



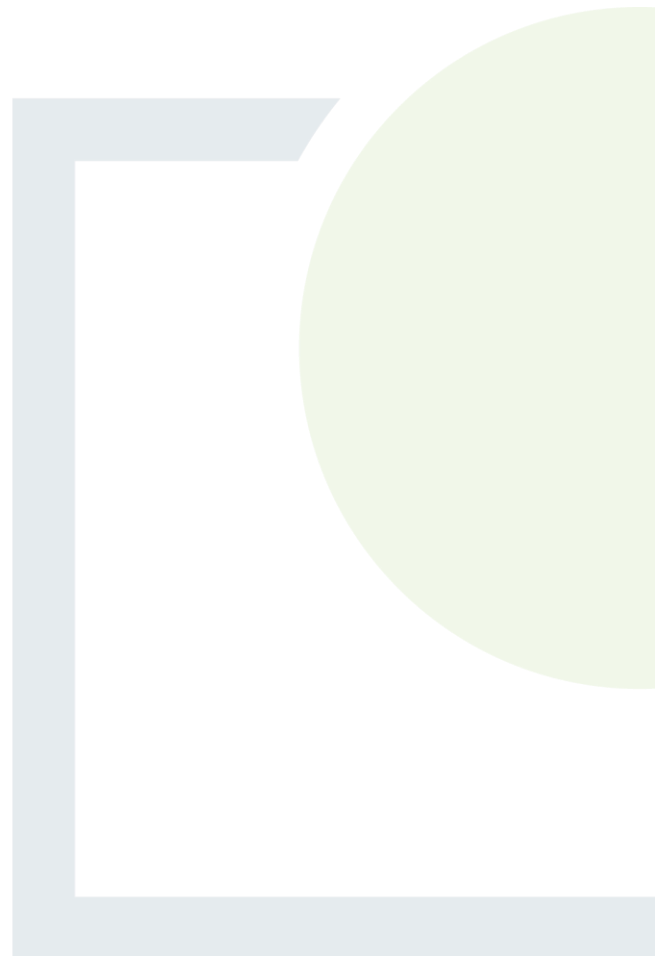
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ATTACHMENT

A.1

Non-Technical Summary

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HISTORIC LANDFILL AT NEW INN, CO. GALWAY

NON- TECHNICAL SUMMARY

Prepared for: Galway County Council



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NON-TECHNICAL SUMMARY

HISTORIC LANDFILL AT NEW INN, CO. GALWAY

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Abstract: This report presents a non-technical summary of the risk assessment for the New Inn Historic Landfill, Co. Galway. The non-technical summary has been prepared to accompany the certificate of authorisation application for the site.

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1. NON-TECHNICAL SUMMARY

1.1 Overview

Fehily Timoney and Company (FT) was appointed by Galway County Council (GCC) to complete a Tier 2 and Tier 3 environmental risk assessment (ERA) and Certificate of Authorisation Application Form (COA) for the New Inn Historic Landfill. The ERA was conducted in accordance with the Environmental Protection Agency (EPA) Code of Practice (CoP) (2007): Environmental Risk Assessment for Unregulated Waste Disposal Sites.

1.2 Site Location and History

New Inn historical landfill covers an area of c.1.5 ha and is located adjacent to the R348, Athenry to Ballinasloe Road, to the west of New Inn. The site is owned by Galway County Council. The surroundings area is mainly agricultural land, there are no dwellings located within the site boundaries, residential dwellings are located less than 50m south-east of the site.

Available evidence suggests the site was operated between 1970's to 1989. It was originally part of a quarry operated by Galway County Council which was later infilled. No remediation measures are known have been carried out apart from fencing of the site. The fencing is now mostly removed or damaged. Groundwater monitoring wells were also previously installed at the site and off site. A number of these locations were utilised as part of assessment.

A site investigation (S.I.) program was completed by FT in 2020. The findings of the site investigation work show that material mainly comprising mixed municipal waste is deposited in a single infill area of 2,600 m² within the fenced site. Based on the geophysical survey profile and applying an estimated average depth of 4.0 m; an estimated 10,400 m³ of waste including fill material is present at the site. Applying an assumed waste density of 1.6 t/m³ this equates to approximately 16,640 tonnes of waste.

Trial pitting confirms that waste material is generally close to the surface, underlying topsoil with little subsoil cover present. No engineered landfill cap is present at the site.

1.3 Geology Hydrogeology, Hydrology and Ecology

Geological Survey Ireland (GSI) describe the quaternary sediments at the site as Gravels derived from Limestones. Drillers' borehole site investigation logs describe the presence of made ground, sand, gravel, clay and limestone at GW01 and GW02. Bedrock geology mapping indicates that the bedrock beneath the site the Lucan Formation (LU) described as dark limestone and shale. No bedrock outcrop present within the site or immediate vicinity.

Bedrock groundwater beneath site comprises two different aquifers: 'Locally important gravel aquifer - Lg' and 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones - LI'. The GSI mapping shows that the groundwater body (GWB) is named Rahasane Turlough GWDTE and is classified as poorly productive bedrock aquifer. No record of wells or private drinking supply wells within the site area.



There are no Groundwater Drinking Water Protection Areas within the site, however the Zone of Contribution (ZOC) Rhynn Killeeneen groundwater protection zone is located c. 40m north of the site at its closest point. The ZOC encompasses sections of the Raford River (as a surface water contributor to the supply) and located north of the site. The 'G131 New Inn' source protection area is located in New Inn, less than 1km from the site to the north-east. Other groundwater protection zones in the region are located over 5km from the site.

The GSI Online mapping data set identifies the vulnerability of groundwater as high (H). Drillers logs for boreholes GW02 show that waste material encountered at this location is underlain by <3m of sandy gravel (75.12 mAOD to 73.92 mAOD) with bedrock encountered at 73.92 mAOD. This suggests that the underlying bedrock aquifer may be extremely vulnerable to leachate migration.

The site is located within the Galway Bay Southeast catchment (Hydrometric Area: 29), Raford_SC_010 sub-catchment and Raford_020 sub-basin. The nearest surface water feature to the site is a small river (EPA Name: Raford_020 river) which is the northeast boundary of the site and flows in an east-west direction eventually converging with the Kilcolgan River (EPA Name) (Status: Bad) c.16km downstream of the site before discharging into Dunbulcaun Bay, past Kilcolgan village, south-west of New Inn. Available evidence suggests there may be surface water connection between the landfill area and the River Raford via land drains along the site boundaries.

The site is not located within or directly adjacent to any Natural Heritage Area (NHA), proposed NHA (pNHA), Special Area of Conservation (SAC) or Special Protection Area (SPA). The nearest protected site, Raford River Bog NHA (Site Code: 000321), is located c.800m to the north-west of the site at its closest point.

1.4 Risk Assessment and Environmental Impacts

GCC first prepared a Tier 1 risk assessment, which determined that the site was a High (Class A) risk to the receiving environment. Applying the EPA risk assessment tool as per the EPA CoP for Unregulated Waste Disposal Sites, yielded a risk score of 70% for source-pathway-receptor (SPR) linkage SPR8.

The Tier 2 site investigation risk assessment concluded that the risk rating of the site was Low (Class C). The main risks identified on the site are SPR6, which refers to leachate migration to public water supply via groundwater pathway, and SPR8 which refers to leachate migration to surface water body via surface.

The Tier 3 assessment further examined and quantified those risks/impacts through generation of quantitative models allowing a prediction of both the current and future impacts on groundwater quality and the current and future extent landfill gas being generated by the waste present on site.

This information was used to inform appropriate remedial and mitigation measures to be implemented on site to either eliminate or reduce these risks.

A comparison of measured static groundwater levels at the historical landfill and abstraction levels of the New Inn abstraction wells confirms that the historical landfill is located downgradient of the water supply and is therefore not a risk to the public water supply.

An assimilative capacity assessment and mass balance calculations indicate that the potential leachate produced at the site has the possibility to impact on water quality downstream of the site but only at conservatively higher hypothetical discharge rates. The predicted downstream concentrations however remain below the surface water quality threshold.



1.5 Proposed Remediation

The Tier 3 assessment concluded a landfill cap will be required across the site to reduce the generation of leachate via percolation of rainwater and subsequently the potential migration of leachate to groundwater and surface water. The site will be reprofiled to promote surface run off and limit percolation of precipitation to the waste body. Passive landfill gas ventilation measures are proposed to mitigate the risk of landfill gas migration post the proposed cap installation.

A detailed schedule of environmental monitoring is proposed at the site to monitor the efficacy of the proposed remediation measures. One additional groundwater monitoring location is proposed downgradient of the site to be included as part of the wider monitoring regime. An additional landfill gas migration/leachate monitoring location is also proposed between the identified waste body and houses to the south-east of the site, adjacent to the R348 road.

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