Eve O'Sullivan

Subject: Historic Landfill Barnageeragh, Skerries
Attachments: Historic Landfill Barnageeragh(004).pdf

From: David Storey <David.Storey@fingal.ie>
Sent: Friday 14 May 2021 13:13
To: Licensing Staff <L.Staff@epa.ie>; Licensing Staff <L.Staff@epa.ie>
Cc: John Daly <John.Daly@fingal.ie>; James Walls <James.Walls@fingal.ie>
Subject: Historic Landfill Barnageeragh, Skerries

To whom it concerns

Please see attached correspondence regarding Historic Landfill Barnageeragh, Skerries

Kind Regards

David Storey

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FAO: Marie O Connor, Programme Manager

14 May 2021

Re: Historic Landfill H0167-01 Barnageeragh Cove. Draft Certificate of Authorisation.

Dear Ms O Connor

In accordance with Regulation 7(5) of the Waste Management (Certification of Historic Unlicenced Waste Disposal and Recovery Activity) Regulations 2008, Fingal County Council (FCC) makes the following representations to the Agency on the draft certificate of authorisation (CoA), register number H0167-01.

Inspector's Report

There are a number of statements within the inspector's report that FCC would request that the Agency clarify and/or amend as set out below:

On page 3 of the inspector's report it states: "*Hazardous waste was also deposited across the entire waste body in Area 1, as shown in Figure 3.*" This statement could be misleading to readers not familiar with the detail contained in the reports. As stated in the Section 6.1.1.2 (p.35) of the *Tier 2 and Tier 3 Environmental Risk Assessment*, hazardous waste was detected within 10 of 41 soil samples.

On page 7 of the inspector's report it states: "*The sampling results show that leachate is typical of leachate generated in a non-hazardous landfill with the exception of ten soil samples within Area 1 that returned a hazardous classification. The applicant assigned a waste code of 17 05 03* for these samples: soil and stones containing hazardous substances.*" This statement could be misleading to readers not familiar with the detail contained in the reports. As shown in the Table 6.3 (p.37) of the Tier 2 and Tier 3 Environmental Risk Assessment and Section 6 of the DQRA, the results for WAC testing exceed the inert limits but they do not exceed the non-hazardous limits as set out in *Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC* (2003/33/EC).

In addition, the results of the WAC testing (leachate) and the soil testing should not be conflated. The soil samples that exceed the hazardous limits for certain determinands relate to the solid fractions contained with the soil sampled and therefore are used to classify the waste as non-hazardous or hazardous in accordance with the List of Wastes. The WAC tests are for the leachable fractions of the determinands and are used to confirm the type of landfill the waste can be deposited into, i.e. inert, non-hazardous or hazardous landfill.

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On page 13 of the inspector's report it states: "*Accordingly, it is considered that the Moderate Risk scoring for lateral and vertical gas migration, as stated in Tier 1 assessment, is reflective of the actual conditions on site. It is therefore recommended that the risk category of the landfill remains as Moderate Risk (Class B) due to the risk for lateral and vertical gas migration.*" The SPR matrices provide a coarse methodology for assigning risk. The results of landfill gas monitoring and the characterisation of risk from ground gases as presented in the Tier 2 and Tier 3 Environmental Risk Assessment provide a much greater level of detail and assessment based on the British Standard BS8485:2015+A1:2019. In addition, a highly conservative approach was taken with the assessments that is based on the worse-case scenario taking peak concentrations, not the steady state or average concentrations. Therefore, the low to very low risk from landfill gases is representative of the conditions measured on-site.

As a general comment, we would note that BH4 while located just outside the boundary of Area 1 and in Area 2 was included within the area capped with LLDPE.

Condition 1.5 Beneficial Uses

FCC welcome the inclusion of this condition as the area has the potential to be a significant amenity for the local population.

Condition 3.1 (b) Capping System

The area shown within the LLDPE boundary in Area 1 on drawing reference MGE0755-RPS-00-XX-DR-C-DG0001-02 has already had the landfill capping system constructed (**Picture 1**).

Picture 1 Capped Area within Area 1.

The grassed area in front of houses No.27 to 32 has been fully landscaped with trees planted around the perimeter of the area (shown in Picture 1 below). We would also note that there is a national monument located within this grassed area (ref: DU005-017001 mound, shown in Picture 2).

Construction works to install a landfill capping system within the grassed area as specified in the Draft CoA would require a >1m deep excavation from the edge of pavement up to the border of the national monument. This would result in significant disruption to the amenity of this grassed area as well as the destruction of the trees and possible damage to the national monument.

FCC is of the opinion that the requirements of the Draft CoA as they relate to this part of the site are not a sustainable solution given the age of the waste and the environmental risks. As the area is fully grassed and clean subsoil and topsoil have been placed over the waste, this should provide adequate protection from significant infiltration of rainwater into the waste body. This should be sufficient mitigation such that the installation of a fully engineered landfill capping system is not necessary.

Picture 2 Grassed Area Opposite House No. 27 to 32 (view east).

Picture 3 Grassed Area Opposite House No. 27 to 32 Showing National Monument (view west).

FCC therefore request that the requirement to install an engineered landfill capping system over this area be removed from the CoA. If this is not acceptable to the Agency, FCC requests that the Agency permit a reduced thickness of soil (subsoil and topsoil) of 0.5m in order to limit the depth of excavation required and the potential to cause significant disturbance to the national monument.

Condition 3.1 (c) Passive Gas Venting System

Outside of the capped area in Area 1, the installation of a passive gas venting system across Area 1 and Area 2 as well as the installation of gas cut-off trenches is considered excessive in terms of the risk

posed from the landfill gas. FCC note the following with regard to the various items included in Condition 3.1(c):

Area 1 where waste is deposited;

Area 1 consists of two areas, the main waste body, which has been capped (**Picture 1**), and the grassed area to the front of houses 25 through 32 which has already been landscaped and planted with trees (**Picture 2** and **Picture 3**).

The main waste body is the primary source of landfill gas on-site. This area has already been capped with an engineered landfill capping system within the area outlined by the LLDPE boundary in Area 1 on drawing MGE0755-RPS-00-XX-DR-C-DG0001-02. The capped area includes four boreholes underneath the LLDPE that are connected to a single vent stack, 6m high with a cowl. Further passive gas vents can be installed in this area if deemed necessary.

However, installing a system of passive gas vents across the grassed area in Area 1 (opposite houses 25 to 32) with 6m high vent stacks will create a significant visual intrusion to the houses fronting the green area. Therefore, FCC requests that the Agency consider only conditioning within the grassed area in Area 1 (opposite houses 25 to 32) the installation of a gas cut-off trench, unless otherwise agreed with the Agency, and not the gas venting system.

In the made ground of Area 2

Area 2 is nearly all made ground. As shown on drawing reference: MGE0755-RPS-01-XX-DR-C-DG0002 no waste other than "indigenous soil" was encountered in the trial pits in Area 2, except for two locations (METP39 and METP43). As per the clarification issued to the Agency and noted in the inspector's report (p.3), only small pieces of wood/ timber and concrete were encountered. Therefore, the requirement to install a passive gas venting system across Area 2 is deemed to be excessive and unsustainable.

FCC would note that Area 2 has planning permission for the construction of a multi-use games area (MUGA) and associated works and landscaping (refer to **Figure 1**). The installation of a system of 6m high gas vent stacks across Area 2 would likely preclude the development of the MUGA.

Therefore, FCC requests that the Agency consider only conditioning the installation of the passive gas venting system in the area along the boundary between Area 1 and Area 2 with 12 months of monitoring to be undertaken. Subject to Condition 3(c) (iii) – discussed further below – a gas cut-off trench or similar may be installed in Area 2 following 12 months of monitoring.

Detail 1 - Muga & Openspace Treatment Plan Scale 1:500

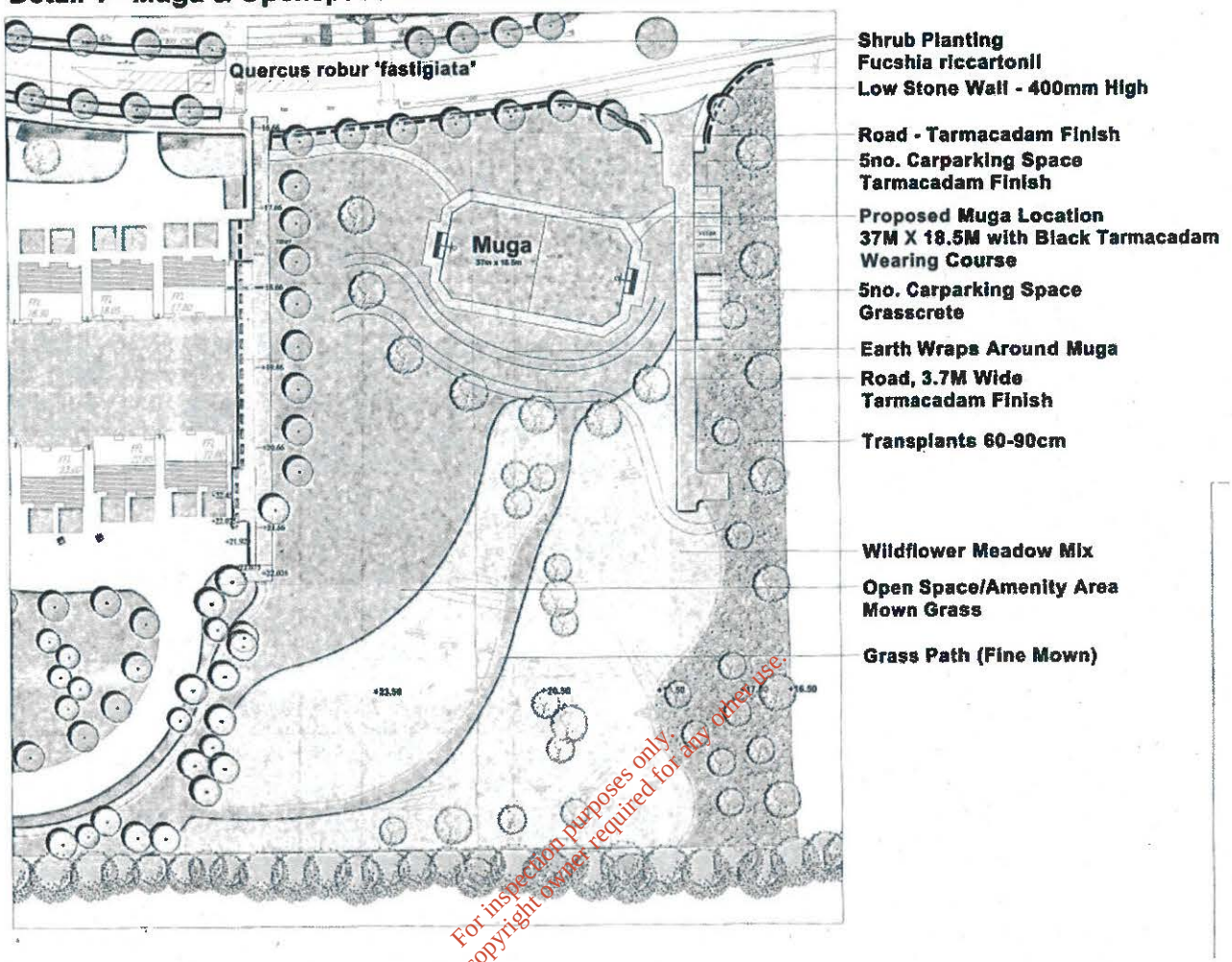

Figure 1 Consented MUGA Layout within Area 2.

Unless otherwise agreed by the Agency, any area outside of the above, where elevated gas concentrations were recorded in the Tier 2 Assessment (>1.0% methane, >1.5% carbon dioxide).

FCC requests that the Agency consider amending this condition to state that it is only required where, following 12 months of monitoring, it is demonstrated that elevated gas concentrations persist.

The passive gas venting system shall include the following elements – items (i), (ii) and (iii)

FCC requests that the Agency consider amending this condition to include the additional text underlined below:

> "The passive gas venting system shall include the following elements unless otherwise agreed with the Agency."

The inclusion of this text will provide FCC with the option to explore alternative solutions that may achieve the same end goal of protection from landfill gas migration.

The proposed condition with the requirement to backfill the gas cut-off trenches with gravel and have a high density polyethylene (HDPE) liner installed on the house side of the gas cut-off trench has the

potential to create significant disturbance, disruption and upset to local residents. Significant quantities of soil, stones and waste would have to be excavated to a considerable depth (5 to 10m) and transported off-site for disposal. Alternative solutions that could be considered include the use of virtual gas curtains. These may provide a more sustainable and less disruptive solution that meets the primary objective of intercepting migrating landfill gases.

In addition, FCC cannot interfere with the Irish Water sewer which traverses the site and any such gas venting system will have to be designed to avoid this pipeline.

Condition 3.6 Engineered Landfill Cap in Area 2

The installation of an engineered landfill cap over Area 2 will serve no significant purpose. The impermeable capping layers are designed to prevent rainwater infiltrating through to the waste body and potentially generating leachate. As noted in the Tier 2 and Tier 3 Environment Risk Assessment, no waste of any significance was encountered in the trial pits in Area 2. The "waste" in Area 2 can largely be characterised as soil and stones. Taking a worse-case scenario into consideration for Area 2, it could be deemed to be an inert landfill. In accordance with Figure 10.1 (p.97) of the EPA Landfill Site Design Manual, the minimum thickness of capping required is 0.5m of soil (topsoil and subsoil). Where tree planting is required, this is increased to 1m in total as per Table 4.3 (p.23) *Recommended Minimum Soil Depth (After Placement) Required For Restoration For Various Landfill Types* of the EPA Landfill Manual Landfill Restoration and Aftercare. The combination of the landscaping already in place and the proposals for the MUGA will effectively meet this inert landfill requirement for capping.

As noted in this letter and as shown in **Figure 1**, there are plans to fully landscape Area 2 and construct the MUGA. Condition 3.6 will delay completion of the MUGA works for at least 12 months if not longer.

Taking all of the above into consideration, FCC considers that the potential requirement to install an engineered landfill cap in Area 2 is unnecessary and unsustainable given the extremely low risks involved and therefore FCC requests that the Agency consider deleting this condition from the final CoA.

Condition 3.16 Planting of Trees

Tree planting in public amenity areas provides screening, shelter, and clean air. They are essential to the landscape design of green spaces. Given the urban environment and the future planned use of this historical landfill as a public space, Condition 3.16 places an unnecessary constraint on the landscape designers. We also note that Table 4.3 (p.23) *Recommended Minimum Soil Depth (After Placement) Required For Restoration For Various Landfill Types* (p.23) of the EPA Landfill Manual Landfill Restoration and Aftercare states that for inert landfills a minimum combined depth of 1000mm of subsoil and topsoil is required for tree planting while for non-inert landfills a minimum combined depth of 1000mm of subsoil and topsoil is required for tree planting where a synthetic barrier is incorporated into the capping system.

For the already capped areas at Barnageeragh Landfill there is a 1000mm clay cap overlying the surface water geocomposite overlying the 1mm thick LLDPE synthetic geomembrane.

As such, FCC requests that the Agency consider deleting this condition from the final CoA.

Yours sincerely,

David Storey

David Storey
Director of Environment, Climate Change and Active Travel