available information and data (e.g., water quality data), supplemented as necessary by local site information and ecological surveys. This results in a determination by the competent authority as to whether there may be a significant effect on the designated site. A precautionary approach is required.

Some examples given in the NPWS guidance (DoEHLG, 2010) of effects that are likely to be significant are:

1. Any effect on an Annex I habitat,
2. A reduction in the area of a habitat of conservation interest in a European site or a reduction in the area of a European site,
3. Direct or indirect damage to the physical quality of the environment (e.g., water quality and supply, soil compaction) in the European site,
4. Serious or ongoing disturbance to species or habitats for which the European site is selected (e.g., increased noise, illumination and human activity),
5. Direct or indirect damage to the size, characteristics or reproductive ability of populations in the European site,
6. Interference with mitigation measures put in place for other plans or projects.

6.5 Screening Matrix

Assessment Criteria	Discussion of Potential Effects
<p><i>Describe any likely direct, indirect or secondary impacts [effects] of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</i></p> <ul style="list-style-type: none"> ▪ <i>Size and scale;</i> ▪ <i>Land-take;</i> ▪ <i>Distance from Natura 2000 site or key features of the site;</i> ▪ <i>Resource requirements;</i> ▪ <i>Emissions;</i> ▪ <i>Excavation requirements;</i> ▪ <i>Transportation requirements;</i> ▪ <i>Duration of construction, operation etc.;</i> ▪ <i>Other.</i> 	<p>Size and scale</p> <p>Potential effects: None</p> <p>Remediation works will be undertaken within a 1.01ha single parcel of land and will cover an area of 0.1675ha. Remediation works will involve the removal of scrub, rotovating of topsoil and supplemented if required to establish a 20cm topsoil layer (168m³ excavation), reprofiling of surface to remove local depressions to facilitate improved surface runoff and seeding of permanent rhizobium inoculated pasture species rich clover grass mix and fencing off site to prevent poaching by livestock. Continued monitoring of surface water, groundwater and landfill gas for the site and a new borehole will be required outside of the site to further accommodate groundwater monitoring.</p> <p>No effects will occur on any European site due to size and scale.</p> <p>Land-take</p> <p>Potential Effects: None.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>The historic site is not located within any European site and there will therefore be no land-take of any European site.</p> <p>Distance from Natura 2000 sites</p> <p>Potential Effects: None.</p> <p>The closest European sites are Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) which are both located 2.5km from the historic landfill. There will be no impact on any European site due to distance of proposed remediation works.</p> <p>Resource requirements</p> <p>Potential Effects: None</p> <p>There will be no resource requirements from any European site as a result of the proposed remediation works.</p> <p>Emissions</p> <p>Potential Effects: None</p> <p><i>During Remediation Works</i></p> <p>During remediation works emissions created by the works will be comprised of soil sediment. Soil sediment will be produced during:</p> <ul style="list-style-type: none"> • Clearance of scrub from site (0.1675ha) • Rotavating of an area of 0.1675ha to establish a 20cm topsoil layer (excavation of 168m³), supplemented where required. • Reprofilling the surface of the site • Drilling of 1 no borehole (outside of site) • Installation of fencing (164m). <p>The proposed borehole will be located ca. 314m north of the historic landfill site perimeter stream/drainage ditch. The borehole will be located four land parcels away from the site. Due to distance and field boundaries/buffers any surface water runoff (containing suspended solids) will not enter the perimeter stream/drainage ditch.</p> <p>At present leachate migration to groundwater is deemed to be low to negligible and is unlikely to negatively impact groundwater quality. The potential for leachate emissions to enter the River Tyshe are considered low. Whilst no leachate breakouts were discovered during walkovers there is a potential risk of leachate breakouts entering the River Tyshe.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>During remediation works the top 20cm of the site’s surface will be rotavated and reprofiled. The interred waste body (located 1m below the surface) will not be disturbed. Remediation works will therefore not result in the production of additional leachate to groundwater or surface water.</p> <p><u>Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188)</u></p> <p>The ground waterbody of the Ardfert historic landfill overlaps with that of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188). As described above, present leachate migration to groundwater is deemed to be low to negligible and is unlikely to negatively impact groundwater quality and remediation works will not result in additional leachate entering the underlying ground waterbody.</p> <p>With regards to surface water and leachate, there is an indirect hydrological link between Ardfert historic landfill and Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) via the River Tyshe. As described above, at present the potential for leachate emissions to enter the River Tyshe are considered low, whilst leachate breakouts remain a potential risk to the River Tyshe. As detailed above remediation works will not add to leachate emissions.</p> <p>With regards to surface water containing suspended solids, there is an indirect hydrological link between Ardfert historic landfill and Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) via the River Tyshe. Suspended solids levels entering the perimeter stream/drainage ditch will be limited due to the area of works (0.1675ha), works type (rotavating (20cm depth) and reprofiling (168m³)). Also, suspended solids entering the perimeter stream/drainage ditch will travel 50.4m (instream distance) into the River Tyshe and a further 5.9km (instream distance) before reaching the overlapping SAC and SPA. Distance and dilution factor will result in negligible amounts of silt entering the coastal/marine European sites. All the SACs 9 qualifying interests are coastal/marine habitats and include no transitory species. The special conservation interests of the SPA are unlikely to find valuable foraging/breeding habitat along the first, second third order tributaries of the River Tyshe as they are not coastal/marine habitats.</p> <p>There will be no effect on the qualifying interests/special conservation interests of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) due to emissions.</p>



Assessment Criteria	Discussion of Potential Effects
	<p><u>Other European sites</u></p> <p>Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070), Magharee Islands SAC (002261), Magharee Islands SPA (004125), Kerry Head SPA (004189), Stack's to Mullaghareirk Mountains West Limerick, Hills and Mount Eagle SPA (004161), Slieve Mish Mountains cSAC (002185), Ballyseedy Wood SAC (002112), Lower River Shannon cSAC (002165) are located 2.5km or greater from Ardfert historic landfill. Ardfert historic landfill site does not have a hydrological link with any of the aforementioned Europeans sites. The special conservation interests of the aforementioned SPAs are unlikely to find valuable foraging/breeding habitat within the site or along the first, second third order tributaries of the River Tyshe these habitats are freshwater/farmed land adjacent to a built area. The special conservation interests of Magharee Islands SPA (004125) and Kerry Head SPA (004189) require coastal/marine habitat whilst the sole special conservation interest of Stack's to Mullaghareirk Mountains West Limerick, Hills and Mount Eagle SPA (004161); Hen Harrier requires upland habitats with forestry.</p> <p>The Lower River Shannon cSAC (002165) is the only SAC with transitory qualifying interests; Otter, Salmon and Lamprey (Sea, Brook, River sp.). There is a 17km instream distance (along the coast) between the SAC and the point where surface water runoff containing suspended solids would enter the River Tyshe. This distance is highly likely to be outside an otter's territory (of the SACs otter population). If an otter from the SACs otter population were to travel to the River Tyshe, suspended solid production will be limited and temporary and will be diluted within the River Tyshe and would therefore have a negligible effect on prey availability. With regards to salmonids, aerial photography indicates that the River Tyshe has been largely improved, i.e., straightened and the EPA mapviewer indicates the River Tyshe has a WFD status (2013-2018) of 'Moderate' or Q Value of 3-4. This indicates that the River Tyshe would not be of high ecological value to breeding/foraging salmonids and it is highly unlikely to be used by them. No direct or indirect effect will occur to the transitory qualifying interests of the Lower River Shannon cSAC (002165).</p> <p>There will be no effect on Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070), Magharee Islands SAC (002261), Magharee Islands SPA (004125), Kerry Head SPA (004189), Stack's to Mullaghareirk Mountains West Limerick, Hills and Mount Eagle SPA (004161), Slieve Mish Mountains cSAC (002185), Ballyseedy Wood SAC (002112) or Lower River Shannon cSAC (002165) due to emissions.</p>



Assessment Criteria	Discussion of Potential Effects
	<p><i>Following Remediation Works</i></p> <p>Following remediation works leachate will continue to be produced and enter groundwater for a time. However, remediation works will prevent leachate outbreaks and they will also prevent rainwater from infiltrating the interred waste body therefore reducing the potential for leachate to be produced.</p> <p>During the establishment of the grass layer (will take several weeks) on the newly engineered cap, collected surface water runoff leaving the site =may contain suspended solids. Levels of suspended solids will be minimal and will be produced for a limited period.</p> <p><u>Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188)</u></p> <p>Suspended solids entering the River Tyshe will be negligible and temporary and will therefore have no effect on Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188).</p> <p>Excavation requirements</p> <p>Potential Effects: None</p> <p>Excavation requirements will be limited to the rotavating of an area of 0.1675ha to establish a 20cm topsoil layer, supplemented where required. This will result in the excavation of 168m³ for use in reprofiling the surface of the site. Suspended solids entering the River Tyshe via a perimeter stream/drainage ditch via surface water runoff will be limited. See above section on 'Emissions' for more information.</p> <p>Transportation requirements</p> <p>Potential Effects: None.</p> <p>Site access will not traverse any European Site.</p> <p>Duration of Construction and Operation</p> <p>Potential Effects: None.</p> <p>It is anticipated that remediation works will occur over approximately three to four weeks. Once remediation works are complete and the grass layer has become established, the site will be mowed three times a year. Following remediation works, environmental monitoring will be undertaken annually and will be ongoing for several years.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>Groundwater monitoring will be undertaken quarterly at three boreholes (proposed located ca. 314m north of site). Surface water monitoring will be undertaken every 6 months as Tier 2 monitoring locations. Landfill gas monitoring will be carried out manually at vertical gas monitoring wells.</p> <p>Cumulative Effects</p> <p>Potential Effects: None/Not Significant</p> <p>A planning search limited to applications submitted within the townlands overlapping and surrounding the historic landfill was conducted on 27th of April 2020.</p> <p>Of the planning applications identified only one (Ardfert Quarry) is of a scale or type that could act cumulatively with the proposed remediation works at the historic landfill site.</p> <p><i>Ardfert Quarry</i></p> <p>Whether or not extension works at the quarry have begun is unknown. The proposed remediation works at Ardfert Historical landfill will not affect groundwater. Prior to extension works at the quarry suspended solid release spikes are likely to continue. However, the fact that historical water quality sampling indicates that water quality has not changed indicates that suspended solid spikes are not a common occurrence and are not significant. As suspended solid release from proposed remediation works at Ardfert Historic landfill will be limited and temporary (over a 3-4 week period), a cumulative suspended solids release will not be significant and will not have a cumulative impact on Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188).</p> <p>During extension works at the quarry the release of suspended solids will be mitigated via the Water Management Plan and Dust Management and Monitoring Plan. As suspended solid release from remediation works at Ardfert Historic landfill will be limited and temporary, a cumulative suspended solids release will not be significant and will not have a cumulative impact on of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188).</p> <p><i>Other Historic Landfills</i></p> <p>There will be no effect on the qualifying interests/special conservation interests of Akeragh Banna and Barrow Harbour cSAC (000332) and Tralee Bay Complex SPA (004188) due to surface water runoff containing suspended solids or leachate emissions, there can therefore be no in combination effects with any other historical landfill sites.</p>



Assessment Criteria	Discussion of Potential Effects
	<p>Ardfer historic landfill site will have no impact on the aforementioned European sites and will therefore not have a cumulative in combination effect with any other historical landfill sites.</p> <p>See Section 6.3 for detailed information.</p>
<p><i>Describe any likely changes to the site arising as a result of:</i></p> <ul style="list-style-type: none"> ▪ <i>Reduction of habitat area;</i> ▪ <i>Disturbance of key species;</i> ▪ <i>Habitat or species fragmentation;</i> ▪ <i>Reduction in species density;</i> ▪ <i>Changes in key indicators of conservation value;</i> ▪ <i>Climate change.</i> 	<p>There will be no direct or indirect reduction in habitat area or habitat fragmentation within any European site as a result of the project due to limited scale of works, nature of works (remediation works will produce a limited amount of silt and the resulting remediation will stop the continuing release of leachate entering groundwater), distance (closest European site is 2.5km away) and lack of any direct hydrological links.</p> <p>There will be no predicted effect via disturbance of key species or reduction of key species as a result of the proposed development due to limited scale of works, nature of works (will produce a limited amount of surface water runoff containing suspended solids during works and works will result in the limit and control of leachate which currently enters groundwater), distance (closest European site is 2.5km away) and lack of any direct hydrological links.</p> <p>There will be no predicted changes in key indicators of conservation value due to the proposed project due to limited scale of works, nature of works (will produce a limited amount of silt during works and works will stop the continuing release of leachate entering groundwater), distance (closest European site is 2.5km away) and lack of any direct hydrological links.</p>
<p><i>Describe any likely impacts [effects] on the Natura 2000 site as a whole in terms of:</i></p> <ul style="list-style-type: none"> ▪ <i>Interference with the key relationships that define the structure of the site;</i> ▪ <i>Interference with key relationships that define the function of the site.</i> 	<p>There are no potential effects on the key relationships that define the structure or function of any European site considered in this Appropriate Assessment Screening due to the proposed development due to limited scale of works, nature of works (will produce a limited amount of silt during works and works will stop the continuing release of leachate entering ground water), distance (closest European site is 2.5km away) and lack of any direct hydrological link.</p>
<p><i>Provide indicators of significance as a result of the identification of effects set out above in terms of:</i></p> <ul style="list-style-type: none"> ▪ <i>loss,</i> ▪ <i>fragmentation,</i> ▪ <i>disruption,</i> ▪ <i>disturbance,</i> 	<p>No effects will occur; therefore, an indicator of significance is not required.</p>



Assessment Criteria	Discussion of Potential Effects
<ul style="list-style-type: none"> ▪ <i>change to key elements of the site (e.g., water quality etc.).</i> 	
<p><i>Describe from the above those elements of the project or plan, or combination of elements, where the above impacts [effects] are likely to be significant or where the scale of magnitude of impacts [effects] is not known.</i></p>	<p>No significant effects or effects of unknown scale or magnitude, either alone or in-combination with other projects or plans will occur.</p>

6.6 Stage One Screening Conclusion

It is concluded beyond reasonable scientific doubt that there are not likely to be significant effects from the proposed development on the 10 European sites identified for consideration (or any other European site), either alone or in combination with other plans or projects.

No significant effects on any of the European Sites within the zone of potential influence are predicted. Therefore, the following 10 European sites have been 'screened out' within the Stage 1: Appropriate Assessment Screening Report:

- Akeragh Banna and Barrow Harbour cSAC (000332)
- Tralee Bay Complex SPA (004188)
- Tralee Bay and Magharees Peninsula, West to Cloghane cSAC (002070)
- Magharee Islands SAC (002261)
- Magharee Islands SPA (004125)
- Kerry Head SPA (004189)
- Stack's to Mullaghareirk Mountains West Limerick Hills and Mount Eagle SPA (004161)
- Slieve Mish Mountains cSAC (002185)
- Ballyseedy Wood SAC (002112)
- Lower River Shannon cSAC (002165)

See Appendix 1 for Findings of No Significant Effects Report.



7. REFERENCES

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