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KILKENNY HISTORIC LANDFILLS

NON- TECHNICAL SUMMARY HISTORIC LANDFILL AT THORPES, CO. KILKENNY

Prepared for: Kilkenny County Council



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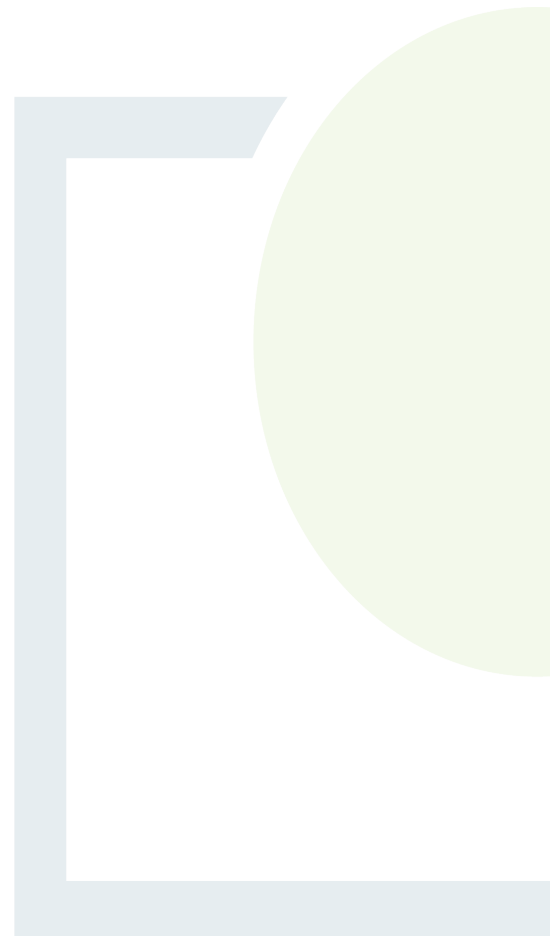
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NON-TECHNICAL SUMMARY HISTORIC LANDFILL AT THORPES, CO. KILKENNY

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Abstract: This report presents a non-technical summary of the Tier 3 risk assessment for the Thorpes Historic Landfill, Co. Kilkenny. 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 Kilkeny County Council (KCC) to complete a Tier 3 environmental risk assessment (ERA) and Certificate of Authorisation Application Form (COA) for Thorpes 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. FT previously completed the Tier 2 assessment of the site.

1.2 Site Location and History

The site is located approximately 1.5km east of the town of Ballyragget, Co. Kilkeny, off the R694 Ballyragget to Castlecomer road.

The site occupies approximately 1.8 hectares and was used by KCC for the disposal of municipal waste. The exact period of waste disposal activities at the site is unknown. The site is unregistered as a landholding and currently is predominantly overgrown with vegetation and trees. A small concrete hardstanding area was constructed along the northern boundary of the site which appears to be used for agricultural purposes. The surrounding land is used for agriculture, namely grazing.

The Tier 2 site investigations confirmed that the historic landfill typically contained large fragments of waste typical of non-putrescible household, commercial and industrial type waste deposited in a single infill area tending east to west within and along the steep embankment of the Ballyragget stream. Waste is deposited in a single area covering approximately 0.84 hectares. It appears deposition was by tipping from the elevated roadside down the steep embankment. The waste footprint was estimated from a site walkover, extending to maximum dimensions 210m in length and 40m in width.

1.3 Hydrogeology and Ecology

The Quaternary Map provided by GSI Online identifies the quaternary sediments at the site as till derived from Limestones, with a small area in the western portion of the site are identified as 'glaciofluvial sands and gravels' derived from Limestones.

The bedrock beneath the site is founded on the Killeshin Siltstone Formation. This formation is described as 'Muddy siltstone and silty mudstone'. An unconformity runs northwest to southeast beyond the southwestern boundary of the site. The bedrock mapping indicates the sites western boundary lies near 'cherty, muddy, calcarenitic limestone' bedrock from the Clongrenan Formation. The bedrock is characterised as typically medium-coarse grained thick limestone beds with a variable presence of shales. Evidence of karstic landforms have been identified within this bedrock formation at Donaghmore Well located approximately 1.5 km south of the project site.

The underlying bedrock aquifer is a 'Poor Aquifer – Bedrock which is generally unproductive'. An area of 'Regionally important Aquifer – Karstified (diffuse)' is present within 50m of the western site perimeter. There are no Groundwater Drinking Water Protection Areas within the site boundary according to GSI. The closest protection area is Ballyconra PWS, located approximately 2.5 km from site. The GSI Online mapping data identifies the groundwater vulnerability as 'low' and 'high' for the eastern and western section of site respectively.

The site is hydraulically located within the: Nore catchment (Hydrometric Area 15), in the Nore_SC_080 sub-catchment and Nore_130 river sub-basin. The nearest surface water feature to the site is a stream (EPA Name: Ballyragget) which flows from north east to south west along the base of the steep embankment parallel to the road. The stream diverges west from the road, travelling west and then in a southwest direction towards the River Nore, meeting c.1.70 km downstream of the site. The Nore River is located approximately 1.60 km west of the site at its closest point. The Nore discharges to River Barrow, which discharges to Waterford Harbour c. 67 km south of the site.

The site is not within or directly adjacent to any Natural Heritage Area (NHA), proposed NHA (pNHA), Special Area of Conservation (SAC) or Special Protection Area (SPA). However, the following SACs, SPAs and pNHAs are located within 5km of the site: River Nore/Abbeyleix Woods Complex NHA (approximately 1.6 km west of the site), Inchbeg pNHA (approximately 4.7 km southwest of the site), River Barrow and River Nore SAC (approximately 1.5 km west of the site and approximately 4.0 km to the southeast of the site) and River Nore SPA (approximately 1.6 km to the west of the site).

1.4 Risk Assessment and Environmental Impacts

A Tier 1 study was conducted by KCC and determined the site to be a moderate risk classification (Class B). The primary risks identified by KCC related to the historic landfill being located on a regionally important karstified aquifer and the risk of leachate runoff entering a nearby stream.

The results of the Tier 2 assessment and risk model conducted by FT, re-classified the site is a Low Risk Classification (Class C). The highest risk identified in the risk prioritisation was the migration of leachate from the site to the Ballyragget Stream. Surface water monitoring undertaken as part of the Tier 2 study indicated no measurable effect on surface water quality downstream of the site. The reclassification of the risk from Moderate Risk Class B to a Low Risk Class C is based on the age of the waste mass and the non-putrescible constituents identified during the site walkover.

Tier 3 Assessment applied a Generic Quantitative Risk Assessment (GQRA) and reviewed additional surface water monitoring results comparing to relevant surface water quality standards in order to determine the impact, if any, of the deposited waste on the quality of the Ballyragget Stream. During 2020, additional surface water monitoring on the Ballyragget Stream confirmed that the waste is not causing deleterious effect on the surface water quality of the stream. Elevated concentrations of ortho-phosphate, above the environmental quality standard threshold value were detected in upstream and downstream samples, with upstream samples yielding higher concentrations than downstream samples. This indicates that the elevated concentrations observed are likely attributed to other sources upstream of the waste material and not directly associated with the site. The environmental monitoring findings confirm the determination that the risk associated with the site is low.

1.5 Proposed Remediation

No physical remediation or engineering works are proposed for the site. It is proposed to annually monitor the surface water quality of the Ballyragget Stream, upstream and downstream of the site to confirm the finding of the assessment.



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