



CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE &  
PLANNING

# CLAREMORRIS CLOSED LANDFILL REMEDIATION PROJECT

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## NATURA IMPACT STATEMENT

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Prepared for: **Mayo County Council**



Comhairle Contae Mhaigh Eo  
Mayo County Council

**Date:** May 2022

J5 Plaza, North Park Business Park, North Road, Dublin 11, D11 PXT0, Ireland

T: +353 21 4964 133 | E: [info@ftco.ie](mailto:info@ftco.ie)

**CORK | DUBLIN | CARLOW**

[www.fehilytimoney.ie](http://www.fehilytimoney.ie)



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## NATURA IMPACT STATEMENT

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**Abstract:** This document is to inform the Competent Authority in carrying out their statutory obligations relating to the Habitats Directive requirement for Appropriate Assessment for plans and projects seeking consent. 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

### 1.1 Overview

Mayo County Council has been granted a Certificate of Authorisation (Ref: H0319-01) to control and maintain a closed landfill at Claremorris, Co. Mayo. The Council will be obliged to carry out remediation measures and monitoring at the closed landfill in accordance with conditions set out under the certificate of authorisation. During the certification process, the Environmental Protection Agency determined the need for Appropriate Assessment as part of screening carried out in accordance with Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). The screening determined potential for significant effects on Lough Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) on the following basis:

*“There is a hydrological connection between the closed landfill and Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) and, despite the fact that these European Sites are located approximately 45km downstream of the site, it cannot be excluded, based on the submitted monitoring results for surface water and groundwater, that the closed landfill will have no effect on these European Sites”.*

A copy of the EPA screening determination is included in Appendix 1.

Given that the need for Appropriate Assessment has been determined, approval for the proposed activity must be sought from An Bord Pleanála (the Board) under Section 177AE of the Planning and Development Act, as amended. This Natura Impact Statement has therefore been prepared as part of the Section 177AE application to the Board, and is intended to inform the Board in making their assessment of whether project-related impacts could have an adverse effect on the integrity of the European sites. The ‘integrity of the site’ is defined as the coherent sum of the site’s ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated (European Commission, 2018).

### 1.2 Methodology

#### 1.2.1 [Guidance](#)

In the preparation of this Natura Impact Statement regard was had to relevant guidance, in particular:

- *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission Notice (2021) Brussels, 28.9.2021 C(2021) 6913 final (European Commission, 2021);*
- *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 (2009, updated 2010);*
- *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (2018). Brussels, 21.11.2018 C (2018) 7621 final;*



### 1.2.2 Process

European Commission notice (2021) prescribes the steps in Appropriate Assessment as follows:

1. Collecting information on the project and on the Natura 2000 site concerned;
2. Assessing the implications of the plan or project in view the site's conservation objectives, individually or in combination with other plans or projects;
3. Ascertaining whether the plan or project can have adverse effects on the integrity of the site;
4. Considering mitigation measures (including their monitoring).

Furthermore, the European Commission Notice C(2018) 7621: prescribes the content of the Appropriate Assessment and notes the following:

- It must be ensured that the appropriate assessment addresses all elements contributing to the site's integrity as specified in the site's conservation objectives and Standard Data Form, and is based on the best available scientific knowledge in the field;
- The information required should be up-to-date;
- The appropriate assessment should also include a comprehensive identification of all the potential effects of the plan or project likely to be significant on the site, taking into account cumulative and other effects likely to arise as a result of the combined action of the plan or project under assessment with other plans or projects.
- It should apply the best available techniques and methods to assess the extent of the effects of the plan or project on the integrity of the site(s).

This Natura Impact Statement (NIS) has been set out to address these requirements and to present sufficient and up-to-date information to allow the Competent Authority to give full consideration to all elements contributing to the sites' integrity and allowing identification of potential impacts and mitigation.



## 2. EUROPEAN SITE AND PROJECT CHARACTERISTICS

### 2.1 European Site Characteristics

The EPA in their screening determination identified that potential for significant effects on Lough Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) cannot be excluded. The characteristics of these European sites are set out hereunder including each site's conservation objectives and conservation interests.

#### 2.1.1 Lough Carra/Mask Complex SAC

The Lough Carra/Mask Complex SAC comprises three lakes: Lough Mask and Lough Carra, with a smaller lake also present, Cloon Lough. Cloon Lough and Lough Carra. The majority of this European Site is located in Co. Mayo, with a portion in Co. Galway. Lough Mask is fed by a number of watercourses, including the Robe River.

Geologically, the area is characterised by Carboniferous limestones. This geology results in a large diversity of habitats. Habitats within the site include oligotrophic lake, bare and scrub-dominated limestone pavement, dry grassland, heath, deciduous woodland, alluvial woodland hard water marl lake, scrub, *Cladium* fen and alkaline fen.

The Natura 2000 – Standard Data Form<sup>1</sup> identified two threats, pressures, and activities with impacts on the site. Pollution to surface waters (limnic and terrestrial, marine, and brackish) (H01) is a medium level impact inside the European Site. Additionally, abandonment/lack of mowing (A03.03) has a high-level impact inside the site. No management plan exists for this site.

The features of interest of this site include a number of Annex I habitats, priority habitats and Annex II species under the EU Habitats Directive, as outlined in Table 2.1.

**Table 2-1: Qualifying interests of Lough Carra/Mask SAC**

Code	Annex	Description	Conservation Objectives
3310	Annex I	Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> )	To restore the favourable conservation condition
3130	Annex I	Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i>	To restore the favourable conservation condition
3140	Annex I	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	To restore the favourable conservation condition
4030	Annex I	European dry heaths	To maintain the favourable conservation condition
6210*	Annex I	Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco-Brometalia</i> ) (* important orchid sites)	To restore the favourable conservation condition

<sup>1</sup> Source: Lough Carra/Mask Complex Natura 2000- Standard Data Form  
<https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF001774.pdf>



Code	Annex	Description	Conservation Objectives
7210*	Annex I	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	To maintain the favourable conservation condition
7230	Annex I	Alkaline fens	To restore the favourable conservation condition
8240*	Annex I	Limestone pavements	To restore the favourable conservation condition
91E0*	Annex I	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	To restore the favourable conservation condition of Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)
1303	Annex II	<i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat)	To restore the favourable conservation condition of Lesser Horseshoe Bat ( <i>Rhinolophus hipposideros</i> )
1355	Annex II	<i>Lutra lutra</i> (Otter)	To maintain the favourable conservation condition of Otter ( <i>Lutra lutra</i> )
1393	Annex II	<i>Hamatocaulis vernicosus</i> (Slender Green Feather-moss)	To maintain the favourable conservation condition of Slender Green Feather-moss ( <i>Hamatocaulis vernicosus</i> )

### 2.1.2 Lough Mask SPA

Lough Mask SPA overlaps with a proportion of the Lough Carra/Mask Complex SAC. This lake is the sixth largest in the country, covering 8,000 ha. The main rivers flowing into the Lough are the Cloon and Robe. The main outflow is to Lough Corrib to the south.

The Natura 2000 – Standard Data Form<sup>2</sup> identified four threats, pressures, and activities with impacts on the site. Only one threat and pressure was identified inside the site, leisure fishing (F02.03) which has a high-level effect. Two medium level threats and pressures were identified outside the site; restructuring agricultural land holding (A10) and fertilisation (A08). Additionally, silviculture and forestry (B) is a threat and pressure with a low effect outside the site.

Lough Mask is an important site for a range of bird species, which are of special conservation objective. These special conservation objectives and their conservation objectives are outlined in Table 2.2.

<sup>2</sup> Source: Lough Mask SPA Natura 2000- Standard Data Form <https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004062.pdf>



**Table 2-2: Special Conservation Objectives for Lough Mask SPA\***

Code	Description	Conservation Objectives
A061	Tufted Duck ( <i>Aythya fuligula</i> )	To maintain or restore the favourable conservation condition of the bird species
A179	Black-headed Gull ( <i>Chroicocephalus ridibundus</i> )	To maintain or restore the favourable conservation condition of the bird species
A182	Common Gull ( <i>Larus canus</i> )	To maintain or restore the favourable conservation condition of the bird species
A183	Lesser Black-backed Gull ( <i>Larus fuscus</i> )	To maintain or restore the favourable conservation condition of the bird species
A193	Common Tern ( <i>Sterna hirundo</i> )	To maintain or restore the favourable conservation condition of the bird species
A195	Greenland White-fronted Goose ( <i>Anser albifrons flavirostris</i> )	To maintain or restore the favourable conservation condition of the bird species
	Wetland and Waterbirds	To maintain or restore the favourable conservation condition of the wetland habitat at Lough Mask SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

\*Only generic conservation objectives are available for Lough Mask SPA

## 2.2 Project Characteristics

### 2.2.1 Project Location

Claremorris closed landfill is located in the townland of Clare, approximately 800m south-east of Claremorris Town, Co. Mayo. The closed landfill capping area footprint is 3.8ha and is located within a larger application site of 5.6ha.

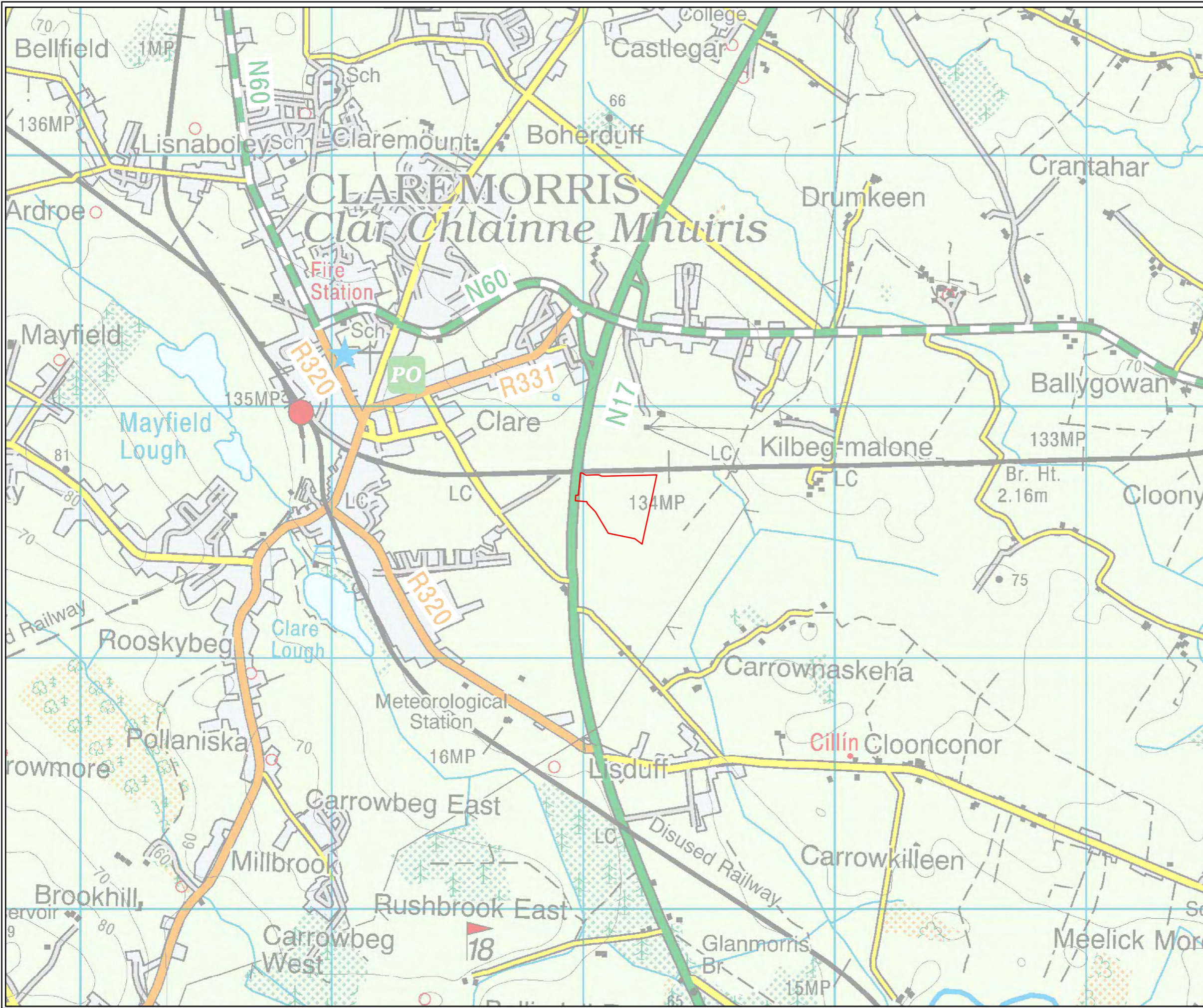
The site operated as a landfill accepting municipal waste from 1982 to March 1996. The site was capped with boulder clay, but no remediation works have been completed. Waste deposited at the site is comprised of municipal and commercial wastes to depths of 6.5m below ground level. The landfill extent covers an area of 32,000 m<sup>2</sup> and initial calculations estimate an interred waste volume of approximately 168,000 – 297,623m<sup>3</sup> at the site.

The western portion of the site, which is to be capped, consists of the following habitat types: wet grassland, forestry plantation, drainage ditches and wet willow-alder-ash woodland. Land to the east of the site is dominated by wet heath/cutover bog. Neighbouring land uses include agricultural grassland, cutover bog, commercial forestry and residential properties located approximately 280m to the west of the site.



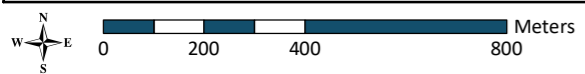
An electrical substation is also located approximately 150m to the north of the site. The site is bound by the Dublin-Westport Railway line to the north, the Knock-Claremorris Bypass (N17) to the west.

The KILBEG-MALONE (EPA code: 30K3711), a 1st order stream crosses the eastern portion of the site travelling in a southerly direction. After flowing for 44km, this stream ultimately enters Lough Mask via the LISDUFF 30 (EPA code: 30L4313) and Robe River (EPA code: 30R0115).



**Legend**  
 Site Boundary

<b>TITLE:</b>	
Site Location	
<b>PROJECT:</b>	
Claremorris Historic Landfill	
<b>FIGURE NO:</b> 1.1	
<b>CLIENT:</b> Mayo County Council	
<b>SCALE:</b> 1:15000	<b>REVISION:</b> 0
<b>DATE:</b> 06/05/2022	<b>PAGE SIZE:</b> A3









## 2.2.2 Project Description

### 2.2.2.1 *Overview Description of the Project*

Mayo County Council proposes to seek the approval of An Bord Pleanála for the completion of Closed Landfill Remediation Works at a Closed Landfill site in Clare, Claremorris, County Mayo.

The application site, as defined by the red line boundary in the accompanying drawings, is 5.6ha in size. The extent of the waste body with the site is 3.2ha. The proposed capping area within the application site is 3.8ha in size.

The proposed development will consist of the following:

- The development of a site access road
- The development of a temporary site compound and office area.
- Site clearance, including the removal of an existing gate, existing timber post and wire fencing and clearance of existing vegetation
- Grading/profiling of the existing site area.
- Installation of an engineered landfill capping system covering an area of 3.8 hectares.
- The installation of stock proof fencing, and a new access gate on-site.
- Landscaping of the final formation of the capping area using a high value native grass cover.

The following will be carried out on-site following on from completion of the proposed development works:

- Ongoing environmental monitoring.
- Oxidation of methane in landfill gas
- Maintenance of engineered cap on-site.
- Maintenance of surface water drainage system on-site.

### 2.2.2.2 *Purpose of/Rationale for the Project*

Mayo County Council is responsible the remediation of Claremorris Closed Landfill, located in the townland of Clare. The landfill is a closed landfill having received waste from 1982 to March 1996. Waste deposited at the site is understood to comprise of municipal and commercial wastes to depths of approximately 6.5 m.

The site is bounded by a railway to the North and by the Knock-Claremorris Bypass (N17) to the West, the other sides are bounded by agricultural land (boggy ground).

The EPA issued a Certificate of Authorisation (CoA) for the site on the 19th of August 2021 (Licence number: H0319-01). Condition 3 of the CoA requires MCC to implement remediation works to this closed landfill in order to ensure “..proper closure of the activity ensuring protection of the environment”. The CoA is issued under Regulation 7 (6) of the Waste Management (Certificate of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008. The purpose of the proposed remediation works is to implement CoA Condition 3.



Construction of an engineered cap is required to isolate the waste body from rainfall inputs which contribute to leachate generation which has the potential to contaminate surface and groundwaters. The proposed engineered cap will also be designed to mitigate the risk of landfill gas migration.

#### 2.2.2.1 Construction Works

It should be noted at this stage of the report that the 'construction' phase of the project relates to the remediation 'works' to be undertaken in the case of a closed landfill, as well as enabling works.

The construction period for the proposed development has been estimated to be in the region of 6-8 months.

A detailed design will be prepared for the works prior to commencement. The works will take place in accordance with a Construction Environmental Management Plan.

The remediation works will include:

- Development of a temporary site compound outside of the proposed engineered capping area footprint.
- Invasive species management
- Site Clearance.
- Grading/Profiling of Existing Profile
- Installation of engineered landfill capping system.
- Landscaping.

##### 2.2.2.1.1 Traffic Management

The Contractor will be required to implement a traffic management plan to manage safe access and egress of construction vehicles from the site.

The Proposed Traffic Management Plan is shown in a drawing enclosed with this planning application (Drawing Reference: P21-287-0100-0008).

##### 2.2.2.1.2 Development of Temporary Site Compound and Office Area

The temporary site compound shall comprise a materials storage area, site offices and a parking area. Material storage compound, parking area and site offices in the form of portacabins and site canteen/welfare facilities (Contractor and Employers Representatives) will be provided to the north-east of the site outside the footprint of the capping area. The temporary site compound shall be founded on a small area that will be levelled, compacted and overlaid with gravel surfacing overlying a geogrid and geotextile. These materials will be removed from site following completion of the works.

Existing access to the site off the N17 will be extended to the proposed temporary site compound and will be re-surfaced with Clause 804.

Waste from the welfare facilities (i.e., Portaloo(s)) will be stored temporarily prior to disposal at a licensed wastewater treatment plant.



Generators will be used on-site for power supply during the temporary works. Water will be provided via water tankers.

Periodic road sweeping will be required where necessary.

#### *2.2.2.1.3 Site Clearance*

Following completion of the invasive species management, overgrown vegetation on the central area of the site will be cut back, mulched and re-spread on-site. Any vegetation left will be dispatched to an authorized waste facility for disposal.

A Demolition and Site Clearance Plan enclosed with this application shows the areas of dense vegetation that will be cleared from the site and the areas of existing fencing which will be demolished during the works (Drawing Reference: P21-287-0100-0005).

#### *2.2.2.1.4 Invasive Species Management*

The full extent of Invasive Species rhizomal growth including potential vector material will be removed and encapsulated in a dedicated geocomposite lined invasive species management cell. Upon completion of the excavation works the lined cell will be buried with a minimum 2.0m cover within a dedicated “fill” location within the waste body prior to placing the engineered cap.

Respective areas where invasive species are present will be isolated and have appropriate signage following the completion of the proposed works.

The Proposed Locations for Japanese Knotweed Burial is shown in a drawing enclosed with this planning application (Drawing Reference: P21-287-0100-0014).

#### *2.2.2.1.5 Grading/Profiling of Existing Profile*

The existing waste body was covered following cessation of waste filling with an intermediate soil cap.

The existing finished surface will require re-profiling to facilitate:

- Surface and sub surface drainage.
- Safe execution of the site remediation works.
- Safe access for maintenance of the cap.

Re-profiling will principally involve the (shallow) cutting of material at local high spots. These “cut” materials will be used as “fill” in local depressions. All cut and fill works will be carried out within the site boundary.

Thereafter imported granular “dust” material 50mm to 100mm thick will be used to provide formation for the engineered cap.

The re-profiled surface will provide the foundation for the engineered landfill cap (Drawing Reference: P21-287-0100-0010).



#### 2.2.2.1.6 Installation of Engineered Landfill Capping System

The engineered landfill cap “barrier” system will:

- Cover an area of approximately 38,000m<sup>2</sup>.
- Isolate the waste body from rainfall inputs which might otherwise produce leachate. This will protect underlying ground water and adjacent surface waters.
- Minimise the potential for uncontrolled landfill gas migration to the atmosphere or adjacent lands.
- Provide a physical barrier between the finished surface and buried wastes.
- Facilitate controlled discharge of surface water runoff and sub surface drainage flows into the receiving surface waters.

The cap shall comprise of the following:

- Vertical Wells
- A passive below liner landfill gas venting system.
- A LLDPE barrier to isolate the waste body from rainfall inputs and prevent uncontrolled fugitive gas emissions from the waste body.
- Over liner gas management system.
- Landfill gas compound.
- A subsurface drainage system.
- A surface drainage system.
- A subsoil layer average thickness 850 mm.
- A topsoil layer average thickness 150 mm barrier.

The Proposed Landfill Capping Area is shown in a drawing enclosed with this planning application (Drawing Reference: P21-287-0100-0009).

#### Vertical Wells

Vertical wells shall be installed within the waste body prior to reprofiling works. Well arisings will be placed in dedicated low spots on site prior to re-profiling. Well arisings will be covered at the end of each working day to minimise odour nuisance. Wells will be connected to over liner gas collection pipework to the gas management compound.

Well diameter will comprise a slotted HDPE pipe with a gravel surround.

#### Below Liner Landfill Gas System

Currently landfill gas as may be present vents gas to atmosphere via diffuse surface emissions. Once the LLDPE barrier is installed this preferential pathway to atmosphere will be isolated.



Below the LLDPE barrier a gas collection geocomposite and pipework system will be constructed to collect and direct landfill gas as may be present to the proposed temporary gas compound to manage landfill gas via passive ventilation.

The below liner gas collection geocomposite is a cusped synthetic product that is rolled out above the granular “dust” material overlying the re-profiled intermediate cap which overlies the waste. The gas collection geocomposite forms a “cavity” to intercept gas emissions from the underlying body.

Gas collection pipework will be slotted and laid in gravel surround below the gas collection geocomposite and it will facilitate collection of landfill gas; and soakage, if required, of condensate or other as may collect in pipework.

Landfill gas collected in the under-liner gas system will be transferred via solid HDPE pipes and terminate in the landfill gas management compound.

The Proposed Passive Gas Collection System has been enclosed with this planning application (Drawing Reference: P21-287-0200-0001 & P21-287-0200-0002)

#### LLDPE Barrier

The LLDPE barrier will be a 1.0 mm thick “plastic” sheet that is impermeable to both water and gas. It prevents gas escaping into the overlying soils and stops water from rainfall entering the underlying waste body.

The LLDPE sheets will be welded at joints and will terminate in a vertical cut-off trench about the perimeter of the site.

#### Over-liner Gas System

Over-liner HDPE solid pipework will convey gas from vertical wells to the gas management compound

Connections to wells will be via below ground valve chambers and/or above ground manifold boxed less than 1.0 m in height. All above ground structures will be fenced using stock proof fencing or similar approve.

#### Landfill Gas Compound

The under and over liner gas pipe systems will terminate in the gas management compound.

Landfill gas quality will change over time. Subject to landfill gas pumping trials and the calorific value/quality of the landfill gas present at the site, landfill gas will be either vented to atmosphere via vent stacks or oxidised prior to venting.

Oxidation will be carried out using a biological filter recessed into the cap to facilitate passive venting to atmosphere.

The biological filter and vent will be located in the landfill gas compound. The compound will be circa. 10.0 m wide by 20.0 m long and contained within stock proof fencing.



Alternatively, the vent stack will comprise a vertical pipe 300 mm diameter with a cowl and/or carbon filter located at a height of not less than 3.0 m above surrounding ground level.

The compound will also have provision for temporary plant to accommodate: gas pumping trials, or oxidation by high temperature flaring, if required.

### Subsurface Drainage

The over liner sub surface drainage collection geocomposite is a cusped synthetic product that is rolled out above the LLDPE barrier. It forms a “cavity” to intercept rainfall inputs into the cap. Subsurface drainage flows from the drainage geocomposite are transferred via a supporting pipework system to a surface drainage system at the toe of the cap and ultimately to the downstream watercourse.

A drawing showing the proposed surface and subsurface drainage system is enclosed with this planning application (Drawing Reference: P21-287-0300-0001).

### Surface Drainage

French drains around the capping perimeter will collect and direct surface water runoff to the receiving watercourses. Proposed French drains will be provided with 300 mm diameter HDPE SDR 17 slotted pipes.

A drawing showing the proposed surface and subsurface drainage system is enclosed with this planning application (Drawing Reference: P21-287-0300-0001).

### Subsoil Layer

Suitably sourced subsoils will then be imported to the site and placed atop of the sub surface drainage geocomposite and /or geogrid on side slopes. The subsoil layer will generally be 850mm deep.

The purpose of the subsoil layer will be to protect the synthetic geocomposite materials and to support landscaping.

### Topsoil Layer

Suitable sourced topsoil will be placed atop the subsoil. The topsoil will have no stones greater than 50 mm diameter. Stones greater than 50 mm will be removed by a proprietary stone picker or similar prior to seeding.

The topsoil layer will be 150 mm deep.

Stones will be reused on site in site roads or as fill to sub surface drains.



### 2.2.2.1.7 Temporary Works

#### Leachate Management

Storage tanks will be provided for the safe storage of any leachate arisings during the construction works. Leachate arising during construction works will be disposed at a licensed wastewater treatment plant.

#### Daily Cover of Exposed Waste

In the unlikely event that waste is exposed it will be covered with soil or similar approved at the close of each working day.

#### Suspended Solid Management

Suspended solids will be prevented from entering watercourses by installing silt fences around the site perimeter and around stockpiles.

Refer to drawing P21-287-0100-0007 for proposed location of silt fences.

#### Odour Management

Odour management is not expected to be an issue as the waste is older than 25 years and the works have been designed to reduce the risk of exposing waste.

In the event that it is exposed, waste will be covered up at the end of each working day.

#### Traffic Management

The Contractor will be required to implement a traffic management plan to manage safe access and egress of construction vehicles from the site.

#### Stock Proof Fencing

Clearance of shrub on the perimeter will result in damage to existing stock proof fencing. Following placement of the cap a replacement perimeter stock proof fence 1.3 m high will be installed around the landfill footprint.

The existing access gate to the site will be replaced. Redundant fences and gates will be transported and disposed of offsite in a licenced facility.

#### Installation of Landfill Gas/Leachate Management Infrastructure

New monitoring wells (3 no. ground water and landfill gas monitoring and 2 no. groundwater monitoring wells) will be installed to monitor landfill gas and groundwater. Arisings from boreholes will be managed on site below the LLDPE barrier and gas collection geocomposite.



Monitoring wells will have a chamber and a cover atop the wells at the same elevation as the surrounding ground. The wells will have monitoring ports to support monitoring of landfill gas quality and or groundwater quality as may be required by the Environmental Protection Agency (EPA).

The construction works will make provision for additional wells within the waste body and ports will be installed at wells heads or manifolds to support monitoring of gas quality and pressure.

Existing wells (2 no. groundwater monitoring wells) as are present within the waste footprint will be retained and incorporated into the cap to support future environmental monitoring as may be required by the EPA.

A drawing showing the existing and proposed monitoring wells is enclosed with this planning application (Drawing Reference: P21-287-0100-0006).

#### Grass Cover/Landscaping for Pasture

Post capping and placement of the subsoils and topsoil layers it is proposed to landscape the site using a high value native grass cover.

Grass is used to prevent erosion of the soils and to provide an attractive final visual appearance for the site.

#### *2.2.2.2 Construction Working Hours*

The hours of construction activity will avoid unsociable hours and will be agreed with the planning authority in advance of site start. It is anticipated that this will restrict working hours at the site during the construction phase to between 07:00 to 19:00 Monday to Saturday inclusive. Work on Sundays or public holidays will only be conducted in exceptional circumstances and subject to prior notification insofar as possible with the local community.

#### *2.2.2.3 Operational/Post Construction Phase*

The Operational/Post Construction works will include:

- Ongoing environmental monitoring.
- Ongoing management of Landfill Gas.
- Ongoing maintenance of engineered cap on-site.
- Ongoing maintenance of drainage systems on-site.

#### *2.2.2.3.1 Environmental Monitoring*

Monitoring staff will be required to access installed infrastructure (wells, the landfill gas compound and surface water monitoring locations) to take samples and/or monitor gas quality during the aftercare period post construction.





#### 2.2.2.3.2 *Management of Landfill Gas*

Post completion of the works and installation of the proposed landfill gas management infrastructure, there will be an on-going requirement to:

- Maintain landfill gas infrastructure on a periodic basis.
- Monitor landfill gas quality within and external to the facility at dedicated monitoring locations.
- Reinstate/replace biological filter media.

#### 2.2.2.3.3 *Maintenance of Cap*

The grass cover will require maintenance. This may be provided either by grazing and or by mowing. Fertiliser supplements may also be required periodically during the aftercare period subject to stocking density.

#### 2.2.2.3.4 *Maintenance of Surface Drainage*

Sub surface drainage pipes may require periodic jetting of pipes if they become compromised with roots or silt.

### 2.3 Relationship Between the Project and European Sites

As identified by the EPA in their screening for Appropriate Assessment, there is a hydrological connection between the closed landfill and Carra/Mask Complex SAC and Lough Mask SPA. This connectivity is set out hereunder.

The Closed Landfill is located within the Corrib catchment<sup>3</sup> (hydrometric area 306<sup>4</sup>), sub catchment Robe\_SC\_0107<sup>5</sup> (Code: 30\_98<sup>6</sup>) and Sub-basin Robe\_0209<sup>7</sup>. The KILBEG-MALONE (EPA code: 30K3711), a 1st order stream crosses the eastern portion of the closed landfill site travelling in a southern direction.

The KILBEG-MALONE travels 156m from the Closed Landfill site before feeding into the LISDUFF 30 (EPA code: 30L4313). The LISDUFF 30 then travels a further 2km before feeding into the Robe River (EPA code: 30R0115). From here, there is an instream distance of 44km along the Rover Robe before the it enters Lough Mask, which is part of the Lough Carra/Mask Complex SAC and Lough Mask SPA.

As such any impacts on water quality could have potential to have an effect upon the downstream European Sites.

<sup>3</sup> Name; WFD Catchments: EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>4</sup> Hydrometric area; WFD Catchments: EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>5</sup> Name; WFD Sub Catchment: EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>6</sup> Sub catchment code; WFD Sub Catchment: EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>7</sup> Name; WFD Sub River Basin: EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22



## 2.3.1 Existing Effects of the Closed Landfill on Water Quality

### 2.3.1.1 *Surface Water Sampling*

Mayo County Council carried out surface water quality monitoring upstream and downstream of the closed landfill site in 2009 and again in 2020. Table 2-3 summarises the monitoring results. The results of the surface water sampling have been assessed against the Maximum Admissible Concentration (MAC) and the Environmental Quality Standard (EQS) for Surface Waters as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (as amended).

It is noted that the upstream sampling location from 2009 is located approximately 2.1 km south of the upstream sampling location from November 2020 which is located adjacent to the historical landfill. On the other hand, the downstream sampling locations from 2009 and 2020 are relatively close to each other.

The results indicate that inorganic parameters such as ammonia (as N), phosphorus and Molybdate Reactive Phosphorus (MRP) exceed the Environmental Quality Standards (EQS) established in the Surface Water Regulations both upstream and downstream of the closed landfill.

The recorded exceedances of MRP, phosphorus and ammonia (as N) may be an indication of pressures in the wider catchment e.g. from agricultural runoff, rather than direct impact from the landfill as concentration is particularly higher in the upstream location SW1.

Analytical results show that EQS concentrations were exceeded for chromium (2009, d/s). The exceedance may be related to the incineration of municipal waste during the operational years of the landfill and direct impact to surface waters from leachate generated within the waste body.



**Table 2-3: Surface Water Sampling Results**

Parameter	Units	Maximum Allowable Concentration (MAC) <sup>*</sup>	Environmental Quality Standard (EQS) <sup>**</sup>	U/S Location 08.06.2009	D/S Location 08.06.2009	U/S Location SW1 27.11.2020	D/S Location SW5 27.11.2020
<b>Inorganics</b>							
Ammoniacal Nitrogen as N	mg/l	--	High status ≤ 0.040 (mean) and ≤ 0.090 (95%ile)	<0.2	1.6	15	0.268
			Good status ≤ 0.065 (mean) and ≤ 0.140 (95%ile)	0.551	0.671	0.985	0.449
Conductivity @ 20 deg.C	mS/cm	--	--	-	-	<0.1	<0.1
Fluoride	mg/l	0.5	--	-	-	-	-
Dissolved Oxygen	-	--	Lower Limit	5.81 mg/l	-	102.3 %Sat	101.8 %Sat
			95%ile>80% saturation				
			Upper Limit				
pH	pH Units	--	95%ile<120% saturation	8.54	8.24	7.4	7.3
			6.0-9.0				
Molybdate Reactive Phosphorus (MRP unfiltered) as PO4-P	mg/l	--	High status ≤ 0.025 (mean) and ≤ 0.045 (95%ile)	-	-	0.198	0.025
			Good status ≤ 0.035 (mean) and ≤ 0.075 (95%ile)				



Parameter	Units	Maximum Allowable Concentration (MAC) <sup>*</sup>	Environmental Quality Standard (EQS) <sup>**</sup>	U/S Location 08.06.2009	D/S Location 08.06.2009	U/S Location SW1 27.11.2020	D/S Location SW5 27.11.2020
Chloride	mg/l	--	--	15	28.1	40.7	16.7
COD, unfiltered	mg/l	--	--	27.8	47.3	39	39
Total Cyanide	mg/l	0.01	--	-	<0.05	<0.009	<0.009
BOD, unfiltered	mg/l	--	High status $\leq 1.3$ (mean(1)) or $\leq 2.2$ (95%ile)	<1	2.37	<3	<3
Total Alkalinity as CaCO <sub>3</sub>	mg/l	--	Good status $\leq 1.5$ (mean(1)) or $\leq 2.6$ (95%ile)	250	285	488	212
Total Suspended Solids	mg/l	--	--	4	7	4	<2
Sulphate (soluble) as S	mg/l	--	--	<3	29.5	19.9	11
Total Organic Carbon	mg/l	NAC <sup>***</sup>	--	-	-	-	-
Mercury (diss.filt)	µg/l	--	0.07	<0.01	<0.01	0.02	<0.01
Arsenic (diss.filt)	µg/l	--	25	-	-	<0.6	<0.6
Barium (diss.filt)	µg/l	--	--	-	-	-	-
Boron (diss.filt)	µg/l	--	--	-	-	129	16
Cadmium (diss.filt)	µg/l	1.5	0.25	<0.22	<0.22	<0.6	<0.6
Chromium (diss.filt)	µg/l	32	4.7	<0.7	9.03	1	0.6
Copper (diss.filt)	µg/l	--	30	2.17	4.47	<1.2	1
Lead (diss.filt)	µg/l	--	7.2	<0.4	<0.4	<0.6	1
Manganese (diss.filt)	µg/l	--	--	8.53	77.7	189	36
Nickel (diss.filt)	µg/l	--	20	<1.5	2.01	2	2



Parameter	Units	Maximum Allowable Concentration (MAC) <sup>*</sup>	Environmental Quality Standard (EQS) <sup>**</sup>	U/S Location 08.06.2009	D/S Location 08.06.2009	U/S Location SW1 27.11.2020	D/S Location SW5 27.11.2020
Phosphorus (diss.filt)	mg/l	--	High status ≤ 0.010 (mean)	<b>0.170</b>	<0.105	-	-
Selenium (diss.filt)	µg/l	--	Good status ≤ 0.025 (mean)	-	-	-	-
Thallium (diss.filt)	µg/l	--	--	-	-	-	-
Zinc (diss.filt)	µg/l	--	100	11.2	13.4	19	7
Sodium (Dis.Filt)	mg/l	--	--	7.34	17.5	28	10
Magnesium (Dis.Filt)	mg/l	--	--	3.73	5.65	20	4
Potassium (Dis.Filt)	mg/l	--	--	<2.34	<2.34	30	2
Calcium (Dis.Filt)	mg/l	--	--	124	139	138	88
Iron (Dis.Filt)	mg/l	--	--	0.0821	0.139	0.553	0.464

\* Items in **bold** are in exceedance of the MACs

\*\* Items shaded in **orange** are in exceedance of the EQS (note however the EQS as prescribed in the Regulations is based on an arithmetic mean of the concentrations measured over a twelve month monitoring period, and the monitoring presented is for four occasions only).

\*\*\* NAC – no abnormal change



### 2.3.1.2 Surface Water Quality

The KILBEG-MALONE and LISDUFF 30 Rivers both have a Water Framework Directive (WFD) 2013-2018 status of ‘good’<sup>8</sup>, which is determined by the WFD monitoring conducted at the monitoring station at the N17 bridge crossing which has a most recent (2012) Q-value of Q4, and is located ca. 3.8km downstream of the closed landfill.

The Robe River has ‘good’ status before it declines to ‘moderate’ or Q3-4 as it crosses under the L1509 local road, approximately 3km south of the centre of Claremorris, Co. Mayo. Robe River remains at a ‘moderate’ status until it reaches Ballinrobe, Co. Mayo, where it returns to ‘good’ status; 18.8km downstream from the Closed Landfill site. The Robe River then travels a further 4.3km before feeding into Lough Mask, which is of ‘good’ status.

It is evident from the WFD sampling carried out at the N17 bridge that the exceedances in water quality standards as shown in Table 2-3 are being assimilated downstream of the closed landfill site and are not affecting Water Framework Directive status, and as such are not affecting the European sites located downstream.

### 2.3.1.3 Groundwater

The Closed Landfill is located within the area of the groundwater body Cong-Robe3<sup>9</sup> (Code: IE\_WE\_G\_00194<sup>10</sup>). Groundwater WFD status has been consistently ‘good’ since monitoring began in 2007. Mayo County Council conducted groundwater monitoring at the closed landfill in 2010. A borehole (BH02) was drilled to analyse groundwater at the Closed Landfill, at a depth of 4.0m below ground on the periphery of the site into natural ground, down gradient of the landfill.

Groundwater monitoring was undertaken from BH02 on the 2nd of December 2010. The groundwater sample analysed from BH02 was tested for four criteria i.e., Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Faecal Coliforms and Total Coliforms. The results for these parameters are shown in Table 2-4 below.

**Table 2-4: Groundwater Sampling Results for Borehole BH02 (December 2010)**

Criteria	Units	Result
BOD	mg/l	28
COD	mg/l	482
Faecal Coliforms	cfu/100ml	< 1
Total Coliforms	cfu/100ml	6,800

Subsequent ground water samples were taken from BH02 in November 2020. The results of this sampling are indicated in Table 2-5.

<sup>8</sup> River Waterbody WFD Status 2013-2018, EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>9</sup> Name; Ground waterbodies Risk, EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22

<sup>10</sup> Code; Ground waterbodies Risk, EPA Maps (mapviewer); <https://gis.epa.ie/EPAMaps/> viewed 15/03/22



These results were assessed against the EPA's Interim Guideline Values (IGVs) and the Overall Threshold Value Range (OTVR) from the European Groundwater Regulations (2010) assessment criteria (as amended). The results of the groundwater monitoring from BH02 indicate some exceedances of the IGVs and OTV groundwater limit values.

Samples recovered from monitoring well BH02 in 2020 reported an ammoniacal nitrogen (as N) concentration of 3.2 mg/l, which exceeds OTVR and IGV limit values. Ammoniacal N at this concentration indicates the landfill may be impacting groundwater quality downgradient of the landfill.

Potassium levels of 11.0 mg/l were detected at BH02 exceeds the OTVR limit. Potassium concentrations at this level may be an indication of impact on groundwater quality from the landfill.

The elevated concentrations of iron, manganese, and zinc of 2.89 mg/l, 385 µg/l and 121 µg/l respectively at borehole BH02 exceeding the IGVs limit values may be associated to the local bedrock hydrochemistry and agricultural activities in surrounding lands.

The exceedance of the OTVR of molybdate reactive phosphorus (2.09 mg/l) from monitoring well BH02 indicate an impact on groundwater from agricultural activities in surrounding lands.

In summary, based on the presence of elevated ammonia and potassium concentrations, it can be assumed that the landfill waste body may be impacting groundwater quality locally. However, GSI have characterised the underlying aquifer, the Clare-Corrib groundwater body as being 1,422 km<sup>2</sup> in area. The Claremorris historical landfill waste footprint was determined to be c. 38,000 m<sup>2</sup>. This accounts for 0.003% of the Clare-Corrib GWB area. The EPA WFD groundwater monitoring for the GWB consistently indicates Good status, which includes monitoring at the Ballindine monitoring station (monitoring station code GWIE\_WE\_G\_001922000001), which is located ca. 4km south of the closed landfill, and has been monitored since 2010. WFD groundwater monitoring would indicate that any effects from the landfill appear to be localised, and as such have not impacted on any European sites.







**Table 2-5: Groundwater Sampling Results for Borehole BH02 (November 2020)**

Parameter	Units	EPA IGW Standards *	S.I. No. 9 of 2010 Standards OTVR **	BH02	
				02.12.2010	BH02 27.11.2020
Ammoniacal Nitrogen as N	mg/l	0.15	0.065 - 0.175	-	<b>3.2</b>
Conductivity @ 20 deg.C	mS/cm	1	0.8 – 1.875	-	0.903
Total Dissolved Solids	mg/l	1000	--	-	500
Fluoride	mg/l	1	--	-	<0.1
Dissolved Oxygen	mg/l	--	NAC***	-	-
pH	pH Units	6.0-9.5	--	-	6.7
Phosphate (Orto as PO <sub>4</sub> )	mg/l	0.03	--	-	-
Molybdate Reactive Phosphorus (unfiltered) as PO <sub>4</sub> -P	mg/l	--	0.035	-	<b>2.09</b>
Chloride	mg/l	30	24 - 187.5	-	28.9
COD, unfiltered	mg/l	--	--	482	-
Total Cyanide	mg/l	0.01	0.0375	-	<0.009
BOD, unfiltered	mg/l	--	--	28	-
Total Alkalinity as CaCO <sub>3</sub>	mg/l	NAC***	--	-	-
Total Suspended Solids	mg/l	--	--	-	-
Total Oxidised Nitrogen	mg/l	--	--	-	-
Sulphate (soluble) as S	mg/l	200	187.5	-	62.9
Total Organic Carbon	mg/l	--	--	-	18
Mercury (diss.filt)	µg/l	1	0.75	-	0.01
Arsenic (diss.filt)	µg/l	10	7.5	-	<0.6
Barium (diss.filt)	µg/l	100	--	-	-
Boron (diss.filt)	µg/l	1000	750	-	34



Parameter	Units	EPA IGV Standards *	S.I. No. 9 of 2010 Standards OTVR **	BH02	
				02.12.2010	27.11.2020
Cadmium (diss.filt)	µg/l	5	3.75	-	<0.6
Chromium (diss.filt)	µg/l	30	37.5	-	<0.6
Copper (diss.filt)	µg/l	30	1500	-	3
Lead (diss.filt)	µg/l	10	7.5	-	3
Manganese (diss.filt)	µg/l	50	--	-	<b>385</b>
Nickel (diss.filt)	µg/l	20	15	-	2
Phosphorus (diss.filt)	mg/l	--	--	-	-
Selenium (diss.filt)	µg/l	--	--	-	-
Thallium (diss.filt)	µg/l	--	--	-	-
Zinc (diss.filt)	µg/l	100	--	-	<b>121</b>
Sodium (Dis.Filt)	mg/l	150	150	-	15
Magnesium (Dis.Filt)	mg/l	50	--	-	12
Potassium (Dis.Filt)	mg/l	5	--	-	<b>11</b>
Calcium (Dis.Filt)	mg/l	200	--	-	177
Iron (Dis.Filt)	mg/l	0.2	--	-	<b>2.897</b>

\* Items shaded in **bold** are in exceedance of the EPA Interim Guideline Value (IGV).

\*\* Items shaded in **orange** are in exceedance of S.I. No. 9 of 2010 Overall Threshold Value Range (OTVR).

\*\*\* NAC – no abnormal change.



## 3. IMPLICATIONS OF THE PROJECT IN VIEW THE SITE'S CONSERVATION OBJECTIVES

### 3.1 Impact Prediction: Source-Pathway-Receptor Assessment

The S-P-R model is a standard tool in environmental assessment to determine links between sensitive features and sources of impacts. For an effect to occur, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism means there is no likelihood for the effect to occur e.g., if there is no ecological pathway or functional link between the proposed development and the European site, there is no potential for impact and as such no potential for an effect.

An impact may occur without having an effect. An impact is essentially the 'source' in the S-P-R assessment. It is the biophysical change caused to the environment by the project e.g., increase in sediment runoff due to ground disturbance. For the impact to have an effect on site integrity, the Qualifying Interests / Special conservation objectives of the European site must be sensitive to the biophysical change.

The conservation objectives of the Lough Carra/Mask Complex SAC and Lough Mask SPA which might be affected by the project are identified through the S-P-R process as set out in Table 3.1.





**Table 3-1: Source-Pathway-Receptor Assessment for Claremorris Closed Landfill**

Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Land-take &amp; Scale of Development &amp; physical change to the environment</b></p> <p>Site clearance, remediation and removal of invasive species will result in localised areas of terrestrial habitat loss.</p>	<p>There will be no land take from, or physical change to, any European sites.</p> <p>The Closed Landfill is outside the core foraging range for the SCI species of Lough Mask SPA. (Johnson, Schmidt, and Taylor, 2014; Scottish Natural Heritage, 2016).</p>	None	None
<p><b>Resource Requirements</b></p> <p>There will be no resources required from European Sites.</p>	None	None	None



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Wastes and Residues</b></p> <p>The contractor compound is to have mess facilities, toilet, and waste receptacles. All site compound waste is to be stored and disposed of by the contractor to a licensed facility. Therefore, there is no potential impact from waste emissions.</p> <p>Leachate is currently generated at the closed landfill. Remediation works will restrict the production (from rainwater) and free movement of leachate into groundwater limiting any continued and future contribution of leachate to the Cong-Robe ground waterbody. Works will occur above inferred waste only; the contamination of groundwater will not occur.</p>	None	None	None



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Noise Emissions</b></p> <p>The main aspects of the construction phase, with the potential to generate noise include:</p> <ul style="list-style-type: none"> <li>• Delivery and set up of the temporary site compounds</li> <li>• Delivery of construction materials notably soils and geocomposite.</li> </ul>	<p>The Lough Carra/Mask Complex SAC and Lough Mask SPA are located ca. 15km straight line measurement from the closest landfill site at their closest point. Noise effects will not occur given distance.</p>	<p>None</p>	<p>None</p>



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Emissions to Air</b>            The Institute of Air Quality Management 'Guidance on the Assessment of dust from demolition and construction' (Holman et al., 2014) identifies the likely spatial scale of dust effect relative to the size of a development. The landfill remediation project would be considered a medium scale earthworks project. As such the zone of potential dust effects are defined as 500m from the project boundary</p>	<p>The conservation interests of the European sites are not located within the potential zone of dust effects.</p>	<p>None</p>	<p>None</p>





Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Emissions to Water during Remediation (Surface Water)</b></p> <p>Silt will be produced during site clearance, reprofiling of 39,000m<sup>3</sup> of the existing capping as well as the placement of subsoil and topsoil, and installation of drainage and infrastructure.</p>	<p>The Closed Landfill is connected to Lough Mask via the KILBEG-MALONE, which travels 156m from the Closed Landfill site before feeding into the LISDUFF 3012 (EPA code: 30L4313). The LISDUFF 30 then travels a further 2km before feeding into the Robe14 River (EPA code: 30R0115). From where the LISDUFF 30 enters the Robe River, to Lough Mask there is an instream distance of 44km.</p> <p>There is very low potential for significant/extensive sedimentation of the downstream European site given hydrological distance and water volume of the lakes. Additionally, the rehabilitation works will be completed over a 6-8 month period with reinstatement of grass on the site providing stabilisation of the capping and thus limiting the potential for sedimentation from the site.</p>	<p>Given that the impact pathway is a hydrological one via surface waters, the qualifying interests of the SAC and SPA which may be vulnerable to such impacts are those reliant on the maintenance or restoration of surface water quality. As such terrestrial habitats associated with the SAC are excluded from further consideration. Similarly the littoral lake habitats e.g. alluvial woodlands, Slender Green Feather-moss species and fen habitats are excluded from being affected by sedimentation of surface waters as sedimentation would not alter hydrological regime, which is the key functional requirement of such habitats/species. Additionally, fen habitats are groundwater dependant ecosystems, and as such a temporary increase in sediment volume in the lake would not have an effect.</p> <p>There is a very low possibility of sedimentation occurring in Lough Mask due to the proposed rehabilitation works given the lengthy hydrological distance (44km) between the proposed works and Lough Mask. Additionally, the catchment area of the Robe River is 264km<sup>2</sup>, while the footprint of the landfill capping area is 3.8ha (0.038km<sup>2</sup>). This equates to 0.01% of the Robe River catchment. Temporary disturbance to soil within 0.01% of the river catchment would not result in extensive sedimentation of the watercourse, or of the downstream Lough Mask.</p> <p>Given the size of the proposed rehabilitation works relative to the area of Lough Mask, sedimentation could not occur at a scale that would alter the carrying capacity of the lake. As such there is no potential for SCI species of the SPA to be affected.</p>	<p>Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]</p> <p>Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]</p> <p>Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]</p>



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
	<p>As such any potential for sedimentation will be temporary only. However, a pathway for sedimentation of surface waters has not been discounted given the hydrological connectivity.</p>	<p>While there is potential for localised sedimentation of the River Robe due to the proposed rehabilitation works, effects on the other population associated with the SAC are unlikely given the distance from the SAC (44km hydrological route) and the fact that otters tend to hold territories of between 10km-15km.</p> <p>No conservation objectives of the European Sites are likely to be affected by an increase in sedimentation the Robe River on the basis of the scale of the project relative to the Robe River catchment and the Lough mask catchment/area. However, on a very precautionary basis, Section 4 of this NIS gives consideration to the potential for adverse effects on the following QIs of Lough Carra/Mask Complex SAC solely on the basis of the hydrological link highlighted by the EPA in their screening determination:</p> <ul style="list-style-type: none"> <li>• Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]</li> <li>• Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130]</li> <li>• Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. [3140]</li> </ul>	



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Emissions to Water from Landfill Waste (Groundwater)</b></p> <p>The Closed Landfill is producing leachate which is freely entering groundwater. Leachate generation at the Closed Landfill is not currently impacting the WFD status of the groundwater. Remediation works will restrict the production (from rainwater) and free movement of leachate into groundwater limiting any continued and future contribution of leachate to the Cong-Robe ground waterbody. Works will occur above inferred waste only; the contamination of groundwater will not occur.</p>	None	None	None



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Transportation Requirements</b>                      No potential impacts are identified because of transportation requirements.</p> <p>The increase in traffic volumes fall below the screening criteria set out in the UK Design Manual for Roads and Bridges guidance. The guidance states that road links meeting one or more of the following criteria can be defined as being 'affected' by a project and should be included in the local air quality assessment:</p> <ul style="list-style-type: none"> <li>• Road alignment change of 5 metres or more</li> <li>• Daily traffic flow changes by 1,000 AADT or more</li> </ul>	None	None	None



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<ul style="list-style-type: none"> <li>•HGVs flows change by 200 vehicles per day or more</li> <li>•Daily average speed changes by 10 km/h or more</li> <li>•Peak hour speed changes by 20 km/h or more.</li> </ul>			



Source (Potential Impacts)	Pathway	Receptor (Conservation Objectives)	Conservation Objectives Considered Further for Adverse Effects
<p><b>Duration of Construction</b>            Construction will occur over a period of 6-8 months.</p>	<p>The Closed Landfill is outside the core foraging range for the SCI species of Lough Mask SPA. (Johnson, Schmidt, and Taylor, 2014; Scottish Natural Heritage, 2016).</p>	<p>None</p>	<p>None</p>



### 3.2 Potential Cumulative Effects with Other Plans and Projects

Article 6(3) of the Habitats Directive requires that:

‘Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives.’

It is therefore required that the potential impacts of the proposed development are considered in combination with any other relevant plans or projects.

The potential impacts of the proposed project are identified as temporary sedimentation of surface waters. Relevant plans and projects (listed in Table 3-2) which have been granted in the last 5 years have been assessed for potential for combined effects and are deemed not to have potential for combined impact on the basis of the small scale of the developments and temporary nature of the sedimentation relative to the overall Lough Mask catchment.

**Table 3-2: Plans and granted applications within the past five years (2017-2022)**

Development Type/Plan Name	Decision Year	Planning Reference Number	Description	Address	Distance from Project (Approximate)
Draft Mayo County Development Plan 2021-2027	Na	Na	NA	NA	NA
Mayo County Development Plan 2014-2020	Na	Na	NA	NA	NA
Stable Building	2017	17477	New stable building together with all ancillary site work and services	Lisduff, Claremorris	<1km
Agricultural Buildings	2018	17552	Construct agricultural buildings and all ancillary site developments. The proposed agricultural buildings include a new milking parlour, a new calf shed and new machinery shed	Lehinch Demesne, Hollymount, Co. Mayo	>8km
Extension construction	2021	201007	Construction of a proposed new extension to the side and rear of the existing property and all associated site works and landscaping	Kilrush, Hollymount	>10km
Renovations of nursing home	2018	171035	Renovations and alterations to existing nursing home, construction of an extension to existing nursing home, closing up of existing nursing home site entrance, demolition of 3 no.	Kilrush, Hollymount, Co. Mayo	>10km



Development Type/Plan Name	Decision Year	Planning Reference Number	Description	Address	Distance from Project (Approximate)
			Existing structures, construction of building for use as a workshop and covered staff facility, connection to existing foul and storm drainage systems and all associated works, signage, car-parking, set down area, landscaping together with all ancillary site works and services		
Extension to dwelling house	2017	17787	Extension to dwelling house previously permitted under p01/1930. Relocation of domestic garage as previously permitted under p01/1930 and all ancillary site developments	Kilrush, Hollymount, Co. Mayo	>10km
Domestic garage	2019	19449	Construct domestic garage along with all associated services	Cloongowla, Ballinrobe, Co. Mayo	>14km
Commercial unit	2020	20110	Construct a commercial unit including offices and storage area, new site entrance, connection to public water main and foul sewer and all associated site works	Claremorris Road, Friarsquarter West, Ballinrobe	>16km
Relief Vent Stack	2017	17131	Install a 3m high "lamp post" style relief vent stack servicing the existing above ground natural gas pressure reduction unit with all ancillary services and associated site works	Abbey Street, Ballinrobe, Co. Mayo	>18km
Retention of change of use	2019	18749	Retention of change of use from domestic store to living accommodation along with all associated services	Abbey Street, Ballinrobe, Co. Mayo	>18km
Change of use	2017	17262	Change of use of the ground floor of the property from residential to a veterinary retail and consultation office. Non-structural internal modifications are being made to the ground floor plan layout as shown along with the provision of signage, car parking spaces and all associated services	Abbey Street, Ballinrobe	>18km
Sports facility	2018	18501	Construct a new athletics facility comprising of a 6 lane running track, a long jump area and a javelin and shot putt throwing area along with all associated services	Ballinrobe Town Park (Rathkelly), Ballinrobe, Co. Mayo	>8km





Development Type/Plan Name	Decision Year	Planning Reference Number	Description	Address	Distance from Project (Approximate)
Alterations to entrance, windows		17866	Relocate an existing entrance on the south facade and construct a new entrance with new signage and new canopy, install new windows on the south facade. Construct a new window to the north facade and to construct a new landscaped planter to the rear of the building. Retention of as built terrace and external stairs to the rear of the building. Retain alterations to windows on the north facade which differ from those granted under p01/6 and to retain an external escape stairs together with all associated ancillary site works and services	Main Street, Ballinrobe, Co. Mayo	>18km
Alterations to entrance, windows, doorway	2018	17950	Alterations to the existing east (Main Street) façade including a) relocation of existing doorway b) construction of new glazed shop front and entrance doorway including signage and c) construction of new steps to the relocated doorway and the entrance together with all associated ancillary site works and services.	Main Street, Ballinrobe, Co. Mayo	>18km

It is evident from WFD monitoring that ongoing activities which are in the same waterbody catchment of the Robe River as the closed landfill (e.g. agriculture, peatlands or forestry) are together not having an effect on water quality: Good status has been historically reported for this catchment.





## 4. POTENTIAL FOR ADVERSE EFFECTS ON EUROPEAN SITE INTEGRITY

The potential for the remediation works and the post-remediated landfill to have an adverse effect on the integrity/conservation objectives of the Lough Carra/Lough Mask SAC and Lough Mask SPA are discussed hereunder.

The assessment is made relative to the potential for the effects to impact the maintenance or restoration of the favourable conservation conditions of the relevant qualifying interests/special conservation objectives of the European Sites. The impact under consideration is sedimentation of Lough Mask.

Favourable conservation status of an Annex I habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing,
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of an Annex II species is achieved 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.



**Table 4-1: Conservation objectives, attributes and targets**

Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
<b>Carra/Mask Complex SAC</b>					
Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> )	To restore the favourable conservation condition of Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> )	Habitat area	Area stable or increasing, subject to natural processes	<b>Potential for adverse effects</b> The potential for sedimentation of Lough Mask due to rehabilitation works at the Claremorris closed landfill is low given the small scale and temporary nature of the earth works required at the landfill relative to the overall catchment of the Robe River and also given the extensive hydrological journey (44km) required for sediment to reach the SAC. Potential adverse effects are not anticipated, however, on a precautionary basis, given that there is a hydrological pathway to the European site, it is assumed that a small amount of sediment could enter the SAC on a temporary basis during the rehabilitation works, with the following possible effects:	Adverse effects are assumed on a precautionary basis.
		Habitat distribution	No decline, subject to natural processes		
		Vegetation composition: typical species	Typical species present, in good condition, and demonstrating typical abundances and distribution		
		Vegetation composition: characteristic zonation	All characteristic zones should be present, correctly distributed and in good condition		
		Vegetation distribution: maximum depth	Maintain maximum depth of vegetation, subject to natural processes	<ul style="list-style-type: none"> <li>• Temporary increase in turbidity</li> <li>• Possible change of substratum</li> <li>• Temporary change in nutrient loading</li> </ul>	
		Hydrological regime: water level fluctuations	Maintain appropriate hydrological regime necessary to support the habitat	All of the above potential changes would likely be of a small scale given that the amount of sediment that could be generated by the rehabilitation works is low relative to the overall catchment of the Robe River and of Lough Mask.	



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		Lake substratum quality	Maintain appropriate substratum type, extent and chemistry to support the vegetation	Any sedimentation would likely be localised to the point at which the Robe River enters Lough Mask.	
		Transparency	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	Leachate emissions from the rehabilitated landfill will be reduced because of capping, and while WFD monitoring indicates that the ongoing escape of leachate from the closed landfill into surface and ground waters is being assimilated such that it is not affecting water status, a reduction in the amount of leachate escaping from the closed landfill following remediation can will contribute positively towards water quality.	
		Nutrients	Maintain the concentration of nutrients in the water column at sufficiently low levels to support the habitat and its typical species		
		Phytoplankton biomass	Maintain/restore appropriate water quality to support the habitat, including high chlorophyll a status		
		Phytoplankton composition	Maintain appropriate water quality to support the habitat, including high phytoplankton composition status		
		Attached algal biomass	Maintain trace/absent attached algal biomass		



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		Macrophyte status	Restore high macrophyte status		
		Acidification status	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes		
		Water colour	Maintain/restore appropriate water colour to support the habitat		
		Dissolved organic carbon (DOC)	Maintain/restore appropriate organic carbon levels to support the habitat		
		Turbidity	Maintain/restore appropriate turbidity to support the habitat		
		Fringing habitat: area and condition	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of lake habitat 3110.		



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)														
Oligotrophic mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i>	To restore the favourable conservation condition of Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoeto-Nanojuncetea</i>	<table border="1"> <tr> <td data-bbox="311 862 422 1086">Habitat area</td> <td data-bbox="422 862 502 1086">Area stable or increasing, subject to natural processes</td> </tr> <tr> <td data-bbox="311 1086 422 1153">Habitat distribution</td> <td data-bbox="422 1086 502 1153">No decline, subject to natural processes</td> </tr> <tr> <td data-bbox="311 1153 422 1220">Vegetation species richness</td> <td data-bbox="422 1153 502 1220">Maintain/restore appropriate species richness</td> </tr> <tr> <td data-bbox="311 1220 422 1377">Vegetation composition: typical species</td> <td data-bbox="422 1220 502 1377">Maintain/restore typical species, in good condition, and demonstrating typical abundances and distribution</td> </tr> <tr> <td data-bbox="311 1377 422 1444">Vegetation composition: characteristic zonation</td> <td data-bbox="422 1377 502 1444">Maintain/restore characteristic deep-water vegetation</td> </tr> <tr> <td data-bbox="311 1444 422 1512">Vegetation distribution: maximum (euphotic) depth</td> <td data-bbox="422 1444 502 1512">Maintain/restore maximum depth of vegetation, subject to natural processes</td> </tr> <tr> <td data-bbox="311 1512 422 1579">Hydrological regime: water level fluctuations</td> <td data-bbox="422 1512 502 1579">Maintain appropriate natural hydrological regime necessary to support the habitat</td> </tr> </table>	Habitat area	Area stable or increasing, subject to natural processes	Habitat distribution	No decline, subject to natural processes	Vegetation species richness	Maintain/restore appropriate species richness	Vegetation composition: typical species	Maintain/restore typical species, in good condition, and demonstrating typical abundances and distribution	Vegetation composition: characteristic zonation	Maintain/restore characteristic deep-water vegetation	Vegetation distribution: maximum (euphotic) depth	Maintain/restore maximum depth of vegetation, subject to natural processes	Hydrological regime: water level fluctuations	Maintain appropriate natural hydrological regime necessary to support the habitat		<p><b>Potential for adverse effects</b></p> <p>The potential for sedimentation of Lough Mask due to rehabilitation works at the Claremorris closed landfill is low given the small scale and temporary nature of the earth works required at the landfill relative to the overall catchment of the Robe River and also given the extensive hydrological journey (44km) required for sediment to reach the SAC. Potential adverse effects are not anticipated, however, on a precautionary basis, given that there is a hydrological pathway to the European site, it is assumed that a small amount of sediment could enter the SAC on a temporary basis during the rehabilitation works, with the following possible effects:</p> <ul style="list-style-type: none"> <li>• Temporary increase in turbidity</li> <li>• Possible change of substratum</li> <li>• Temporary change in nutrient loading</li> </ul> <p>All of the above potential changes would likely be of a small scale given that the amount of sediment that could be generated by the rehabilitation works is low relative to the overall catchment of the Robe River and of Lough Mask. Any sedimentation would likely be localised to the point at which the Robe River enters Lough Mask.</p>	Adverse effects are assumed on a precautionary basis.
Habitat area	Area stable or increasing, subject to natural processes																		
Habitat distribution	No decline, subject to natural processes																		
Vegetation species richness	Maintain/restore appropriate species richness																		
Vegetation composition: typical species	Maintain/restore typical species, in good condition, and demonstrating typical abundances and distribution																		
Vegetation composition: characteristic zonation	Maintain/restore characteristic deep-water vegetation																		
Vegetation distribution: maximum (euphotic) depth	Maintain/restore maximum depth of vegetation, subject to natural processes																		
Hydrological regime: water level fluctuations	Maintain appropriate natural hydrological regime necessary to support the habitat																		



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		Lake substratum quality	Maintain appropriate substratum type, extent and chemistry to support the vegetation	Leachate emissions from the rehabilitated landfill will be reduced because of capping, and while WFD monitoring indicates that the ongoing escape of leachate from the closed landfill into surface and ground waters is being assimilated such that it is not affecting water status, a reduction in the amount of leachate escaping from the closed landfill following remediation can will contribute positively towards water quality.	
		pH and Alkalinity	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes		
		Nutrients	Maintain the concentration of nutrients in the water column at sufficiently low levels to support the habitat and its typical species		
		Water colour	Maintain/restore appropriate water colour to support the habitat		
		Dissolved organic carbon (DOC)	Maintain/restore appropriate organic carbon levels to support the habitat		
		Turbidity	Maintain/restore appropriate turbidity to support the habitat		





Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	To restore the favourable conservation condition of Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. in Lough Carra/Mask Complex SAC	<p>Transparency</p> <p>Attached algal biomass</p> <p>Fringing habitat: area and condition</p>	<p>Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency</p> <p>Maintain trace/absent attached algal biomass</p> <p>Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of lake habitat 3130</p>		
		<p>Habitat area</p> <p>Habitat distribution</p> <p>Vegetation composition: Typical species</p>	<p>Area stable or increasing, subject to natural processes</p> <p>No decline, subject to natural processes</p> <p>Typical species present, in good condition, and demonstrating typical abundances and distribution. Restore condition and extent of typical charophyte species and cyanobacterial crust</p>	<p><b>Potential for adverse effects</b></p> <p>The potential for sedimentation of Lough Mask due to rehabilitation works at the Claremorris closed landfill is low given the small scale and temporary nature of the earth works required at the landfill relative to the overall catchment of the Robe River and also given the extensive hydrological journey (44km) required for sediment to reach the SAC. Potential adverse effects are not anticipated, however, on a precautionary basis, given that there is a hydrological pathway to the European site, it is assumed that a small amount of sediment could enter the SAC on a temporary basis during the rehabilitation works, with the following possible</p>	<p>Adverse effects are assumed on a precautionary basis.</p>



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		<p>Vegetation composition: characteristic zonation</p> <p>Vegetation distribution: maximum depth</p> <p>Hydrological regime: water level fluctuations</p> <p>Lake substratum quality</p> <p>pH and Alkalinity</p>	<p>Restore characteristic charophyte and crust zones</p> <p>Restore maximum depth of vegetation (euphotic depth), subject to natural processes</p> <p>Maintain/restore appropriate hydrological regime necessary to support the habitat</p> <p>Restore appropriate substratum type, extent and chemistry to support the vegetation</p> <p>Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes</p>	<p>effects:</p> <ul style="list-style-type: none"> <li>• Temporary increase in turbidity</li> <li>• Possible change of substratum</li> <li>• Temporary change in nutrient loading</li> </ul> <p>All of the above potential changes would likely be of a small scale given that the amount of sediment that could be generated by the rehabilitation works is low relative to the overall catchment of the Robe River and of Lough Mask. Any sedimentation would likely be localised to the point at which the Robe River enters Lough Mask.</p> <p>Leachate emissions from the rehabilitated landfill will be reduced because of capping, and while WFD monitoring indicates that the ongoing escape of leachate from the closed landfill into surface and ground waters is being assimilated such that it is not affecting water status, a reduction in the amount of leachate escaping from the closed landfill following remediation can will contribute positively towards water quality.</p>	



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		Nutrients	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species		
		Water colour	Restore appropriate water colour to support the habitat		
		Dissolved organic carbon (DOC)	Maintain/restore appropriate organic carbon levels to support the habitat		
		Turbidity	Maintain/restore appropriate turbidity to support the habitat		
		Transparency	Restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency		
		Attached algal biomass	Restore trace/absent attached algal biomass		



Qualifying Interest	Conservation Objective	Attribute	Target	Potential for Adverse Effects on Site Integrity from the proposed project	Potential for Adverse Effects (Yes/No)
		Fringing habitat area and condition	Restore the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3140		



## 5. MITIGATION MEASURES

Mitigation is prescribed in accordance with the EPA draft guidance on EIAR (EPA, 2017) which requires mitigation by avoidance as a first approach. Where this is not feasible, measures to prevent impacts from giving rise to adverse effects should be adopted (e.g., design of banded storage for chemicals). Where impacts cannot be avoided, mitigation by reduction of impact is required to limit the exposure of the receptor to an acceptable level (often achieved by interrupting the pathway between the source and receptor) such that adverse effects on site integrity of the European site does not occur.

**Table 5-1: Details of mitigation measures to be implemented for the proposed project.**

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
<b>MITIGATION MEASURES TO BE IMPLEMENTED PRIOR TO CONSTRUCTION</b>				
1	Toolbox Talk	Toolbox talks will be undertaken with construction staff on operation and maintenance of sediment control measures	Toolbox talks will be provided to all staff upon induction and at site meetings thereafter	The Project Manager will deliver talks as required.
<b>MITIGATION MEASURES TO BE IMPLEMENTED PRIOR TO CONSTRUCTION</b>				
2	Compact surface of stored soils during reprofiling and capping works	Minimise generation of suspended solids	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.



No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
4	Weather forecasts will be reviewed daily, and earthworks will not be undertaken during periods of heavy rainfall.	Minimise generation of suspended solids	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
7	Temporary silt fences will be installed along the site perimeter and around soil stockpiles.	Minimise ingress of suspended solids into adjacent waterbodies	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
8	The access track will be resurfaced with Clause 804 with minimal fines.	Minimise generation of suspended solids	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
9	Any other diesel, fuel or hydraulic oils stored on site will be stored in bundled storage tanks – the bund area will have a volume of at least 110 % of the volume of such materials stored.	Reduce the risk of hydrocarbons reaching the waterways within the catchment of the proposed remediation works.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.



No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
11	Appropriate spill control equipment, such as oil soakage pads, will be kept within the construction area and in each item of plant to deal with any accidental spillage.	Reduce the risk of hydrocarbons reaching the waterways within the catchment of the proposed remediation works.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
12	Portaloos and/or containerised toilets and welfare units will be used to provide toilet facilities for site personnel. Sanitary waste will be removed from site by a licensed waste disposal contractor	Ensure that no sanitary waste enters the waterways within the catchment of the proposed remediation works.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
13	Daily road sweeping and maintenance will prevent soil from earthworks being deposited to the N17.	Minimise generation of suspended solids.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	A suitably qualified person will be appointed to ensure the effective operation and maintenance of mitigation measures during the construction process.
<b>OPERATIONAL PHASE MITIGATION MEASURES</b>				
14	The capped surface will be vegetated post-construction to prevent the generation of silted runoff.	Minimise generation of suspended solids	Mitigation measures will be inspected by a suitably qualified person appointed by the client. High probability of success	Inspection by a suitably qualified person appointed by the client.
15	The constructed surface drainage system will filter surface water before it enters the receiving watercourses.	Minimise generation of leachate	Mitigation measures will be inspected by a suitably qualified person appointed by the client. High probability of success	Inspection by a suitably qualified person appointed by the client.







## 6. CONCLUSION

For the reasons set out in detail in this report, in the light of the best scientific knowledge in the field, all aspects of the proposed project which, by itself, or in combination with other plans or projects, which may affect the relevant European Sites have been considered.

The report contains information that the competent authority, may consider in making its own complete, precise, and definitive findings and conclusions and upon which it can determine that all reasonable scientific doubt has been removed as to the effects of the proposed project on the integrity of the relevant European sites.

In the light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the competent authority is enabled to ascertain that the proposed project will not adversely affect the integrity of any of the European sites concerned.





## 7. REFERENCES

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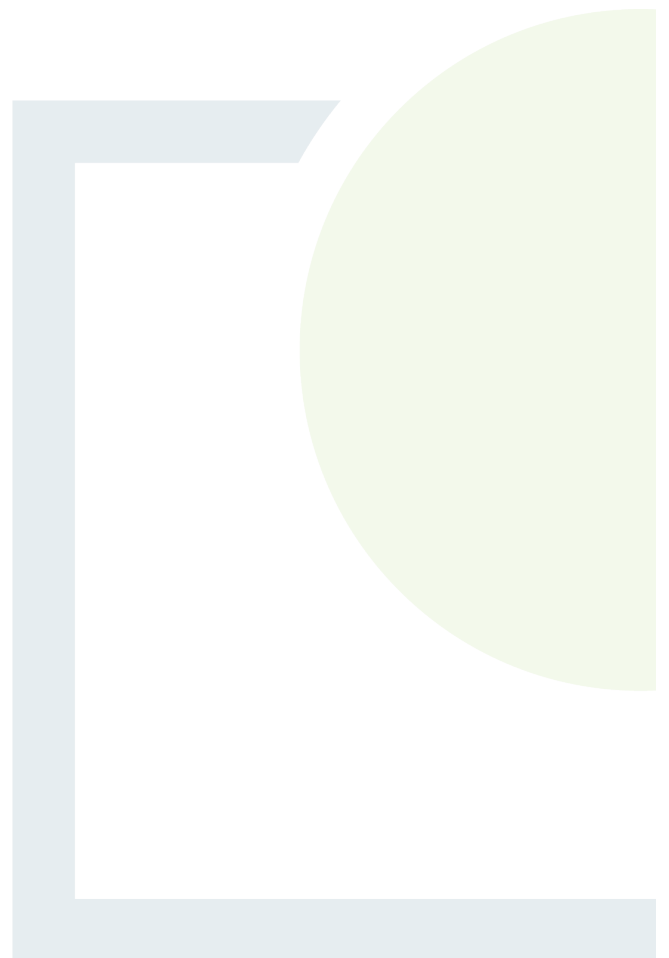




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## APPENDIX 1

EPA AA Screening  
Determination





## Appropriate Assessment Screening Determination

In accordance with Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, the Agency has undertaken Appropriate Assessment screening to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on European Sites. In this context, particular attention was paid to the European Sites listed below.

### Consent Details:

<b>Reg. No.</b>	H0319-01
<b>Applicant Name:</b>	Mayo County Council
<b>Type of Consent Sought:</b>	Certificate of Authorisation
<b>Location of Facility:</b>	Claremorris Historic Landfill, Kilbeg, Claremorris, County Mayo
<b>Certificate of Authorisation Application Date:</b>	1 <sup>st</sup> October 2020
<b>European Sites assessed:</b>	Lough Carra/Mask Complex SAC (site code: 001774)
	Lough Mask SPA (site code: 004062)
	Lough Carra SPA (site code: 004051)
	Carrowkeel Turlough SAC (site code: 000475)
	River Moy SAC (site code: 002298)
	Lough Corrib SAC (site code: 000297)
	Lough Corrib SPA (site code: 0004042)
	Kilglassan/Caheravoostia Turlough Complex SAC (site code: 000504)
	Balla Turlough SAC (site code: 000463)
	Greaghans Turlough SAC (site code: 000503)
	Towerhill House SAC (site code: 002179)
Ardkill Turlough SAC (site code: 000461)	
Ballinafad SAC (site code: 002081)	
<b>Date of AA Screening Determination:</b>	1 <sup>st</sup> April 2021

### AA Screening Determination:

That the activity is not directly connected with or necessary to the management of any European site and that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European site and accordingly determined that an Appropriate Assessment of the activity is required.

The reason for this determination is as follows:

- There is a hydrological connection between the closed landfill and Carra/Mask Complex SAC (site code: 001774) and Lough Mask SPA (site code: 004062) and, despite the fact that these European Sites are located approximately 45km downstream of the site, it cannot be excluded, based on the submitted monitoring results for surface water and groundwater, that the closed landfill will have no effect on these European Sites.
- There is no hydrological connection between the closed landfill and the rest of the European Sites.



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Ewa Babiarczyk

Office of Environmental Sustainability

Date: 1<sup>st</sup> April 2021







**CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE  
& PLANNING**

**[www.fehilytimoney.ie](http://www.fehilytimoney.ie)**

**CORK OFFICE**

Core House  
Pouladuff Road,  
Cork, T12 D773,  
Ireland  
**+353 21 496 4133**

**Dublin Office**

J5 Plaza,  
North Park Business Park,  
North Road, Dublin 11, D11 PXT0,  
Ireland  
**+353 1 658 3500**

**Carlow Office**

Unit 6, Bagenalstown Industrial  
Park, Royal Oak Road,  
Muine Bheag,  
Co. Carlow, R21 XW81,  
Ireland  
**+353 59 972 3800**

