Attachment-4-3-2-Landfill Emissions and Controls (Supporting Information)

Attachment L.1:

Details of the site selection for the addition landfill capacity is outlined in Chapter 3 (Reasonable Alternatives) of the Further Development EIAR.

A location map for the facility is included in Section 3 of the online application form. In addition, site location maps illustrating the background regional geology and hydrogeology are presented in Chapter 7 of the Further Development EIAR.

An Operational Report is included as Attachment 4.8-1.

Details of the basal liner containment and gas and leachate management for the landfills is outlined in in Chapter 2 (Description of the Development) of the Further Development EIAR.

Details of the post-closure care of the facility are presented in the Closure, Restoration and Aftercare Management Plan (CRAMP) included as Attachment-9-2-3.

Attachment L.2:

Full details of the basal liner for the landfills is provided in Section 2.3.2 of the EIARs.

Landfill construction gradients are specified on the drawings included as Volume III to the EIARs mentioned above.

Attachment L.3:

Leachate monitoring in the landfill waste body will be carried out on a continuous basis by the use of hydrostatic sensors located in the leachate collection sumps which is connected to a SCADA system. The leachate collection system layout for the proposed additional landfill capacity is shown on Drawing No.11290-2012. The hydrostatic sensors located in the leachate collection sumps.

Attachment L.4:

Details on landfill gas management are provided in Section 2.3.4 of the Further Development EIAR. The landfill gas management system which includes controlled flaring and utilisation plant for conversion of the gas to electricity, is currently in operation at the facility.

The landfill gas management system will capture and treat gas from the existing MSW and the proposed additional Landfill capacity.

The volume of landfill gas generated at the existing MSW Landfill in 2023 was estimated using real live data obtained from the existing landfill gas management infrastructure. This calculates that approximately 12,982,339 m^3/year of landfill gas is produced in the MSW Landfill which equates to 1,482 m^3/hr based on a 24/7 operation. The existing MSW Landfill will only remain operational until 2028 after which the existing landfill will cease accepting waste.

Table L.4 (ii) in the 4.3.2 Landfill-Emissions and Controls template provides representative monitoring results from the landfill gas flares (F1 & F2) and the landfill gas utilisation plant, engine 1 (E1).

Attachment L.5:

Details on the landfill capping system are provided in Section 2.3 of the EIAR and a typical section of the capping is shown on Drawing No. 11290-2063.

The EIARs mentioned above outline the requirements for the preparation of Method Statements and Quality Control Procedures during the landfill construction. The Method Statements will be prepared as required by the Contractor prior to commencement of the works. The Engineer will detail the Quality Control procedures as part of the landfill construction tender process.

Attachment L.6:

As is currently in place at the Drehid WMF, a weather station is erected adjacent to the administrative building which measures precipitation, minimum temperature, maximum temperature and atmospheric pressure, on a daily basis. This weather station will be retained for the duration of operations at the Drehid WMF.

In addition, for the purposes of reporting data for the facility AERs, average rainfall and temperature data is obtained from the meteorological station at Casement Aerodrome which is located approx. 40 km from the facility.

Attachment L.7:

The costs in the setting up, operation of, and provision of financial security and closure and after-care, for a period of at least 30 years, are covered by the price charged for the disposal of waste at the facility.

The Drehid WMF is required to submit a Section 53A Statement annually in line with a legal requirement under Section 53A of the Waste Management Act 1996 (as amended) and Condition 12.4 of the existing IED License (W0201-03). This is completed by Bord na Móna Plc. at the end of its

financial year which (in 2022) is the end of March 2023. Following the finalisation of its financial year end accounts, Bord na Móna submit a S53A statement to the Agency via Eden.

In line with the above ongoing practice, Bord na Móna will duly oblige with the requirement to submit a S53A Statement to the Agency upon granting of a new IED Licence.

Attachment L.8:

Details of the proposed phasing of the additional landfill capacity are presented in Section 2.3.1 of the Further Development EIAR. The phasing of the proposed additional landfill infrastructure is also shown on Drawing No.11290-2011.

Attachment L.9:

The estimated material quantities for construction of the additional Landfill capacity is set out in Tables 2-12 of the Further Development EIAR.

The estimated material quantities for construction of the additional landfill capacity is set out in Table L.9.1 below.

Table L.9.1: Estimated material quantities for construction of new landfill phases

Item	Material	Quantity	Source
Material for landfill embankment construction	Compacted suitable subsoil materials	138,333 m^3	Won on-site
Low permeability basal layer (BES)	Bentonite clay (c. 5% of overall BES quantity)	8,353 m^3	Import
	Host soil/sand (c. 95% of overall BES quantity)	158,702 m^3	Import
Basal liner geomembrane	Flexible HDPE geomembrane (2.0 mm)	339,905 m^2	Import
Basal liner separation geotextile	Geotextile (>125g/m^2) or similar	339,905 m^2	Import
Basal liner protection geotextile	Woven geotextile (>750 g/m^2) or similar	339,905 m^2	Import
Drainage layer	16-32 mm stone aggregate or similar	152,740 m^3	Import
Daily cover	C&D fines, low permeability soils and biostabilised material or similar	136,242 m^3	Import & Won On-Site NOTE 1
Temporary/ Intermediate cover	C&D fines, low permeability soils and biostabilised material or similar	136,242 m^3	Import & Won On-Site NOTE 1

Item	Material	Quantity	Source
Landfill gas collection	Geosynthetic gas drainage such as EnkaDrain or similar	340,606 m^2	Import
Capping liner geomembrane	Flexible LLDPE geomembrane liner (1.5 mm) or similar	340,606 m^2	Import
Capping liner protection geotextile	Woven geotextile (>750 g/m^2) or similar	340,606 m^2	Import
Capping drainage	Geosynthetic water drainage such as EnkaDrain or similar	340,606 m^2	Import
Capping subsoil	Suitable subsoil material (850 mm)	289,515 m^3	Won on-site
Capping topsoil	Suitable topsoil material (150 mm)	51,091 m^3	Import & Won On-Site NOTE 2

NOTE 1 Biostabilised fines may be supplied from the compost plant facility outputs as per Section 2.2.4 of the EIAR or imported from external sources.

NOTE 2 Inert waste which is suitable for recovery in the capping topsoil maybe be imported to the facility.