Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

INDUSTRIAL EMISSIONS LICENCE

Licence Register Number:	**W0146-04**
Company Register Number:	**529325**
Licensee:	**Knockharley Landfill Limited**
Location of Installation:	**Knockharley Navan (Includes Townlands of Tuiterath and Flemingstown) County Meath**

ENVIRONMENTAL PROTECTION AGENCY ACT 1992 AS AMENDED

INDUSTRIAL EMISSIONS LICENCE

Decision of Agency, under Section 90(2) of the EPA Act 1992 as amended in respect of licence

Reference number in Register of licences: W0146-04

Further to notice dated 13/04/2023, the Agency in exercise of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, for the reasons hereinafter set out, hereby grants an Industrial Emissions review licence to Knockharley Landfill Limited, Panda Waste Management Solutions, Ballymount Road Upper, Dublin 24, CRO number 529325,

to carry on the following activities

11.4 (b)(iii)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): treatment of slags and ashes.
11.5	Landfills, within the meaning of Section 5 (amended by Regulation 11(1) of the Waste Management (Certification of Historic Unlicenced Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008)) of the Act of 1996, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, other than landfills of inert waste.
11.1	The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required

at Knockharley Landfill, Knockharley, Navan, (Includes Townlands of Tuiterath and Flemingstown), County Meath, subject to the conditions as set out.

The carrying on of the following activities is refused:

11.4 (a)(ii)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): physico-chemical treatment.
11.4 (b)(i)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): biological treatment.

GIVEN under the Seal of the Agency on this day the 16th day of May 2023.

PRESENT when the seal of the Agency
was affixed hereto:

Ray Cullinane

Ray Cullinane, Authorised Person

INTRODUCTION

This introduction is not part of this licence and does not purport to be a legal interpretation of this licence.

This licence is for the further development and operation of a non-hazardous waste landfill at Knockharley, Navan, County Meath (includes townlands of Tuiterath and Flemingstown).

The waste for disposal at the landfill consists of household, commercial and industrial waste and stable, non-reactive hazardous waste. Incinerator bottom ash will be recovered at the landfill and indoor storage of baled recyclables and baled municipal solid waste will also be provided.

The installation covers an area of 135 hectares, of which approximately 25 hectares is utilised for the landfill. The site infrastructure includes a landfill gas collection and utilisation plant, flaring system, leachate managment system, surface water management system and associated infrastructure including weighbridges, wheelwash, waste inspection and quarantine area, maintenance garage, adminstration building and a car parking area.

Waste intake at the installation is limited to a total of 440,000 tonnes per annum. This includes a maximum total of 150,000 tonnes per annum of incinerator bottom ash (IBA) and a maximum total per annum of 5,000 tonnes of stable, non-reactive hazardous waste (SNRHW).

For the purpose of the EU Industrial Emissions Directive (2010/75/EU), the installation falls within the scope of the following Annex I categories:

Category 5.3 (b)(iii)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, and excluding activities covered by Directive 91/271/EEC: treatment of slags and ashes.
Category 5.4	Landfills, as defined in Article 2(g) of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, excluding landfills of inert waste.

This licence sets out in detail the Conditions under which Knockharley Landfill Limited will operate and manage this installation.

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Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Act 1992 as amended, unless otherwise defined in the glossary.

Accident	For the purpose of this licence an accident means an unplanned event that may result in pollution.
Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Agreement	Agreement in writing.
Approval	Approval in writing/electronically.
Annually	All or part of a period of twelve consecutive months.
Application	The application by the licensee for this licence.
Appropriate Facility	A waste management facility or installation, duly authorised under relevant law and technically suitable.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application.
BAT	Best Available Techniques (BAT) as described in the Commission Implementing Decision (CID) of 2019/2010 establishing Best Available Techniques (BAT) Conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration as a reference when setting licence conditions. Reference to BAT numbers in the conditions of this licence are references to the BAT Conclusions according to how they are numbered in the aforementioned CID.
BAT conclusions	A document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures.
BAT reference document	A document drawn up by the Commission of the European Union in accordance with Article 13 of the Industrial Emissions Directive, resulting from the exchange of information in accordance with that Article of that Directive and describing, in particular, applied techniques, present emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques.
Biannually	At approximately six – monthly intervals.
Biennially	Once every two years.
Biodegradable waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
Biodegradable municipal waste (BMW)	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.

Bio-stabilised residual waste	Residual biodegradable municipal waste that has been stabilised to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
Bottom ash treatment plant	Plant treating slags and/or bottom ashes from the incineration of waste in order to separate and recover the valuable fraction and to allow the beneficial use of the remaining fraction. This does not include the sole separation of coarse metals at the incineration plant.
Buffer Zone	The zone between the area within which no waste shall be deposited and the boundary of the installation.
By-product	Material notified under Article 27 of the European Community (Waste Directive) Regulations 2011 (SI No. 126 of 2011) which the Agency has not determined (under article 27(3) of the Regulations) to be waste.
CBOD	5 day Carbonaceous Biochemical Oxygen Demand (with nitrification suppression).
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Characterisation of waste	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) of 26 April 1999 on the landfill of waste, as amended.
COD	Chemical Oxygen Demand.
Coding of waste	The allocation of a List of Waste code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
Commercial Waste	As defined in Section 5(1) of the Waste Management Acts 1996, as amended: 'Commercial Waste' means Waste from premises used wholly or mainly for the purposes of a trade or business or for the purposes of sport, recreation, education or entertainment but does not include household, agricultural or industrial waste.
Compliance Point	The point (location, depth) at which a compliance value should be met. Generally it is represented by a borehole or monitoring well from which representative groundwater samples can be obtained.
Compliance Value	The concentration of a substance and associated compliance regime that, when not exceeded at the compliance point, will prevent pollution and/or achieve water quality objectives at the receptor.
Consignment Note	As specified in the Waste Management (Movement of Hazardous Waste) Regulations (SI No. 147 of 1998).
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the LoW or as otherwise may be approved by the Agency.
Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Continuous measurement	Measurement using an automated measuring system permanently installed on site.

Cover material	Non-hazardous materials including, as appropriate, uncontaminated woodchip, bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials or other cover material the use of which has been agreed by the Agency.
CRO Number	Company Register Number.
Daily	During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
Daily Cover	Is the term used to describe material spread (200mm to 300mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
Day	Any 24-hour period.
Daytime	0700hrs to 1900hrs.
dB(A)	Decibels (A weighted).
Diffuse Emissions	Non-channelled emissions (e.g. of landfill gas, dust, odour) into the environment, which can result from 'area' sources (e.g. tanks) or 'point' sources (e.g. pipe flanges).
Disposal	Any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy.
DO	Dissolved oxygen.
Documentation	Any report, record, results, data, Drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a Drawing or Drawing number means a Drawing or Drawing number contained in the application, unless otherwise specified in this licence.
EIAR	Environmental Impact Assessment Report.
Emergency	Those occurrences defined in Condition 9.4.
Emission limits	Those limits, including concentration limits and deposition rates, established in *Schedule B: Emission Limits,* of this licence.
EMP	Environmental Management Programme.
EMS	Environment Management System. The aspect of the organisation's overall management structure that addresses immediate and long-term impacts of its products, services and processes on the environment.
End-of-Waste	As specified in Article 28 of the European Community (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011), as amended by European Community (Waste Directive) Regulations 2020 (S.I. No.323 of 2020).
End User Agreement	An agreement between the licensee and Uisce Éireann which provides for the contractual Conditions and arrangements (outside the terms and Conditions set out in this licence) relating to the acceptance of, and treatment by, Uisce Éireann of the licensee's trade effluent, wastewater and leachate where arising.
Environmental damage	As defined in Directive 2004/35/EC.

EPA	Environmental Protection Agency.
Evening Time	1900hrs to 2300hrs.
Facility	Any site or premises used for the purpose of the recovery or disposal of waste.
Footprint	Area where waste is deposited of in lined cells.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
Gas Oil	Gas oil as defined in DIRECTIVE (EU) 2016/802 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels.
GC/MS	Gas chromatography/mass spectroscopy.
Green Waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Groundwater	Has the meaning assigned to it by Regulation 3 of the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010), as amended.
ha	Hectare.
Hazardous Substances	Substances or mixtures as defined in Article 3 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures.
Hazardous Waste	Waste which displays one or more of the hazardous properties listed in Annex III of Directive 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives.
Heavy metals	This term is to be interpreted as set out in "Parameters of Water Quality, Interpretation and Standards" published by the Agency in 2001. ISBN 1-84095-015-3.
HFO	Heavy Fuel Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008.
Hours of operation	The hours during which the installation is authorised to be operational.
Hours of waste acceptance	The hours during which the installation is authorised to accept waste.
IBA	Incinerator Bottom Ash.
ICP	Inductively coupled plasma spectroscopy.
IE	Industrial Emissions.

Incident

The following shall constitute an incident for the purposes of this licence:

(i) an emergency;

(ii) any emission which does not comply with the requirements of this licence;

(iii) any malfunction or breakdown of key environmental abatement, control or monitoring equipment;

(iv) any rejected load of waste, or any waste load that does not meet the waste acceptance criteria;

(v) any exceedance of the daily duty capacity of the waste handling equipment;

(vi) any trigger level specified in this licence which is attained or exceeded;

(vii) any compliance value specified in this licence which is attained or exceeded; and

(viii) any indication that environmental pollution has, or may have, taken place.

Industrial Emissions Directive

Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (Recast).

Industrial waste

As defined in Section 5(1) of the Waste Management Act 1996 as amended.

Inert Waste:

Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.

Installation

A stationary technical unit or plant where the activity concerned referred to in the First Schedule of EPA Act 1992 as amended is or will be carried on, and shall be deemed to include any directly associated activity, which has a technical connection with the activity and is carried out on the site of the activity.

Installation Manager

The licensee or an authorised representative of the licensee with the appropriate seniority and authority to ensure compliance with the licence.

Intermediate Cover/Capping

Refers to placement of appropriate material (minimum 500mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste. Its objective is to minimise odour, leachate generation and nuisance generated from waste within the landfill.

K

Kelvin.

kPa

Kilopascals.

$L_{Aeq,T}$

This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T).

Landfill

In accordance with the Landfill Directive:

'landfill' means a waste disposal site for the deposit of the waste onto or into land (i.e. underground), including:

- internal waste disposal sites (i.e. landfill where a producer of waste is carrying out its own waste disposal at the place of production), and
- a permanent site (i.e. more than one year) which is used for temporary storage of waste,

	but excluding: - facilities where waste is unloaded in order to permit its preparation for further transport for recovery, treatment or disposal elsewhere, and - storage of waste prior to recovery or treatment for a period less than three years as a general rule, or - storage of waste prior to disposal for a period less than one year. In relation to this licence, the landfill refers to the area of the installation where the waste is disposed of by placement on the ground or on other waste i.e. the landfill footprint.
Landfill Directive	Landfill Directive means Council Directive (EU) 2018/850 of 30 May 2018 amending Directive 1999/31/EC on the landfill of waste.
Landfill Gas	All the gases generated from the landfilled waste.
$L_{Ar,T}$	The Rated Noise Level, equal to the L_{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound.
Leachate	Any liquid percolating through the deposited waste and emitted from or contained within a landfill.
LEL (Lower Explosive Limit)	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
Licensee	Knockharley Landfill Limited, Panda Waste Management Solutions, Ballymount Road Upper, Dublin 24, CRO Number: 529325.
Liquid Waste	Any waste in liquid form including waste waters but excluding sludge.
Local Authority	Meath County Council.
List of Wastes (LoW)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2014/955/EU, as amended by any subsequent amendment published in the Official Journal of the European Community.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to adequately perform its function adequately.
Mass flow limit	An emission limit value expressed as the maximum mass of a substance that can be emitted per unit time.
Mass flow threshold	A mass flow rate above which a concentration limit applies.
Medium Combustion Plant	Combustion plant to which Regulation 4 of European Union (Medium Combustion Plants) Regulations 2017 applies.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
Municipal solid waste (MSW)	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.

Municipal Waste	As defined in Article 3 of the Waste Framework Directive, as amended; 'municipal waste' means: (a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; (b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households; Municipal waste does not include waste from production, agriculture, forestry, fishing, septic tanks and sewage network and treatment, including sewage sludge, end-of-life vehicles or construction and demolition waste.
Night-time	2300hrs to 0700hrs.
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other installation or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Nominal capacity	As defined in Directive 2010/75/EU on industrial emissions.
Non-hazardous waste	'Non-hazardous waste' means waste which is not covered by the definition of hazardous waste.
Notification Document	As specified under Article 4(1)(a), Annex 1A of Regulation (EC) No. 1013/2006.
O.D.	Ordinance datum Malin Head.
Odour-sensitive location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other premises or area of high amenity which for its proper enjoyment requires the absence of odour at nuisance levels.
Oil separator	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator system for light liquids, (e.g. oil and petrol) – Part 2: Selection of normal size, installation, operation and maintenance).
Potential emissions	Emissions which take place only under abnormal operating conditions. Examples include emissions from overpressure valves, bursting discs, and emergency generators.
PRTR	Pollutant Release and Transfer Register.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
RDF	Refuse derived fuel.
Recovery	Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations.
Recyclable Materials	Wastes types that can suitably undergo a recycling operation.
Recycling	Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and

	the reprocessing into materials that are to be used as fuels or for backfilling operations.
Relevant Hazardous Substances	Those substances or mixtures defined within Article 3 of Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation.
Residual Waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal, including mixed municipal waste.
Residues	Any liquid or solid waste which is generated by an incineration plant or by a bottom ash treatment plant.
SAC	Special Area of Conservation designated under the Habitats Directive, Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
Sample(s)	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
Sanitary effluent	Wastewater from installation toilet, washroom and canteen facilities.
SCADA system	Supervisory Control and Data Acquisition system.
Separate Collection	The collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment.
Slags and/or bottom ashes	Solid residues removed from the furnace once wastes have been incinerated.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
SNRHW	Stable, Non-Reactive Hazardous Wastes.
Soil	The top layer of the Earth's crust situated between the bedrock and the surface. The soil is composed of mineral particles, organic matter, water, air and living organisms.
Solid Recovered Fuel	Fuel that has been produced in accordance with a technical standard from pre-treated non-hazardous municipal, commercial or industrial waste.
SOP	Standard operating procedure.
Source segregated waste	Waste which is separated at source; meaning that the waste is sorted at the point of generation into a recyclable fraction(s) for separate collection (e.g., paper, metal, glass, plastic, bulk dry recyclables, biodegradables, etc.,) and a residual fraction. The expression 'separate at source' shall be construed accordingly.
SPA	Special Protection Area designated under the Birds Directive, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.
Specified emissions	Those emissions listed in *Schedule B: Emission Limits*, of this licence.
Specified Engineering Works	Engineering works listed in *Schedule D: Annual Environmental Report*, of this licence.

SRF	Solid recovered fuel.
Standard method	A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
Storage	Includes holding of waste.
Storm water	Rain water run-off from roof and non-process areas.
The Agency	Environmental Protection Agency.
TOC	Total organic carbon.
TVOC	Total volatile organic carbon, expressed as C (in air).
Trade effluent	Trade effluent has the meaning given in the Water Services Act, 2007.
Transfrontier Shipment Notification	Transfrontier Shipment Notification and movement/tracking form numbers are required for all exports of waste from, into or through the State under the Waste Management (Shipments of Waste) Regulations (SI419/2007).
Treated Sludge	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
Treatment/pre-treatment	In relation to waste, any manual, physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
Treatment	Recovery or disposal operations, including preparation prior to recovery or disposal.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Uisce Eireann	Uisce Éireann, Colvill House, 24/26 Talbot Street, Dublin 1.
Void Capacity	The volume of space available within a landfill cell for waste deposition.
Waste	Any substance or object which the holder discards or intends or is required to discard.
Waste Management	The collection, transport, recovery (including sorting), and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker.
Waste Producer	Anyone whose activities produce waste (original waste producer) or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste.
Waste Holder	The waste producer or the natural or legal person who is in possession of the waste.

Water Services Authority	Meath County Council.
Weekly	During all weeks of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
WI CID	Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration.
Working Face	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.
WWTP	Waste water treatment plant.

Decision and Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 83(5) of the Environmental Protection Agency Act 1992 as amended.

The Agency also considers that the activities will not adversely affect the integrity of any European Site, and has decided to impose conditions for the purposes of ensuring they do not do so. It has determined that the activities, if managed, operated and controlled in accordance with this licence, will not have any adverse effect on the integrity of any of those sites.

The Agency has accordingly decided to grant a licence to Knockharley Landfill Limited to carry on the activities listed in *Part I, Schedule of Activities Licensed*, subject to the conditions set out in *Part III, Conditions*; such licence to take effect in lieu of Licence Register Number: W0146-02.

No objection having been received to the proposed determination, this licence is granted in accordance with the terms of the proposed determination.

In reaching this decision the Agency has considered the documentation relating to: the existing licence, Register Number: W0146-02, the review application, Register Number: W0146-04 and the supporting documentation received from the applicant; the submission received; the Inspector's Report dated 15 March 2023 and has carried out an Environmental Impact Assessment (EIA) and an Appropriate Assessment of the likely significant effects of the activities on European Sites. The Agency has performed its functions in a manner consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015 as amended.

It is considered that the Inspector's Report contains a fair and reasonable examination, evaluation and analysis of the likely significant effects of the activities on the environment, and adequately and accurately identifies, describes and assesses those effects. The assessment as reported in this document is adopted as the assessment of the Agency. Having regard to this assessment, it is considered that the activities, if managed, operated and controlled in accordance with this licence will not result in the contravention of any relevant environmental quality standards or cause environmental pollution.

Having regard to the examination of environmental information in the Inspector's Report, and in particular to the content of the Environmental Impact Assessment Report (EIAR) and supplementary information provided by the licensee, and the submissions from the planning authority, and any other third parties in the course of the application, it is considered that the potential significant direct and indirect effects of the activities on the environment are as follows:

- emissions to air;
- discharges to water;
- noise emissions; and
- accidental leakages or spills.

Having assessed those potential effects, the Agency has concluded as follows:

- emissions to air will be mitigated through: collection and utilisation/flaring of landfill gas; imposing emission limit values to comply with ambient air quality standards; and implementing monitoring, maintenance and control measures;
- discharges to water will be mitigated through: operation of abatement equipment; imposing emission limit values to comply with environmental quality standards; and implementing monitoring, maintenance and control measures;
- noise emissions will be mitigated through: imposing daytime, evening-time and night-time noise limits; and implementing monitoring, maintenance and control measures; and
- accidental leakages or spills will be mitigated through inspection and maintenance of bunds and tanks; and accident and emergency requirements specified in this licence.

Having regard to the effects (and interactions) identified, described and assessed throughout the Inspector's Report, it is considered that the monitoring, mitigation and preventative measures proposed will enable the activities to operate without causing environmental pollution, subject to compliance with this licence. The Conditions of this licence and the mitigation measures will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activities, individually or in combination with other plans or projects are likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080) and River Nanny Estuary and Shore SPA (Site Code: 004158).

The activities are not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activities, 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 activities was required.

The Appropriate Assessment was required due to the following reason:

- Due to the nature and scale of the activities and the potential impacts such activities may have on the qualifying interests of the European Sites listed above.

The Agency has completed the Appropriate Assessment of potential impacts on these sites and has made certain, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activities, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080) and River Nanny Estuary and Shore SPA (Site Code: 004158), having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this licence and the Conditions attached hereto for the following reasons:

- Due to the distance to the River Nanny Estuary and Shore SPA (Site Code: 004158) and the mitigation measures listed below, it is considered that the potential impact on this European Site and its conservation objectives is considered negligible.
- The following European Sites: River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), River Boyne and River Blackwater SPA (Site Code: 004232) and Boyne Estuary SPA (Site Code: 004080), are not located downstream of the surface water bodies adjacent to the installation. Also, these European Sites are not located downgradient of the installation. Therefore, emissions from the activity will not have a significant effect on the qualifying interests of these European Sites.
- Condition 6 of the licence includes requirements for surface water run-off and management. It requires that surface water that has the potential to become contaminated through contact with waste is physically separated and managed separately.
- Condition 5 of the licence requires that emissions from licensed emission points are subject to compliance with the Emission Limit Values specified in the relevant Schedules.
- Condition 6 and *Schedule C: Control of Monitoring*, of this licence, specifies monitoring requirements and frequencies for emissions to air, water, noise and groundwater.
- Surface water emissions pass through an oil separator and are further abated in on-site constructed wetlands. Continuous on-line monitoring is in place and a slam shut valve will close to prevent contaminated surface water discharging from site.
- Landfill cells are lined in accordance with the Landfill Directive to protect groundwater.

- Condition 3 of the licence sets out the requirements for leachate management at the installation. Leachate is and will be collected from cells and stored in leachate lagoons/tanks, prior to removal off-site for disposal at an authorised wastewater treatment plant. In the event leachate will be pre-treated on-site, treatment and subsequent storage will be carried out in bunded units and tanks.
- Condition 3 of the licence sets out the requirements in relation to landfill gas management and specifies the requirements for the landfill gas infrastructure, including the collection pipework, utilisation plant and landfill gas flares. ELVs are provided for emissions to air in *Schedule B.1 Emissions to Air*, of this licence.
- Condition 3 requires all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Integrity of bunds and underground pipes are to be assessed every three years and maintenance carried out as required.
- Condition 9 of the licence requires that a documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment.
- Condition 9 also requires the licensee to have a documented Emergency Response Procedure in place that addresses any emergency situation on-site and provision for minimising the effects of any emergency on the environment.

The Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites: River Boyne and River Blackwater SAC (Site Code: 002299), Boyne Coast and Estuary SAC (Site Code: 001957), River Boyne and River Blackwater SPA (Site Code: 004232), Boyne Estuary SPA (Site Code: 004080) and River Nanny Estuary and Shore SPA (Site Code: 004158).

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, the Agency hereby grants this revised Industrial Emissions licence to:

Knockharley Landfill Limited, Panda Waste Management Solutions, Ballymount Road Upper, Dublin 24, CRO Number 529325

under Section 90(2) of the said Act to carry on the following activities:

11.4 (b)(iii)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): treatment of slags and ashes.
11.5	Landfills, within the meaning of Section 5 (amended by Regulation 11(1) of the Waste Management (Certification of Historic Unlicenced Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008)) of the Act of 1996, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, other than landfills of inert waste.
11.1	The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required

at Knockharley, Navan, (Includes Townlands of Tuiterath and Flemingstown), County Meath, subject to the following 12 Conditions, with the reasons therefor and associated Schedules attached thereto.

For the purpose of Article 48 of the Waste Management Licensing Regulations 2004 (SI 395) the landfill associated with this activity is classed as a non-hazardous waste landfill.

Part II Schedule of Activities Refused

In pursuance of the powers conferred on it by the Environmental Protection Agency Act 1992 as amended, the Agency refuses the following activities:

11.4 (a)(ii)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): physico-chemical treatment.
11.4 (b)(i)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): biological treatment.

Part III Conditions

Condition 1. Scope

1.1 Industrial Emissions Directive activities at this installation shall be restricted to those listed and described in *Part I Schedule of Activities Licensed* and shall be as set out in the licence application or as modified under Condition 1.5 of this licence and subject to the conditions of this licence.

1.2 The licensee shall carry on the licensed activities in accordance with the limitations set out in *Schedule A: Limitations* of this licence.

1.3 For the purposes of this licence, the installation authorised by this licence is the area of land outlined in red on EIAR Volume 4 Drawing No. LW4-821-01-P-0000-001 of the application. Any reference in this licence to "installation" shall mean the area thus outlined in red. The licensed activities shall be carried on only within the area outlined.

1.4 All activities which are directly associated with, and technically connected to the licensed activity, whether operated by the licensee or by another party, shall be subject to the conditions of this licence, and the licensee shall bear full responsibility for any breach of these conditions.

1.5 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in

(i) a material change or increase in:

- the nature or quantity of any emission;
- the abatement/treatment or recovery systems;
- the range of processes to be carried out;
- the fuels, raw materials, intermediates, products or wastes generated, or

(ii) any changes in:

- site management, infrastructure or control with adverse environmental significance,

shall be carried out or commenced without prior notice to, and without the approval of, the Agency.

1.6 Every plan, programme or proposal submitted to the Agency for its approval pursuant to any Condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the licensee in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the approval of the Agency. Every such plan, programme or proposal approved by the Agency shall be covered by the Conditions of this licence, unless stated in writing by the Agency.

1.7 The installation shall be controlled, operated and maintained, and emissions shall take place as set out in this licence. All programmes required to be carried out under the terms of this licence become part of this licence.

1.8 This licence is for the purpose of licensing under the EPA Act 1992 as amended only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.

1.9 This licence shall have effect in lieu of the licence granted on 23 March 2010 (Register No W0146-02).

1.10 Waste Acceptance Hours and Hours of Operation

1.10.1 With the exception of emergencies, or as may be approved by the Agency, waste shall only be accepted at or dispatched from the installation between the hours of 08:00 and 18:00 Monday to Saturday inclusive.

1.10.2 The installation shall be operated only during the hours of 07:30 and 18:30 Monday to Saturday inclusive.

1.10.3 The installation shall not operate or accept/dispatch waste on Sundays or Public Holidays without the approval of the Agency.

1.10.4 Construction activities shall only be carried out between the hours of 08:00 and 18:30 Monday to Friday and 08:00 and 14:00 on Saturdays. No construction activities shall be carried out on Sundays or Public Holidays. Deviation from these times shall only be permitted in exceptional circumstances where prior written approval has been received from the planning authority and the Agency.

Reason: ***To clarify the scope of this licence.***

Condition 2. Management of the Installation

2.1 Installation Management

2.1.1 The licensee shall employ a suitably qualified and experienced installation manager who shall be designated as the person in charge. The installation manager or a nominated, suitably qualified and experienced deputy shall be present on the installation at all times during its operation or as otherwise required by the Agency.

2.1.2 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence.

2.2 Environmental Management System (EMS)

2.2.1 The licensee shall maintain and implement an Environmental Management System (EMS), which shall incorporate energy efficiency management. The EMS shall be reviewed by senior management for its continuing suitability, adequacy and effectiveness and updated on an annual basis.

2.2.2 The EMS shall include, as a minimum, the following elements:

2.2.2.1 A statement of the commitment, leadership and accountability of management, including senior management for the implementation of an effective EMS.

2.2.2.2 An environmental policy, defined by Management, that includes a commitment to continuous improvement of the environmental performance of the installation.

2.2.2.3 Management and Reporting Structure, roles and responsibilities for environmental aspects, including for the planning and provision of financial and human resources to manage and implement the EMS.

2.2.2.4 An analysis of the organisation's regulatory and environmental obligations, including the potential risks to the environment from the activity.

2.2.2.5 Quality management outputs for the IBA treatment plant in order to improve the overall environmental performance of the plant, in accordance with BAT 10 of CID 2019/2010. Quality management output features shall ensure that the output of the IBA treatment is in line with expectations, including the use of EN standards where available. Output features should also allow the performance of the IBA treatment to be monitored and optimised.

2.2.2.6 An odour management plan, noise management plan and accident management plan which incorporates all applicable elements outlined in Section 2.4 of CID 2019/2010.

2.2.2.7 Diffuse dust emissions management features for the IBA treatment plant as listed in BAT 23 of CID 2019/2010.

2.2.2.8 The procedures required by this licence, including procedures for;

2.2.2.8.1 ensuring compliance with environmental legislation;

2.2.2.8.2 ensuring employee awareness of and involvement in complying with environmental legislation and good environmental practices;

2.2.2.8.3 checking performance and developing performance indicators by sectoral benchmarking on a regular basis, including for energy efficiency; and

2.2.2.8.4 ensuring the mitigation measures and monitoring commitments identified in the EIAR for operation activities at the installation are implemented, unless otherwise required by Conditions and Schedules of this licence.

2.2.2.9 Schedule of Environmental Objectives and Targets

The licensee shall maintain and implement a Schedule of Environmental Objectives and Targets and performance indicators in relation to significant environmental aspects, including safeguarding compliance with applicable legal requirements. The Schedule shall, as a minimum, provide for a review of all operations and processes, as referred to in the conditions of this licence, including an evaluation of practicable options for:

(i) energy and resource efficiency;

(ii) the reduction in water consumption;

(iii) the reduction in leachate and other waste water generation;

(iv) the use of cleaner technology (including emissions prevention/reduction), cleaner production;

(v) the beneficial recovery/recycling of waste in subsequent landfill engineering operations and at the installation;

(vi) the achievement of end-of-waste status for IBA;

(vii) odour and noise management;

(viii) dust emissions management;

(ix) the prevention, reduction and minimisation of waste including waste reduction targets;

(x) optimising the reuse, regeneration, recycling of, and/or energy recovery from waste;

(xi) proper disposal of waste;

(xii) accident management;

(xiii) a monitoring and measurement programme; and

(xiv) the impacts from eventual decommissioning of the installation.

The Schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The Schedule shall be reviewed annually.

2.2.2.10 Environmental Management Programme (EMP)

The licensee shall maintain and implement an EMP, including a time Schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.9 above. The EMP shall have regard to the guidance set out in the EPA Landfill Manuals – Landfill Operational Practices. The EMP shall include:

- designation of responsibility for targets;
- the means by which they may be achieved; and
- the time within which they may be achieved.

The EMP shall be reviewed annually and take into account operational experiences at the installation, the stage of development of the installation (active, closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue.

The licensee shall plan and implement the necessary procedures and actions to achieve Environmental Objectives and Targets and avoid environmental risks.

A report on the programme, including the success in meeting agreed targets and an evaluation of non-conformities and associated corrective actions and the potential for further non-conformities to occur shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.2.2.11 Documentation

(i) The licensee shall maintain and implement an environmental management documentation system.

(ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any Condition of this licence.

2.2.2.12 Corrective and Preventative Action

(i) The licensee shall maintain and implement procedures to ensure that corrective and preventative action is taken should the specified requirements of this licence not be fulfilled.

The procedures should address the evaluation of causes of non-conformities, implementation of corrective actions in response to non-conformities, review of the effectiveness of corrective and preventive actions, and determination of whether similar non-conformities exist or could potentially occur.

The responsibility and authority for persons initiating further investigation and corrective and preventative action in the event of a reported non-conformity with this licence shall be defined.

(ii) Where a breach of one or more of the Conditions of this licence occurs, the licensee shall without delay take measures to restore compliance with the Conditions of this licence in the shortest possible time and initiate any feasible preventative actions to prevent recurrence of the breach.

(iii) All corrective and preventative actions shall be documented.

2.2.2.13 Internal Audits

The licensee shall maintain and implement a programme for independent internal audits of the EMS. Such audits shall be carried out at least once every three years. The audit programme shall determine whether or not the EMS is being implemented and maintained properly, and in accordance with the requirements of this licence. Audit reports and records of the resultant corrective and preventative actions shall be maintained as part of the EMS in accordance with Condition 2.2.2.12 above.

2.2.2.14 Awareness, Training and Competence

The licensee shall maintain and implement procedures for identifying training needs, and for providing appropriate training and communication to all personnel whose work can have a significant effect upon the environment to ensure awareness and competence in their work area. Appropriate records of training and communications shall be maintained.

2.2.2.15 Public Awareness and Communications Programme

2.2.2.15.1 The licensee shall maintain and implement a Public Awareness and Communications Programme to ensure that members of the public are informed, and can obtain information at the installation, at all reasonable times, concerning the environmental performance of the installation.

2.2.2.15.2 The Programme shall include a specific public awareness campaign to inform local residents about the actions being taken to ensure compliance with the conditions of the licence including the prevention of nuisance of odour, noise, dust and other factors at the installation, and a community engagement programme, which highlights the information that is maintained at the installation as required in Condition 11.11, for public inspection.

2.2.2.15.3 The programme shall be agreed by the Agency and a report on the programme shall be prepared and submitted to the Agency annually.

2.2.2.16 Maintenance Programme

The licensee shall maintain and implement a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see Condition 2.1 above). The maintenance programme shall use appropriate techniques and measures to ensure the optimisation of energy efficiency in plant and equipment.

2.2.2.17 Efficient Process Control

The licensee shall maintain and implement a programme to ensure there is effective operational planning and adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

2.2.2.18 The licensee shall establish, maintain and implement a residues management plan for the IBA treatment plant, which shall include measures aiming to:

(i) minimise the generation of residues;

(ii) optimise the reuse, regeneration, recycling of, and/or energy recovery from the residues; and

(iii) ensure the proper disposal of residues.

2.2.2.19 The licensee shall establish, maintain and implement a Construction and Environmental Management Plan prior to commencement of development activities. The plan shall cover all aspects of construction and incorporate measures to avoid, minimise and mitigate the potential effects on the environment during construction phases. The plan shall at a minimum include:

(i) details of the phasing of the development;

(ii) noise control and management measures;

(iii) surface water management plan

(iv) dust and air emissions management plan;

(v) waste management plan; and

(vi) a programme to implement mitigation measures to protect the environment during construction phases as outlined in the main

Environmental Impact Assessment Report of the application, unless otherwise required by Conditions of this licence.

Reason:	***To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.***

Condition 3. Infrastructure and Operation

3.1 The licensee shall ensure, at all times prior to commencement of the activities, that all infrastructure and all equipment required under this licence has been and is:

(i) installed;
(ii) commissioned;
(iii) present on-site; and
(iv) maintained in full working order.

3.2 Where any Condition/Schedule of this licence specifies any later deadline for installation of any piece of infrastructure or equipment, Condition 3.1 of this licence shall apply as and from the deadline specified.

3.3 The licensee shall establish and maintain, for each component of the installation, all infrastructure referred to in this licence in advance of the commencement of the licensed activities in that component, or as required by the conditions of this licence. Infrastructure specified in the application that relates to the environmental performance of the installation and is not specified in this licence, shall be installed in accordance with the Schedule submitted in the application.

3.4 The licensee shall have regard to the following when choosing and/or designing any new plant/infrastructure:

(i) energy efficiency; and

(ii) the environmental impact of its construction/installation, maintenance, operation and eventual decommissioning.

3.5 Installation Notice Board

(i) The licensee shall maintain an Installation Notice Board on the installation so that it is legible to persons outside the main entrance to the installation. The minimum dimensions of the board shall be 1200mm by 750mm. The notice board shall be maintained thereafter.

(ii) The board shall clearly show:

(i) the name and telephone number of the installation;
(ii) the normal hours of operation;
(iii) the normal hours of waste acceptance;
(iv) the name of the licence holder;
(v) an emergency out of hours contact telephone number;
(vi) this licence reference number; and
(vii) where environmental information relating to the installation can be obtained.

(iii) A plan of the installation clearly identifying the location of each storage and treatment area shall be displayed as close as is possible to the entrance to the installation. The plan shall be displayed on a durable material such that is legible at all times. The plan shall be replaced as material changes to the installation are made.

3.6 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the

Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

3.7 In the case of composite sampling of aqueous emissions from the operation of the installation, a separate composite sample or homogeneous sub-sample (of sufficient volume as advised) shall be refrigerated immediately after collection and retained as required for EPA use.

3.8 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.

3.9 Tank, Container and Drum Storage Areas

3.9.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2013).

3.9.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

(i) 110% of the capacity of the largest tank or drum within the bunded area; or

(ii) 25% of the total volume of substance that could be stored within the bunded area.

3.9.3 All drainage from bunded areas shall be treated as contaminated unless it can be demonstrated to be otherwise.

3.9.4 All drainage from bunded areas shall be diverted for collection and safe disposal, unless it can be deemed uncontaminated and does not exceed the trigger levels set for surface water emissions under Condition 6.13 of this licence.

3.9.5 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.9.6 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.9.7 All bunds shall be uniquely identified and labelled at the bund.

3.9.8 The licensee shall apply a leak detection system to all storage tanks, container and drum storage areas that contain liquid material other than water.

3.10 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the installation. Once used the absorbent material shall be disposed of at an appropriate facility.

3.11 Water metering and records

3.11.1 The licensee shall maintain a water meter on all water supplies serving the installation.

3.11.2 Records of water usage shall be maintained on site and a summary records report shall be submitted annually as part of the AER.

3.11.3 The licensee shall, in accordance with S.I. No. 261 of 2018 European Union (Water Policy) (Abstraction Registration) Regulation 2018, register with the Agency all water abstractions exceeding $25m^3$/day, within three months of commencement of the activity for existing abstractions, and within one month of commencement of abstraction for new abstractions.

3.12 The licensee shall, install and maintain silt traps, silt fencing and oil separators at the installation as follows:

(i) Silt traps at wheel washing facilities;

(ii) Silt traps, silt fencing and stilling ponds to ensure that all surface water from the installation passes through silt protection controls during construction and decommissioning stages, as outlined in Section 12.7.1 of the main Environmental Impact Assessment Report;

(iii) Oil separators on the inlet to the northern and southern surface water ponds. Both separators shall be Class I full retention separators.

The oil separators shall be in accordance with I.S. EN-858-2: 2003 (separator systems for light liquids).

3.13 Firewater Retention

3.13.1 The licensee shall review and update the risk assessment to determine the retention requirements for fire water run-off from the installation. The risk assessment, and any subsequent reports or programmes, shall be completed in accordance with any guidelines issued by the Agency with regard to firewater retention. The Fire Authority shall be consulted by the licensee during this assessment.

3.13.2 The licensee shall submit the Firewater Risk Assessment Report based on the assessment in Condition 3.13.1 to the Agency for approval within nine months of the date of grant of this licence.

3.13.3 The licensee shall implement the Firewater Risk Assessment Report as approved by the Agency under Condition 3.13.2, within the timeframes specified by the Agency.

3.14 All pump sumps, storage tanks, lagoons or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separators, shall be fitted with high liquid level alarms (or oil detectors as appropriate) within 3 months from the date of grant of this licence for existing infrastructure, or prior to operation for new infrastructure to be installed. In particular this shall include the oil interceptors, associated with emission point SW9 and SW10, all leachate storage lagoons, all leachate and chemical treatment tanks associated with the leachate management plant and storage tanks, and the temporary settlement pond of Cell 32.

3.15 The provision of a catchment system to collect any leaks from flanges and valves of all over-ground pipes used to transport material other than water shall be examined. This shall be incorporated into a Schedule of Environmental Objectives and Targets set out in Condition 2 of this licence for the reduction in diffuse emissions.

3.16 All wellheads at the installation shall be adequately protected to prevent contamination or physical damage.

3.17 The licensee shall, maintain in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.

3.18 The licensee shall operate and maintain a weather monitoring station on the site which records the parameters set out in *Schedule C.11: Meteorological Monitoring* of this licence.

3.19 Waste Water Treatment Plant

3.19.1 Sanitary effluent arising on-site shall be discharged to the appropriate leachate lagoon.

3.19.2 If required by the Agency, the licensee shall provide and maintain a waste water treatment plant at the installation for the treatment of sanitary effluent arising on-site. Any waste water treatment system and percolation area shall satisfy the criteria set out in the EPA *Code of Practice for Domestic Waste Water Treatment Systems (Population Equivalent ≤ 10) 2021* or the EPA *Wastewater Treatment Manuals – Treatment Systems for Small Communities, Business, Leisure Centres and Hotels 1999,* as may be appropriate.

3.20 Specified Engineering Works

3.20.1 The licensee shall submit proposals for all Specified Engineering Works, as specified in *Schedule E: Specified Engineering Works,* of this licence, to the Agency for its agreement at least two months in advance of the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.

3.20.2 The licensee shall when designing/redesigning new or existing installation, or a part thereof, consider its environmental impacts throughout its life, which includes construction, maintenance, operation and decommissioning.

3.20.3 The licensee shall consider low-noise equipment, including compressors, pumps and fans, when designing/redesigning new or existing installation.

3.20.4 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.20.5 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall, as appropriate, include the following information:

(i) a description of the works;

(ii) as-built Drawings of the works;

(iii) records and results of all tests carried out (including failures);

(iv) drawings and sections showing the location of all samples and tests carried out;

(v) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;

(vi) name(s) of contractor(s)/individual(s) responsible for supervision of works and for quality assurance validation of works;

(vii) records of any problems and the remedial works carried out to resolve those problems; and

(viii) any other information requested in writing by the Agency.

3.21 Installation Security

3.21.1 Security and stock-proof fencing and gates shall be maintained at the installation. Subject to the implementation of the Closure, Restoration and Aftercare Management Plan the requirement for such installation security may be removed.

3.21.2 The licensee shall maintain a CCTV monitoring, system which records all waste vehicle movement into and out of the installation. The CCTV system shall be operated at all times with digital date stamping. Copies of recordings shall be kept on-site and made available to the Agency on request.

3.21.3 There shall be no unauthorised public access to the installation.

3.21.4 Gates shall be locked shut when the installation is unsupervised.

3.21.5 The licensee shall remedy any defect in the gates and/or fencing as follows:

(i) A temporary repair shall be made by the end of the working day; and

(ii) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

3.22 Dust and Odour Control

The licensee shall maintain adequate measures for the control of dust and odour emissions, including diffuse dust emissions, from the installation. Installation of a dust and odour management system shall at a minimum include the following:

(i) Identification of the most relevant diffuse dust emission sources from IBA storage and treatment (e.g. using EN 15445) and definition and implementation of appropriate actions and techniques to prevent or reduce diffuse emissions over a given time frame, in accordance with BAT 23 of CID 2019/2010;

(ii) Implementation and use of an appropriate combination of techniques to reduce diffuse dust emissions to air from the storage and treatment of IBA, as listed in BAT 24 of of CID 2019/2010;

(iii) All waste and material stockpiles shall be adequately contained to minimise dust generation.

3.23 Installation Roads and Site Surfaces

3.23.1 Effective site roads, including internal and haul roads, shall be provided and maintained to ensure the safe and nuisance free movement of vehicles within the installation.

3.23.2 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

3.23.3 Access to and from the installation shall only be from the N2 via the existing access road.

3.23.4 The licensee shall provide and maintain an impermeable concrete surface in all areas of the installation used for the movement (excluding haul roads), holding, storage or processing of waste, excluding within the landfill footprint with the exception of the IBA cells where paved roads will be constructed using reinforced concrete over IBA formations. The concrete surface shall be constructed to *Standard BS EN 1992-1-1:2004+A1:2004,* as amended or an alternative as approved by the Agency. The licensee shall remedy any defect in concrete surfaces within five working days.

3.24 Installation Office

3.24.1 The licensee shall provide and maintain an office at the installation. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.

3.24.2 The licensee shall provide and maintain a method for electronic transfer of information at the installation.

3.25 All buildings constructed on the installation shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

3.26 The licensee shall provide and use adequate lighting during the operation of the installation in hours of darkness.

3.27 Waste Inspection and Quarantine Areas

3.27.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the installation.

3.27.2 A separate Waste Inspection Area and a Waste Quaratine Area shall be provided and maintained at the installation for SNRHW materials, if deemed appropriate from the risk assessment required in accordance with Condition 3.41.7.

3.27.3 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.

3.27.4 Drainage from these areas shall be directed to the appropriate leachate lagoon for collection and safe disposal off-site.

3.28 Waste Treatment Infrastructure

3.28.1 Waste treatment infrastructure shall at a minimum comprise the following:

(i) indoor waste acceptance, inspection, quarantine and storage areas for baled recyclables and baled MSW;

(ii) IBA storage and treatment infrastructure, as per Section 2.5 of the main Environmental Impact Assessment Report unless otherwise required by Conditions of this licence, including separate storage areas within the IBA cells for waste treatment outputs and end-of-waste fractions as appropriate;

(iii) leachate extraction, collection, storage and treatment (where implemented) infrastructure;

(iv) landfill gas extraction, collection, desulphurisation infrastructure, utilisation and combustion/flaring infrastructure; and

(v) waste water management infrastructure.

3.28.2 Items of plant deemed critical to the efficient and adequate processing of waste at the installation (including among other things waste loading vehicles and ejector trailers) shall be provided on the following basis:

(i) 100% duty capacity;

(ii) 20% standby capacity available on a routine basis; and

(iii) Provision of contingency arrangements and/or back up and spares in the case of breakdown of critical equipment.

3.28.3 Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

3.28.4 The infrastructure capacity, for the storage of baled MSW at the installation, shall not exceed 75 tonnes per day.

3.28.5 The quantity of waste to be accepted at the installation on a daily basis shall not exceed the duty capacity of the equipment at the installation. Any exceedance of this intake shall be treated as an incident.

3.29 Landfill Lining

3.29.1 The landfill liner for landfill cells shall comply with the requirements of the Landfill Directive and comprise of the following unless otherwise approved by the Agency:

(i) a composite liner consisting of ≥1m layer of compacted soil with a hydraulic conductivity of less than or equal to $1x10^{-9}$m/s, (or equivalent to be agreed by the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;

(ii) a geotextile protection layer placed over the HDPE layer;

(iii) a ≥500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of 1×10^{-3} m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;

(iv) the side walls shall be designed and constructed to achieve an equivalent protection.

3.29.2 The proposed design of the landfill liner for landfill cells shall be submitted for approval by the Agency, prior to installation, in accordance with *Schedule E: Specified Engineering Works* of this licence. The proposed design of the landfill liner for cells containing IBA and SNRHW shall take into account the outcome of the risk assessments required as per Condition 3.40.2 and Condition 3.41.7.

3.29.3 The liner system for the leachate storage lagoons and the northern surface water holding pond, attenuation pond and constructed wetland, shall comprise the following: a composite liner consisting of at minimum a basal soil/clay layer of at least 1m in thickness with a permeability of less than $1x10^{-9}$m/s overlain by a 2mm thick high density polyethylene (HDPE) layer unless otherwise agreed in advance with the Agency.

3.29.4 The proposed design of the liner system for the leachate storage lagoons and the northern surface water holding pond, attenuation pond and constructed wetland shall be submitted for approval by the Agency, prior to installation, in accordance with *Schedule E: Specified Engineering Works*, of this licence. The proposed design of the liner for leachate storage lagoons shall take into account the outcome of the risk assessments required as per Condition 3.40.2 and Condition 3.41.7.

3.29.5 Liner detailed design and its construction shall be in accordance with the EPA Landfill Manuals - Landfill Site Design, unless otherwise approved by the Agency.

3.29.6 Formation levels of the landfill cells, within Phase 1 – 7, shall be as shown on Drawing No. 2000-144-01-06 'Landfill Section' of the EIS associated with An Bord Pleanála planning permission reference PL17.125891. Formation levels for IBA storage cells shall be submitted to the Agency for approval in accordance with *Schedule E: Specified Engineering Works* of this licence.

3.29.7 Constructed landfill lining for landfill cells, ponds and constructed wetland shall be independently inspected prior to use. Inspection requirements and inspection results are subject to the approval of the Agency and shall be submitted to the Agency for approval prior to operation.

3.30 Landfill Cell Filling

3.30.1 Wastes shall not be deposited in any cell or part of the landfill without the prior approval of the Agency.

3.30.2 Unless otherwise approved by the Agency, the landfill cells shall be filled with non-stabilised waste, stabilised and inert waste, and IBA waste as per Drawing No. LW14-821-01-P-0050-010 of the EIAR Volume 4. The filling sequence shall be as per the directional arrows of the Drawing and as described in Section 2.4.3 of the main EIAR. SNRHW shall be landfilled within dedicated sub cell areas within Cells 27 and or Cell 28, unless the risk assessment as per Condition 3.41.7 determines otherwise.

3.31 Buffer Zone

A Buffer Zone, of a minimum 100m between the landfill footprint (area being filled with waste) and the installation boundary, in which no waste shall be landfilled, shall be provided and maintained within the installation.

3.32 Weighbridge and Wheel Cleaning

3.32.1 The licensee shall maintain two weighbridges and wheel cleaners at the installation.

3.32.2 All waste arriving at or leaving the installation shall be weighed at the weighbridge onsite.

3.32.3 The licensee shall maintain the existing dry wheel shake and wheel wash at the installation. An additional wheel wash shall be provided at the exit of the IBA plant.

3.32.4 The wheel cleaner units shall be used by all vehicles leaving the installation, as required, to ensure that no waste water, waste or surface water is carried off-site. All water from the wheel cleaning areas shall be directed to the appropriate leachate lagoon for collection and safe disposal off-site.

3.32.5 The wheel cleaners shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel cleaner units and disposed of appropriately.

3.33 Landfill Gas Management

3.33.1 Landfill gas management at the installation shall be carried out as described in Chapter 7 of the main Environmental Impact Assessment Report, and Application Attachment L.4, submitted with the application, unless the licence Conditions or Agency require otherwise.

3.33.2 The licensee shall maintain all passive vents, gas wells, pipework, valves, pumps, biogas desulphurization unit, engines, flares and other infrastructure that form part of the landfill gas management system in a safe and fully operational manner.

3.33.3 Landfill gas management and associated infrastructure shall meet the recommendations and requirements as outlined in the EPA Landfill Manuals, unless otherwise approved by the Agency.

3.33.4 The licensee shall install and maintain landfill gas monitoring infrastructure at the following locations:

(i) Perimeter monitoring boreholes at 50m intervals around the periphery of the landfill footprint, which shall be monitored prior to waste acceptance in the adjacent cell to determine baseline levels;

(ii) Site office and all other site buildings; and

(iii) A minimum of two monitoring boreholes per cell within the landfill. The installation of monitoring boreholes within cells containing SNRHW shall be dependent on the risk assessment carried out, as per Condition 3.41.7.

The construction of the landfill gas monitoring boreholes shall be phased so as to match the phased development of cells.

3.33.5 The licensee shall install and maintain a permanent continuous gas monitoring system with an alarm in the site office and in any other enclosed structures at the installation.

3.33.6 Landfill gas utilisation engines and associated infrastructure, as per emission point references in *Schedule B.1.1 Emission limit Values for Landfill Gas Utilisation Engines,* of this licence, shall be operated and maintained at the installation as required, unless otherwise approved by the Agency.

(i) The gas utilisation engines shall comply with the emission limits in *Schedule B.1.1 Emission limit Values for Landfill Gas Utilisation Engines*, of this licence;

(ii) The flaring or utilisation of landfill gas for any purpose, other than electricity generation, shall require the approval of the Agency.

3.33.7 Landfill gas flares and associated infrastructure, as per emission point references in *Schedule B.1.2 Emission limit Values for Landfill Gas Flares*, of this licence, shall be operated and maintained at the installation as required, unless otherwise approved by the Agency.

(i) The flares shall be of an enclosed design type and shall comply with the emission limits in *Schedule B.1.2: Emission limit Values for Landfill Gas Flares* of this licence; and

(ii) Flare unit efficiency shall be tested once every three years. New/replacement flares shall also be tested upon installation and upon commencement of landfill gas flaring.

3.33.8 As per Application Attachment L4, and unless otherwise approved by the Agency, the licensee shall install and operate a passive landfill gas management system, in cells containing stabilised waste, inert waste, SNRHW (pending the risk assessment carried out, as per Condition 3.41.7) and IBA waste (storage and treatment areas of IBA cells), incorporating the following requirements:

(i) The design of the gas management system shall be in accordance with the EPA Landfill Manuals – Landfill Site Design and shall be approved by the Agency prior to installation in accordance with *Schedule E: Specified Engineering Works,* of this licence;

(ii) As a minimum, a gas extraction well shall be installed in cell 23, 24, 27, 28, 29 and 32 to facilitate active gas extraction where required;

(iii) The gas ring main shall be extended around the landfill footprint to facilitate active gas extraction where required;

(iv) Gas vent pipes shall not be perforated above ground level and the spacing between the gas vent pipes shall be sufficient to achieve adequate gas venting; and

(v) Gas vent pipes shall incorporate a carbon or other filter type as appropriate and a cowl, unless active gas extraction is required.

Passive gas venting from cells containing SNRHW shall only be carried out as required following the risk assessment as per Condition 3.41.7.

3.33.9 Establish appropriate trigger levels for landfill gas emissions passively vented from cells, as per Condition 3.33.8, above which active gas extraction shall be required. Trigger levels, addressing gas composition and flow rates, should be submitted to the Agency for approval within 1 month of the date of grant of this licence. Gas requiring active extraction from these cells, shall be utilised/flared in the landfill gas compound, unless otherwise approved by the Agency.

3.34 Surface water management

3.34.1 Surface water management infrastructure shall be provided and maintained at the installation during construction works, operation, closure, restoration and aftercare at the installation. As a minimum, the infrastructure shall be capable of the following:

(i) collection/diversion of any contaminated run-off arising within the installation;

(ii) the prevention of contaminated water and leachate discharges into surface water drains and courses; and

(iii) the collection/diversion of run off arising from capped and restored areas, incorporating adequately sized swales.

3.34.2 The northern surface water holding pond, attenuation pond, constructed wetland, associated surface water management infrastructure, culvert and river diversion shall be constructed and operational prior to the commencement of other construction works and prior to the acceptance of IBA waste for storage and recovery on-site.

3.34.3 The licensee shall, one month prior to the commencement of works associated with the installation of the culvert at the northern surface water management system and the onsite realignment of the Knockharley Stream (Flemingstown River, IE_EA_08F050930), submit to the Agency a surface water works project plan which includes:

(i) A copy of the relevant approvals from the Office of Public Works;

(ii) Recommendations following consultation with Inland Fisheries Ireland; and

(iii) An implementation plan to address (i) and (ii) above including timelines for works. No instream works are to be carried out between 01 October and 30 June in any given year.

3.34.4 The surface water from all roads, hardstanding areas and all areas of the installation where surface water has the potential to become contaminated shall be directed to the northern holding pond and southern attenuation pond.

3.34.5 The design and capacity of the northern and southern surface water ponds shall ensure that they are capable of fulfilling the requirements of this licence and dealing with all surface water run-off from potentially contaminated areas of the installation. The surface water ponds shall be constructed and maintained at the locations as shown in EIAR Volume 4 Drawing No. No. LW14-821-01-P-0050-004 and Drawing No. LW14-821-01-P-0050-005, unless otherwise approved by the Agency.

3.34.6 The inlet to the northern surface water holding pond and southern attenuation pond shall be fitted with a Class I Full Oil Interceptor.

3.34.7 The discharge from the northern holding pond, attenuation pond and constructed wetland shall be controlled by an actuated penstock that will prevent surface water discharging into the next pond, constructed wetland or receiving water in the event that monitoring should indicate contamination of the surface water.

3.34.8 The discharge from the southern surface water pond shall be controlled by an actuated penstock that will prevent surface water discharging into the constructed wetland in the event that monitoring should indicate contamination of the surface water.

3.34.9 The licensee shall install continuous monitoring equipment on each pond inlet and on the discharge point of the northern surface water management infrastructure which shall be capable of monitoring parameters on a continuous frequency as required by *Schedule C.2.2 Monitoring of Emissions to Water,* of this licence.

3.34.10 The licensee shall install a composite sampler at emission point reference SW10 prior to discharge occurring. A composite sampler shall also be installed at emission point reference SW9, unless otherwise approved by the Agency.

3.34.11 Constructed Wetlands

The licensee shall establish, maintain and implement a programme for inspection and maintenance of the constructed wetlands to include at least the following:

(i) regular flow patterns;

(ii) water depth and turbidity; and

(iii) sediment depth, vegetation composition and invertebrate monitoring.

3.35 Pipework

3.35.1 The licensee shall label all pipework so as to differentiate between fuels, process flows and waste water. The labelling shall include the direction of flow.

3.35.2 The licensee shall provide shut-off valves on any surface/wastewater discharge lines.

3.36 Leachate Management

3.36.1 Effective leachate management infrastructure shall be provided, operated and maintained at the installation, as per Section 2.7 of the main Environmental Impact Assessment Report unless otherwise required by Conditions of this licence.

3.36.2 Unless otherwise approved by the Agency, leachate from the following waste types shall be extracted, collected, stored, pretreated (if pre-treatment approved to be implemented on site) and removed from site separately to facilitate leachate treatment and prevent dilution or cross contamination of streams:

(i) SNRHW;

(ii) IBA;

(iii) Stabilised and inert waste; and

(iv) Non-stabilised waste.

3.36.3 The licensee shall provide and maintain separate leachate storage lagoons for the waste types as per Condition 3.36.2 at the installation to facilitate the storage of leachate abstracted and collected from the waste, unless otherwise agreed by the Agency. The location of the leachate storage lagoons shall be in accordance with Drawing No. LW14-821-01-P-0000-003 of the EIAR Volume 4, unless otherwise approved by the Agency.

3.36.4 The licensee shall submit details for approval by the Agency of the proposals for the treatment of leachate on-site prior to carrying out such an activity. The details shall include information on the proposed leachate treatment system including its operational criteria, the proposed standards for treated leachate and a timescale for the construction and commissioning of the system. Leachate treatment proposals shall incorporate the requirements of BAT 34 of CID 2019/2010.

3.36.5 Leachate treatment plant, if implemented, shall be in accordance with Drawing No. LW14-821-01-P-0600-001 /002/ 003 of the EIAR Volume 4, unless otherwise approved by the Agency.

3.36.6 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.

3.36.7 All leachate management structures on-site shall be inspected and certified fit for purpose on an annual basis by an independent and appropriately qualified chartered engineer. Any remedial works recommended in this report must be implemented immediately.

3.36.8 Treatment of leachate from SNRHW in the leachate treatment plant (if implemented) shall only be carried out after the completion of the risk assessment, as per Condition 3.41.7.

3.36.9 The management of IBA leachate and waste washings shall take into account the risk assessment required in accordance with Condition 3.40.2.

3.36.10 Leachate from SNRHW, IBA, stabilised and inert waste and non-stabilised waste must be appropriately characterised and analysed and assigned a LoW code in accordance with the EPA Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous. These requirements should be repeated in the event the nature of the leachate changes over time or as required by the Agency.

3.36.11 Leachate from IBA cells and treatment area treated in the leachate treatment plant shall be subject to the limit set out *Schedule B.5 Treated Leachate Limits*, of this licence and the control and monitoring requirements as set out in *Schedule C.7.1 Control of Treated Leachate,* of this licence and *Schedule C.7.2 Monitoring of Treated Leachate*, of this licence.

3.36.12 Unless otherwise agreed by the Agency leachate stored in the leachate storage lagoons and leachate treatment plant tanks shall be disposed of by tankering off-site in fully enclosed road tankers and discharging to an agreed authorised Waste Water Treatment Plant as per Condition 5.8. The frequency of leachate removal from the leachate lagoons shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoons at all times.

3.36.13 Discharges of treated or untreated leachate to ground or to surface waters are not permitted by this licence.

3.36.14 Storage and treatment of leachate from waste cells, as per licence Conditions, is permitted after waste acceptance to the installation has ceased, unless otherwise approved by the Agency.

3.36.15 The licensee shall maintain and implement operational and control procedures for leachate management, which shall at a minimum include the following:

(i) monitoring infrastructure details and procedures for monitoring the level of leachate in the pump sumps, the landfill cells, the leachate lagoons/tanks and the leachate treatment plant units/tanks if implemented;

(ii) leachate extraction from landfill cells, collection and storage of leachate in the leachate lagoons/tanks, and removal of leachate from storage and subsequent transport/discharge to the relevant waste water treatment plant; and

(iii) procedures for the operation of the leachate treatment if implemented.

3.36.16 Leachate Monitoring Infrastructure

3.36.16.1 The licensee shall install and maintain leachate monitoring points in each active cell and in each leachate storage lagoon/tank to allow for the sampling and analyses of leachate.

3.36.16.2 The licensee shall install monitoring points for each treated stream in the leachate treatment plant (if implemented) and a composite sampler on the discharge point for each stream if required, unless otherwise approved by the Agency.

3.36.17 Leachate levels in the waste cells shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.

3.36.18 The level of leachate in the waste cell pump sumps shall be continuously monitored.

3.36.19 Re-circulation of leachate or other contaminated water shall not be undertaken without the prior approval of the Agency and shall only be undertaken within cells, which have been lined and capped to the satisfaction of the Agency.

3.37 Groundwater Management

3.37.1 Effective groundwater management infrastructure shall be provided and maintained at the installation during construction, operation, restoration and aftercare of the installation. As a minimum, the infrastructure shall be capable of the following:

(i) the protection of the groundwater resources from pollution by the waste activities; and

(ii) the protection of other infrastructure, such as the liner, from any adverse effects caused by the groundwater.

3.37.2 The licensee shall install and maintain groundwater monitoring boreholes as listed in *Schedule C.5 Groundwater Monitoring,* of this licence.

3.37.3 The licensee shall install and maintain additional groundwater monitoring wells if required by the Agency.

3.37.4 Any measures utilised to manage groundwater levels at the installation, including in relation to leachate levels within cells, shall require prior approval by the Agency.

3.38 Telemetry

A telemetry system shall be maintained at the installation. All installation operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.

3.39 Waste Acceptance

3.39.1 Waste authorised for acceptance at the installation is subject to the maximum quantities and other constraints listed in *Schedule A.2 Waste Acceptance*, of this licence.

3.39.2 Waste shall only be accepted at the installation from local authority waste collection or transport vehicles or holders of valid waste collection permits, issued under the Waste Management Act 1996 as amended, unless exempted or excluded. Copies of these waste collection permits shall be maintained at the installation.

3.39.3 Waste Acceptance and Characterisation Procedures

3.39.3.1 Waste shall be accepted at the installation only from known waste producers or new waste producers subject to initial waste profiling and waste characterisation offsite. The written records of this off-site waste profiling and characterisation shall be retained by the licensee for all active waste producers and for a two year period following termination of licensee/ waste producer agreements.

3.39.3.2 Waste arriving at the installation shall be inspected and have its documentation checked at the point of entry to the installation and subject to this verification, weighed, documented and directed to an appropriate area within the installation. Each load of waste arriving at the installation shall be inspected prior to and during unloading. Only after such inspections shall the waste be processed for disposal or recovery. For SNRHW, this shall be dependent on the risk assessment as per Condition 3.41.7.

3.39.3.3 Any waste deemed unsuitable for acceptance/processing at the installation and/or in contravention of this licence shall be immediately separated and removed from the installation at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

3.39.3.4 Inert waste accepted at the installation shall be subject to pre-treatment where technically feasible and appropriate.

3.39.3.5 Each bale of waste accepted at the installation shall, as part of the waste tracking system, be labelled with, at least, a unique identifier, its date of arrival and List of Waste code.

3.39.3.6 A record of all inspections of incoming waste loads shall be maintained.

3.39.3.7 Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its approval updated written procedures and criteria for the acceptance and handling of all wastes. The procedures shall have regard to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC as amended, on the landfill of waste. The procedures shall include the following:

(i) waste characterisation and methods of characterisation, compliance testing, pre-acceptance/acceptance;

(ii) details of the treatment of all waste to be carried out in advance of acceptance at the installation;

(iii) the checking of waste documentation on receipt of waste in the waste reception area;

(iv) details of on-site verification methods/inspections, including monitoring parameters, frequencies and methods;

(v) for non pre-cleared customers the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;

(vi) the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the installation;

(vii) details of handling operations of all wastes arriving at the installation;

(viii) the visual inspection of waste when deposited at the working face;

(ix) requirements for rejection of unacceptable incoming waste;

(x) estimation of gas yield potential for the waste,

(xi) analysis, if required by the Agency, and classification and coding of waste in accordance with the EPA Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous; and

(xii) requirements to ensure adequate storage capacity exists in advance of waste acceptance.

3.39.4 All wastes shall be checked at the working face. For SNRHW, this shall be dependent on the risk assessment as per Condition 3.41.7.

3.39.5 Waste Treatment

3.39.5.1 Only waste that has been subject to treatment shall be accepted for disposal at the landfill installation.

3.39.5.2 Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009 as amended.

3.39.5.3 With the approval of the Agency, this Condition shall not apply to:

(i) inert wastes for which treatment is not technically feasible;

(ii) SNRHW for which treatment is not feasible technically or due to environmental, health and safety risks;

(iii) other waste for which such treatment does not contribute to the objectives of the Landfill Directive, as set out in Article 1 of the Directive, by reducing the quantity of the waste or the hazards to human health or the environment.

3.39.6 With the exception of SNRHW, no hazardous wastes or liquid wastes shall be disposed of at the installation.

3.39.7 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the installation. Shredded tyres shall not be disposed of at the installation.

3.39.8 No waste which in the Conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in Directive 2008/98/EC shall be accepted at the landfill.

3.39.9 Infectious healthcare waste, assessed as likely to cause disease in humans or animals, arising from medical or veterinary establishments shall not be disposed of at the installation.

3.39.10 Gypsum and other high sulphate bearing wastes shall not be placed in any landfill cell accepting biodegradable waste. The licensee shall propose an appropriate sulphate level, above which the waste shall be regarded as high sulphate bearing, to the Agency for approval.

3.39.11 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 3.39.3 is prohibited.

3.39.12 Unless otherwise as may be specified by the Agency, the following limit shall apply to the acceptance of biodegradable municipal waste :

(i) A maximum of 15% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise of biodegradable municipal waste (BMW), measured on a calendar year basis.

3.39.13 Two or more licensed landfills may seek the approval of the Agency that collectively they will arrange to comply with Condition 3.39.12. Such approval may be sought by review of the landfill licence for any installation seeking an increase in the limits set out in Condition 3.39.12, and by technical amendment of any licence for any installation seeking a decrease. Such approval will be contingent on the net combined acceptance of biodegradable municipal waste at the participating installations remaining unchanged.

3.39.14 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with Condition 3.39.17 shall not be considered BMW.

3.39.15 Bio-stabilised residual wastes meeting the requirements of:

(i) Condition 3.39.17, or

(ii) an alternative protocol as may be approved by the Agency based on biological treatment process parameters (e.g. validated residence time and temperature parameters at the treatment facility),

received at the landfill installation may be included in the determination of MSW quantities accepted at the installation for the purposes of Condition 3.39.12.

3.39.16 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.

3.39.17 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days is <7mg O_2/g DM thereafter.

3.39.18 Bio-stabilised residual wastes shall be monitored in accordance with *Schedule C.10 Waste Monitoring,* of this licence.

3.39.19 Waste that was accepted to the body of the landfill as stabilised waste but subsequently is found not to meet the stabilisation standard set out in Condition 3.39.17 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 3.39.12.

3.39.20 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Condition 3.39.12, which shall be available for inspection by the Agency.

3.39.21 Where the Agency considers that a non-compliance with any Condition of this licence has occurred, it may serve a notice on the licensee specifying:

3.39.21.1 That only those wastes as specified, if any, in the notice are to be accepted at the installation after the date set down in the notice;

3.39.21.2 That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice;

3.39.21.3 That the licensee shall carry out any other requirement specified in the notice; and

3.39.21.4 When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the installation until written permission is received from the Agency.

3.39.22 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 3.39.17 (or meets the requirements of an alternative protocol as may be approved under Condition 3.39.15), complies with any requirements of the Department of Agriculture, Food and the Marine relating to the management of animal by-products and has been approved in advance with the Agency.

3.40 IBA Waste Management

3.40.1 IBA shall be placed in landfill cells 29 – 33 for storage and treatment activities including metal recovery, crushing, screening, ageing (weathering) and washing as per *Schedule A.1 Limitations on the Installation,* of this licence. Treatment techniques utilised shall be in accordance with BAT 36 of CID 2019/2010 where applicable.

3.40.2 Prior to acceptance of IBA for storage and treatment at the installation, the licensee shall arrange for an independent risk assessment to be carried out on the storage and treatment activities, as per Condition 3.40.1 above, to ensure that:

(i) adequate controls and monitoring are in place to mitigate against the risk of hydrogen gas generation to all receptors and to the installation;

(ii) adequate controls and monitoring are in place to mitigate against the risk of corrosive leachate and waste to all receptors and to the installation. The risk assessment shall include the generation, collection, storage, transport and onsite treatment (if implemented) of corrosive leachate and wastes generated; and

(iii) an appropriate cell lining system is in place, taking account of the risk of hydrogen gas generation and the risk of corrosive leachate and waste generation.

3.40.3 The risk assessment report, as per Condition 3.40.2, must be provided to the Agency for written approval at least six weeks in advance of the intended acceptance date of IBA on-site.

3.40.4 All controls and measures identified from the risk assessment in Condition 3.40.2 shall be implemented prior to commencement of the storage and treatment activities. The risk assessment shall be reviewed annually and following any related incident.

3.40.5 The period of storage of IBA in landfill cells 29 – 33 shall not exceed five years, from the date of the first IBA load accepted at the installation for recovery, unless otherwise agreed in writing with the planning authority, in accordance with planning permission reference ABP-303211-18, and unless otherwise approved in writing by the Agency. Any request to extend the period of storage shall be submitted to the Agency at least six months in advance of the expiry of the five year storage period.

3.40.6 Only IBA waste generated from incineration, or equivalent thermal process, shall be accepted for recovery at the installation.

3.41 SNRHW Management

3.41.1 No SNRHW shall be accepted at the installation without the prior written approval of the Agency.

3.41.2 Only SNRHW, with leaching behaviour equivalent to that of non-hazardous waste (other than municipal waste), that fulfils relevant waste acceptance criteria, shall be accepted at the installation.

3.41.3 SNRHW accepted at the installation must comply with the applicable requirements of the Landfill Directive and Council Decision 2003/33/EC, as amended.

3.41.4 A separate leachate collection and storage system shall be established for leachate generated from cells storing SNRHW.

3.41.5 SNRHW shall not be stored with bio-degradable waste or other wastes identified as incompatible as per the risk assessment required in Condition 3.41.7.

3.41.6 The licensee shall provide the Agency with two months notice in writing of its intent to accept SNRHW at the installation, including details of tonnage, assigned LoW code and source details of the SNRHW. This is to allow the Agency sufficient time to specify any specific waste acceptance criteria and other requirements to be incorporated into the risk assessment, as required in Condition 3.41.7.

3.41.7 Prior to the acceptance of SNRHW at the installation, an independent risk assessment shall be carried out to determine the suitability of the waste for acceptance in the landfill and in the cell for SNRHW. At a minimum, the assessment must take into account the following:

(i) the characteristics and hazards of the SNRHW including leaching properties and behaviour, physical stability and bearing capacity;

(ii) the compatibility of the SNRHW with other waste stored in the cell;

(iii) the compliance to criteria and to leaching limit values for granular hazardous waste, as set out in Council Decision 2003/33/EC, as amended;

(iv) the compliance to limit values for granular non-hazardous waste accepted in the same cell as the SNRHW, as set out in Council Decision 2003/33/EC, as amended;

(v) the required controls regarding the extraction, collection, utilisation and flaring of landfill gas resulting from the landfilling of the SNRHW;

(vi) the required controls regarding the extraction, collection, treatment (if implemented) and storage of leachate resulting from the landfilling of the SNRHW;

(vii) whether or not the landfill gas and leachate from the SNRHW can be extracted, collected and treated utilising the same plant and infrastructure as the landfill gas and leachate from other waste streams on-site;

(viii) the need for specific and separate infrastructure for the handling, transport, inspection and quarantine, storage and disposal of the SNRHW;

(ix) the waste analysis to be required and applicable standards for comparison and the inspection procedures to be put in place for the SNRHW;

(x) the storage location and specific requirements e.g. depositing, wrapping, covering, segregation barriers, capping, monitoring etc., required for the SNRHW when landfilled;

(xi) the potential impact to receptors and the installation;

(xii) the requirements of the Landfill Directive;

(xiii) the requirements of Council Decision (2003/33/EC), as amended;

(xiv) any aspects as required by the Agency, including requirements for sampling, testing and analysis, applicable limits, criteria for monolithic wastes, physical stability and bearing capacity;

(xv) any other hazards identified; and

(xvi) the controls or Conditions required to ensure the disposal of the SNRHW will not adversely impact receptors.

3.41.8 The risk assessment report, as per Condition 3.41.7, must be provided to the Agency for written approval at least six weeks in advance of the intended acceptance date of SNRHW on-site.

3.41.9 Any Conditions required by the risk assessment, or the Agency, must be implemented prior to accepting the SNRHW on-site or subsequent to the landfilling of the SNRHW as may be required.

3.42 Working Face

3.42.1 Unless the prior approval of the Agency is given, the following shall apply at the landfill:

(i) two working faces shall exist at the landfill at any one time for the deposit of non-stabilised and stabilised and inert waste, other than cover or restoration materials;

(ii) one working face shall exist at the landfill at any one time for the deposit of IBA waste, other than cover or restoration materials; and

(iii) each working face of the landfill shall be no more than 25 metres long and 25 metres wide (i.e. <625m^2 surface area), no more than 2.5 metres in height after compaction, and have a slope no greater than 1 in 3.

3.42.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.

3.43 Daily and Intermediate Cover

3.43.1 Unless otherwise required by the Agency, Daily and Intermediate cover material shall be as described in Attachment L9 of the Licence Application. Daily cover should be 200mm to 300mm in depth while intermediate capping should be 500mm in depth unless otherwise agreed by the Agency.

3.43.2 Each working face of the operational cell shall, at the end of each day, be covered with suitable material to minimise any nuisances occurring.

3.43.3 Any cover material at any location within the installation which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.

3.43.4 Unless otherwise approved by the Agency, IBA utilised for daily cover shall only be accepted from Licence Registration No. W0167. The IBA accepted shall be 0-50mm grade ash and shall not be mixed with any other materials prior to dispatch to the landfill. Conditions associated with the approval of IBA for daily cover, as set out in Agency approval references LR062545 and W0146-02/ap04em dated 18/06/2012, shall be complied with at all times.

3.44 Operational Controls

3.44.1 All large hollow objects and other large articles deposited at the installation shall be crushed, broken up, flattened or otherwise treated.

3.44.2 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of the landfill gas collection system only with the prior approval of the Agency.

3.44.3 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate.

3.44.4 Unless otherwise agreed, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.

3.44.5 Scavenging shall not be permitted at the installation.

3.44.6 Gates shall be locked shut when the installation is unsupervised.

3.44.7 Fuels shall only be stored at appropriately bunded locations on the installation.

3.44.8 All tanks and drums shall be labelled to clearly indicate their contents.

3.44.9 No smoking shall be allowed on the installation (other than in a designated area at the administration/office block as shown on Drawing No. LW14-821-01-P-0000-002 of the EIAR Volume 4).

3.45 Off-site Disposal and Recovery

3.45.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor approved by the Agency.

3.45.2 All waste transferred from the installation shall only be transferred to an appropriate facility approved by the Agency.

3.45.3 All waste removed off-site for recovery or disposal shall be transported from the installation to the consignee in a manner which will not adversely affect the environment.

3.46 Maintenance

3.46.1 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.

3.46.2 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

3.46.3 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face or to a skip.

3.47 New perimeter berms shall be constructed at the installation in accordance with Drawing No. LW14-821-01-P-0050-005 of the Environmental Impact Assessment Report Volume 4 and Section 2.9 of the main Environmental Impact Assessment Report.

3.48 On-site forest felling and forest restoration and planting shall be in accordance with Drawing No. LW14-821-01-P-0050-003 /012 of the Environmental Impact Assessment Report Volume 4 and Section 2.10 of the main Environmental Impact Assessment Report and shall comply with the landscaping plan as required by Condition 5 of planning permission reference ABP-303211-18.

3.49 Solar panels

3.49.1 Detailed design of the installation shall be submitted to the Agency for approval prior to installation in accordance with *Schedule E: Specified Engineering Works,* of this licence.

3.49.2 Solar panels and associated infrastructure shall be installed and maintained in a manner that does not damage or compromise the integrity of the landfill cap.

3.49.3 Solar panels shall be installed having regard to the *EPA Landfill Manual – Landfill Restoration and Aftercare.*

3.49.4 TVOC monitoring shall be carried out before and after installation of the solar panels to identify any diffuse emissions resulting from the installation.

3.49.5 The installation shall be subject to an independent assessment to verify that the integrity of the landfill cap has not be compromised. The assessment shall be repeated as required by the Agency.

3.49.6 Solar panels shall not be installed on cells containing SNRHW, unless otherwise approved by the Agency.

3.50 The licensee shall consult with Bord Gáis prior to construction or development work within 100m of the gas pipeline.

3.51 The licensee shall maintain and implement procedures for the operation of the installation in adverse wind and rain conditions.

3.52 The licensee shall establish, maintain and implement an invasive species prevention and eradication plan, to cover at least, Japanese Knotweed, Giant Knotweed, Bohemian Knotweed and any other relevant invasive species. The plan shall at a minimum include the following:

(i) The prevention, to the extent possible, of acceptance of invasive species in loads of soil and stone or of topsoil arriving at the installation, including actions to request information on the presence and management of invasive species at source sites;

(ii) The cleaning and washing of all plant and machinery used during the works, before delivery to the site, to prevent the spread of hazardous invasive species and pathogens;

(iii) Quarterly surveys of the installation for the detection of the growth of invasive species during the active phase of the installation, moving to annual surveys during the aftercare

phase, on approval by the Agency, following confirmation of the absence of invasive species at the installation;

(iv) The method for plant detection and identification;

(v) Staff training on plant identification and eradication;

(vi) The remedial actions for eradication of invasive species if identified; and

(vii) Validation method to confirm the absence of invasive species at the installation.

The licensee shall obtain the advice of an independent and appropriately qualified consultant, in the establishment and implementation of the Plan.

Reason: ***To provide for appropriate operation of the installation to ensure protection of the environment.***

Condition 4. Interpretation

4.1 Emission limit values for landfill gas emissions to atmosphere in this licence shall be interpreted in the following way:

4.1.1 Continuous Monitoring

(i) No 24 hour mean value shall exceed the emission limit value.

(ii) 97% of all 30-minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.

(iii) No 30-minute mean value shall exceed twice the emission limit value.

4.1.2 Non-Continuous Monitoring

(i) For any parameter where, due to sampling/analytical limitations, a 30-minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.

(ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.

(iii) For all other parameters, no 30-minute mean value shall exceed the emission limit value.

(iv) Mass flow thresholds refer to a rate of discharge expressed in units of kg/h, above which the concentration emission limit value applies. Mass flow threshold rates shall be determined on the basis of a single 30-minute measurement (i.e. the concentration determined as a 30-minute average shall be multiplied by an appropriate measurement of flow and the result shall be expressed in units of kg/h).

(v) Mass flow emissions shall be calculated on the basis of the concentration, determined as an average over the specified period, multiplied by an appropriate measurement of flow. No value, so determined, shall exceed the mass flow limit value.

4.2 The concentration and volume flow limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard Conditions of:

4.2.1 From landfill gas utilisation engines:

Temperature 273K, Pressure 101.3 kPa, dry gas at 5% oxygen; and

4.2.2 From landfill gas flares:

Temperature 273K, Pressure 101.3 kPa, dry gas at 3% oxygen.

4.3 Emission limit values for emissions to sewer/waters in this licence shall be achieved without the introduction of dilution, and shall be interpreted in the following way:

4.3.1 Continuous Monitoring

(i) No flow value shall exceed the specific limit.

(ii) No pH value shall deviate from the specified range.

(iii) No temperature value shall exceed the limit value.

4.3.2 Composite Sampling

(i) No pH value shall deviate from the specified range.

(ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual results similarly calculated shall exceed 1.2 times the emission limit value.

4.3.3 Discrete Sampling

For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.

4.4 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Agency, the parameter may be assessed before mixing takes place.

4.5 Noise from the installation shall not give rise to sound pressure levels measured at the installation boundary or any noise-sensitive location (NSL) which exceed the limit value(s) specified in *Schedule B.3 Noise Emissions,* of this licence.

4.6 Dust and particulate matters from the activity shall not give rise to deposition levels which exceed the limit value(s).

4.7 The following are the trigger levels for landfill gas emissions from the installation measured in any service duct or manhole on, at or immediately adjacent to the installation and/or at any other point located outside the body of the waste:

(a) Methane, greater than or equal to 1.0% v/v; and

(b) Carbon dioxide, greater that or equal to 1.5% v/v.

4.8 In relation to surface emissions from the waste body and identified features, the following shall constitute a trigger level:

(a) TVOC greater than or equal to 50ppm as methane average over capped area; or

(b) TVOC greater than or equal to 100ppm as methane instantaneous reading on open surfaces within the landfill footprint; or

(c) TVOC greater than or equal to 500ppm as methane around all identified features.

Reason: ***To clarify the interpretation of limit values fixed under this licence.***

Condition 5. Emissions

5.1 Emissions may be made from the specified emission points set out in *Schedule B: Emission Limits,* of this licence, subject to compliance with the Emission Limit Values specified in that Schedule.

5.1.1 Uncontaminated surface water may be discharged to surface water.

5.1.2 Uncontaminated surface water may be emitted to groundwater or to soil.

5.1.3 Minor, diffuse and potential emissions may be emitted to air as specified in the application, or as approved by the Agency under Condition 1 of this licence.

5.2 Notwithstanding the requirements of Condition 5.1 above, there shall be no other emissions from the installation.

5.3 No emissions, including odours and dust, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the installation boundary or any other legitimate uses of the environment beyond the installation boundary.

5.4 The licensee shall ensure that all or any of the following:

- Vermin
- Birds
- Flies
- Mud
- Litter
- Dust
- Odours

associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the installation or beyond the installation boundary or any other legitimate uses of the environment beyond the installation boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

5.5 The licensee shall, at a minimum of daily, inspect the installation and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

5.6 Emissions to Surface Water

5.6.1 Surface water emissions from the installation shall only be discharged to the Knockharley stream (Flemingstown River, IE_EA_08F050930) via emission point reference no. SW9 and SW10.

5.6.2 No raw leachate, treated leachate or contaminated surface water shall be discharged to the adjacent Knockharley stream (Flemingstown River, IE_EA_08F050930) or any part of the Nanny-Delvin catchment.

5.6.3 No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.

5.7 Within six months of the date of grant of this licence, the licensee shall review and update where required the groundwater monitoring trigger levels in accordance with the Landfill Directive. The trigger levels shall take account of the new waste streams and shall be submitted to the Agency for approval.

5.8 There shall be no direct emissions to groundwater.

5.9 The licensee shall maintain an end user agreement or agreements with Uisce Éireann for accepting leachate from the installation at their waste water treatment plant.

5.10 The trigger level for PM_{10} from the installation measured at any location on the boundary of the installation is PM_{10} greater than $50\mu g/m^3$ for a daily sample.

5.11 There shall be no clearly audible tonal component or impulsive component in the noise emissions from the installation at the installation boundary.

5.12 The licensee shall install a continuous TVOC monitor with directional information at any on-site and off-site location required by the Agency. This requirement will be reviewed by the Agency on an annual basis.

5.13 Leachate holding tanks/lagoons shall be covered, and head gases vented to treatment as may be required by the Agency.

5.14 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.

5.15 Where it is proposed to take biological sludges at the installation, these must be subject to appropriate pre-treatment in advance of acceptance at the installation.

5.16 When operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

Reason:	***To provide for the protection of the environment by way of control and limitation of emissions.***

Condition 6. Control and Monitoring

6.1 Test Programme

6.1.1 The licensee shall prepare a test programme for abatement equipment installed to abate emissions, including the northern constructed wetland and leachate treatment system.

6.1.2 The programme shall be completed within three months of the commencement of operation of the abatement equipment.

6.1.3 The criteria for the operation of the abatement equipment as determined by the test programme, shall be incorporated into the standard operating procedures.

6.1.4 The test programme shall as a minimum:

(i) establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in this licence;

(ii) assess the performance of any monitors on the abatement system and establish a maintenance and calibration programme for each monitor; and

(iii) be prepared in accordance with the guidance published by the Agency, '*Odour Emissions Guidance Note (Air Guidance Note AG9)*', as may be amended or replaced.

6.1.5 A report on the test programme shall be submitted to the Agency within one month of completion.

6.2 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C: Control and Monitoring* of this licence.

6.2.1 Sampling and analysis shall be undertaken by competent staff in accordance with documented operating procedures. Unless otherwise approved by the Agency, sampling and analysis of emissions to atmosphere shall be carried out by ISO 17025 accredited persons/organisations, with accreditation for the relevant scope of sampling and analysis, and in accordance with the Agency's air monitoring policy.

6.2.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.

6.2.3 Such procedures shall be subject to a programme of Analytical Quality Control using appropriate control standards with evaluation of test responses.

6.2.4 Where any analysis is sub-contracted it shall be outsourced to a competent laboratory.

6.3 The licensee shall ensure that:

(iv) sampling and analysis for all parameters listed in the Schedules to this licence; and

(v) any reference measurements for the calibration of automated measurement systems

shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards, which will ensure the provision of data of an equivalent scientific quality, shall apply.

The automated measuring systems shall be subject to parallel measurements with the reference methods at least once per year. The licensee shall submit to the Agency an air monitoring report with the results of the parallel measurements.

6.4 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been approved in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as

practicable, and alternative sampling and monitoring facilities shall be put in place. The use of alternative equipment, other than in emergency situations, shall be as approved by the Agency.

6.5 Monitoring and analysis equipment shall be installed, operated and maintained as necessary so that all monitoring results accurately reflect any emission, discharge or parameter specified in this licence.

6.6 The licensee shall ensure that groundwater monitoring well sampling equipment is available or installed on-site at the installation and is fit for purpose at all times. The sampling equipment shall be to Agency specifications.

6.7 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.

6.8 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended as required or approved by the Agency following evaluation of test results.

6.9 The licensee shall prepare, maintain and implement a programme, to the satisfaction of the Agency, for the identification and reduction of diffuse emissions using an appropriate combination of best available techniques. This programme shall be included in the Environmental Management Programme.

6.10 The integrity and water tightness of all tanks, bunding structures, containers and underground pipes and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee.

6.10.1 In the case of new bunding structures, tanks, lagoons, underground pipelines and containers installed on-site, the testing for integrity and water tightness shall be undertaken in advance of utilisation;

6.10.2 testing shall be carried out by a suitably qualified and experienced person;

6.10.3 testing shall be carried out in accordance with any guidance published by the Agency;

6.10.4 testing shall be carried out at least once every three years thereafter and reported to the Agency on each occasion;

6.10.5 any repairs required to ensure the integrity and water tightness of tanks, bunding structures, containers and underground pipes shall be carried out as soon as practicable; and

6.10.6 a written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

6.11 An inspection system for the detection of leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be maintained.

6.12 The surface water drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be required by the Agency), the site surface water agricultural drains, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary, and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal. The licensee shall maintain a drainage map on-site. The drainage map shall be reviewed annually and updated as necessary.

6.13 Surface water emissions

6.13.1 A visual examination of the surface water discharges shall be carried out daily. A log of such inspections, shall be maintained.

6.13.2 Trigger Values

6.13.2.1 The licensee shall, within six months of the grant of this licence, review the trigger levels for pH, TOC, and electrical conductivity in surface water discharges to the satisfaction of the Agency. The trigger values shall be established in accordance with the methods outlined in the Environmental Protection Agency's "*Guidance on the setting of trigger values for surface water discharges to off-site surface waters at EPA IPPC and Waste licensed facilities*".

6.13.2.2 The trigger values may be revised, to the satisfaction of the Agency, following evaluation of appropriate surface water monitoring data in accordance with the methods outlined in the Environmental Protection Agency's "*Guidance on the setting of trigger values for surface water discharges to off-site surface waters at EPA IPPC and Waste licensed facilities*".

6.13.2.3 The licensee shall establish, maintain and implement a response programme such that surface waters exceeding these levels will be diverted for retention and suitable disposal.

6.13.3 Run-off from process areas of the installation used for the holding, storage and treatment of waste shall be diverted for collection and safe disposal.

6.13.4 The licensee shall ensure that surface water that has the potential to become contaminated through contact with waste is physically separated from and managed separately to surface water that does not have the potential to become contaminated through contact with waste.

6.14 Within eighteen months of the date of this licence, the licensee shall carry out a risk screening and where necessary a technical assessment in accordance with the *Guidance on the Authorisation of Discharges to Groundwater,* published by the Environmental Protection Agency. A report on the outcome of the screening and where relevant the recommendations of the technical assessment in relation to the setting of groundwater compliance points and values, shall be submitted to the Agency for approval. Any actions required to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended, shall be approved by the Agency and implemented within a period to be approved by the Agency and implemented within a period approved by the Agency. Groundwater monitoring results shall be submitted annually or as required in the Schedules to this licence.

6.15 Noise

6.15.1 The licensee shall carry out a noise survey of the site operations quarterly. The survey programme shall be undertaken in accordance with the methodology specified in the '*Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)*' as published by the Agency.

6.15.2 Noise Management Plan

6.15.2.1 The licensee shall prepare, maintain and implement, to the satisfaction of the Agency, a Noise Management Plan.

6.15.2.2 The plan shall be submitted within six months of the date of grant of this licence.

6.15.2.3 The plan shall outline noise reduction and abatement measures for the installation. In relation to the IBA treatment plant, one or a combination of techniques listed in BAT 37 of CID 2019/2010 shall be used in order to prevent or, where that is not practicable, to reduce noise emissions.

6.15.2.4 The plan shall be prepared in accordance with the Agency's *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4).*

6.15.2.5 The plan shall be implemented within 12 months of the date of grant of this licence.

6.15.2.6 The plan shall be reviewed annually.

6.15.3 The licensee shall fit all heavy machinery used on-site with acoustic panels in the engine bays and acoustic mufflers (exhaust silencers), in order to mitigate against noise emissions from the installation.

6.15.4 In the event of planned high noise impacting activities, the licensee shall notify nearby local residents in advance of the planned occurrence and potential duration of the activities.

6.16 Odour

6.16.1 The licensee shall carry out an odour survey of the site operations daily.

(i) The survey programme shall be undertaken in accordance with the methodology specified in the '*Air Guidance Note 5 (AG5) Odour Impact Assessment Guidance for EPA Licensed Sites'* as published by the Agency.

6.16.2 The licensee shall arrange for an independent biannual assessment and report on surface TVOC emissions at the installation following completion of waste acceptance in any cell/sub-cell.

(i) The survey programme shall be undertaken in accordance with the methodology specified in the '*Air Guidance Note 6 (AG6) Surface VOC Emissions Monitoring on Landfill Facilities*' as published by the Agency.

6.16.3 Within six months of the date of grant of this licence, and biennially thereafter, the licensee shall review the technology related to electronic odour monitoring and trial or implement a suitable device as part of odour management controls, unless otherwise approved by the Agency.

6.16.4 Intermediate capping utilised shall be hermetically sealed geo-multicovers, unless otherwise approved by the Agency.

6.17 Odour Management Plan

6.17.1 The licensee shall revise, maintain and implement, to the satisfaction of the Agency, the site Odour Management Plan.

6.17.2 The plan shall be submitted within three months of the date of grant of this licence.

6.17.3 The plan shall outline odour reduction and abatement measures.

6.17.4 The plan shall include measures to control potential sources of odour nuisance, and as a minimum address the following:

(i) The mitigation measures included in Section 7.5.2.4 of the main Environmental Impact Assessment Report;

(ii) Waste intake, including the acceptance of odourous waste deliveries;

(iii) Waste placement, working face/active cell sizing and covering, daily cover, intermediate capping, permanent capping and associated operations;

(iv) Landfill area;

(v) Landfill gas collection and management, including infrastructure operation and maintenance, locations of infrastructure including access/haul roads, well design and density, monitoring, condensate management, field balancing, flare/combustion plant operation;

(vi) Landfill gas utilisation and flaring management, including infrastructure;

(vii) Leachate collection and management, including infrastructure and transport;

(viii) Waste storage and quarantine areas and any other materials or areas with a potential for causing odour;

(ix) Monitoring, including assessment and report on TVOC surface emissions at the installation following completion of waste acceptance in any cell/sub-cell, TVOC surface emissions from capped areas, odour checks on and off-site, receipt and assessment/verification of odour complaints received;

(x) Use of sacrificial gas extraction systems; phased capping of the waste body; and an interim capping system at inter-cell boundaries;

(xi) Working face/active cell sizing and covering;

(xii) Identification of diffuse sources of odour and of landfill gas emissions (e.g. from leachate management infrastructure and/or from side slopes);

(xiii) Relevant Conditions of this licence; and

(xiv) The provision of adequate resources and training.

6.17.5 The plan shall be prepared in accordance with the Agency's Odour Emissions Guidance Note (Air Guidance Note AG9).

6.17.6 The plan shall be reviewed annually.

6.18 The licensee shall submit a PRTR data report for the site. The pollutants and/or wastes to be included in the PRTR shall be determined by reference to EC Regulations No. 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register. The PRTR shall be prepared in accordance with any relevant Agency guidance and shall be submitted electronically in the format specified by the Agency.

6.19 The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the monitoring data generated as a result of this licence.

6.20 Groundwater and Soil Monitoring

6.20.1 The licensee shall carry out monitoring for relevant hazardous substances in soil and groundwater at the site of the installation. The substances for monitoring shall be identified by the licensee by undertaking a risk-based assessment. The risk assessment, sampling and monitoring shall be carried out in accordance with any guidance published by the Agency. The licensee shall have regard to the '*Classification of Hazardous and Non-Hazardous Substances in Groundwater*' as published by the Agency

6.20.2 Monitoring shall be carried out in accordance with *Schedule C.5 Groundwater Monitoring,* of this licence.

6.20.3 Soil monitoring shall be carried out at the site of the installation at least once every ten years. Monitoring shall be carried out in accordance with *Schedule C.9 Soil Monitoring,* of this licence.

6.21 All process effluent and sanitary effluent gullies, drainage grids and manhole covers shall be indicated by a red colour coded system. All non-process clean surface water discharge gullies, drainage grids and manhole covers shall be indicated by blue coloured markings. This system shall be maintained so as to be visible at all times during installation operation. Any identification designated in this licence (e.g. SE-X, SW-X) shall be inscribed on these manholes.

6.22 Landfill Gas Controls

6.22.1 Operation and monitoring logs shall be maintained which shall record operating status and hours of engines and flares including any events such as start-up, shut-down, maintenance, malfunctions etc.

6.22.2 All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.

6.23 Dust Controls

6.23.1 During construction stages, the licensee shall implement and maintain a dust control plan which shall contain the control measures set out in Section 7.5.1.1 of Volume 2 - Main EIAR.

6.23.2 In dry weather, site access roads, internal site roads and other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

6.23.3 A road sweeper is to be used daily on sealed roads.

6.23.4 Speed limits on-site access roads and internal site roads shall be implemented and maintained.

6.23.5 Waste, IBA, soil and any other material that may give rise to windblown dust shall be covered when transported.

6.23.6 All vehicles, excluding passenger vehicles, leaving the site are required to pass through the wheel wash.

6.23.7 IBA site haul roads shall be surface sealed.

6.23.8 IBA stockpiles shall be weathered under cover in the IBA treatment building.

6.23.9 IBA shall be handled at an appropriate moisture content to prevent dust nuisance.

6.24 Dust Monitoring

6.24.1 Ambient dust and PM_{10} monitoring shall be carried out in accordance with *Schedule C.4 Ambient Air Monitoring,* of this licence, and compared to limit values set out in *Schedule B.4 Dust Limits,* of this licence.

6.24.2 The Licensee shall, review ambient dust and PM_{10} monitoring locations during and on completion of the development to ensure they are located appropriately.

6.24.3 Additional monitoring locations for ambient dust and PM_{10} shall be installed, maintained and monitored if required by the Agency.

6.25 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.

6.26 The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.

6.27 All persons conducting the sampling, monitoring and interpretation as required by this licence shall be suitably competent.

6.28 Subject to the agreement of the well owners, all private wells within 1km of the landfill footprint shall be included in the monitoring programme set out in *Schedule C.5 Groundwater Monitoring,* of this licence.

6.29 The licensee shall implement a continuous monitoring programme for the water in the northern and southern surface water ponds. This programme shall include the criteria/trigger levels, which will determine when the automated penstock in the outlet from the surface water pond shall be closed. Such continuous monitoring shall, as a minimum, include electrical conductivity, pH and TOC and shall be carried out on the inlet to the northern and southern surface water ponds at monitoring locations to be agreed by the Agency.

6.30 A topographical survey shall be carried out annually at the installation. The survey shall include a measurement of the remaining available void space. The survey shall be in accordance with any written instructions issued by the Agency.

6.31 An annual biological assessment of the Knockharley stream (Flemingstown River, IE_EA_08F050930), Kentstown Stream and Nanny River shall be undertaken in accordance with *Schedule C.2.4 Receiving Water Biological Monitoring,* of this licence. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The report shall include a map showing the location of monitoring points, each identified by a unique number and a twelve-point grid reference. The scope, content and details of the contractor carrying out the assessment shall be submitted to the Agency for its approval prior to the assessment.

6.32 The licensee shall carry out an annual stability assessment of the side slopes of the installation.

6.33 The licensee shall ensure that any waste acceptance testing and analysis required by this licence shall be carried out by competent laboratories in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards or alternative methods shall apply with the agreement of the Agency.

6.34 Operational Controls

6.34.1 There shall be no unauthorised public access to the installation.

6.34.2 Scavenging shall not be permitted at the installation.

6.35 Nuisance Monitoring

The licensee shall, at a minimum of one-week intervals, inspect the installation and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours unless otherwise agreed or instructed by the Agency. The licensee shall maintain a record of all nuisance inspections.

6.36 The road network in the vicinity of the installation shall be kept free from any debris and deposited waste caused by vehicles entering or leaving the installation. Any such debris or deposited waste shall be removed without delay.

6.37 Litter Control

6.37.1 Litter fencing and netting shall be installed and maintained around the perimeter of the active tipping area prior to the disposal of any waste in any cell. The netting shall meet the guidance provided in the *EPA Landfill Manuals – Landfill Operational Practices*. The height of the netting shall be minimised so as to not cause visual intrusion and the netting shall be kept tidy. Litter trapped in the netting shall be removed as soon as practicable. Portable litter nets/screens shall also be used at the active tipping face.

6.37.2 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:

(i) a temporary repair shall be made by the end of the working day; and,

(ii) a repair to the standard of the original netting shall be undertaken within three working days.

6.37.3 All loose litter or other waste, placed on or in the vicinity of the installation, other than in accordance with the requirements of this licence, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00 am of the next working day after such waste is discovered.

6.37.4 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the installation are appropriately covered.

6.38 Bird Control

6.38.1 Birds shall be prevented from gathering on and feeding at the installation by the use of birds of prey and/or other bird scaring techniques. The birds of prey and/or other techniques shall be in place on the installation at least two weeks prior to any waste being disposed of and shall maintain their presence every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

6.38.2 The licensee shall, as may be required by the Agency, carry out an assessment of the effectiveness of the bird control measures at the installation. This assessment shall include, where required:

(i) proposals for additional bird control measures;

(ii) method for assessing the effectiveness of such additional measures; and,

(iii) timescales for the implementation of such measures.

6.39 The licensee shall maintain and implement procedures for the control and eradication of vermin and fly infestations at the installation. The procedures and measures which shall include as a minimum the following:

(a) details on the insecticides(s) and rodenticides(s) to be used;

(b) operator training;

(c) mode and frequency of application and measurers to contain sprays at the installation boundary;

(d) details on the precautions (including supporting documentation) to be taken to minimise the secondary poisoning of birds and other species from the use of the insecticides and rodenticides proposed;

(e) copies of any comments received from National Parks and Wildlife Service on the vermin controls proposed; and

(f) response proposed to complaints received about any vermin adjacent to the installation.

Reason: ***To provide for the protection of the environment by way of treatment and monitoring of emissions.***

Condition 7. Resource Use and Energy Efficiency

7.1 The licensee shall carry out an audit of the energy efficiency of the site as required by the Agency. The audit shall be carried out in accordance with the guidance published by the Agency, "*Guidance Note on Energy Efficiency Auditing*".

7.2 The audit shall identify all practicable opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.

7.3 The licensee shall identify opportunities for reduction in the quantity of water used on-site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.

7.4 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.

7.5 On an annual basis, the licensee shall monitor the consumption of water, energy and raw materials, as well as the annual generation of waste and waste water.

Reason: ***To provide for the efficient use of resources and energy in all site operations.***

Condition 8. Materials Handling

8.1 The licensee shall ensure that waste generated in the carrying on of the activity shall be prepared for re-use, recycling or recovery or, where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment.

8.2 Disposal or recovery of waste on-site shall only take place in accordance with the Conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8.3 Waste sent off-site for recovery or disposal

8.3.1 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor.

8.3.2 The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.

8.3.3 Waste sent off-site for recovery or disposal shall be transferred only to an appropriate facility.

8.4 The licensee shall ensure that, in advance of transfer to another person, waste shall be classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling.

8.5 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.

8.6 Waste and materials shall be stored in designated areas, protected as may be appropriate against spillage and leachate run-off. The waste and materials shall be clearly labelled and appropriately segregated.

8.7 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C.10 Waste Monitoring,* of this licence.

8.8 Unless approved in writing, in advance, by the Agency the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.

8.9 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended) and associated national regulations.

8.10 Baled Waste Storage

8.10.1 For baled recyclables and baled MSW, waste reception and storage shall be carried out inside the designated waste storage building. No waste shall be stored or handled outdoors.

8.10.2 Baled recyclables and baled MSW shall be wrapped in such a manner that ensures that:

(i) the waste is fully contained;

(ii) the emission of odour from the wrapped bales is minimised:

(iii) access by vermin is prevented, and

(iv) the discharge of contaminated run-off from the wrapped bales is prevented.

8.10.3 Handling of baled recyclables and baled MSW at the installation shall be such that damage to bales is minimised.

8.10.4 Baled recyclables and baled MSW shall be dispatched from the installation on a 'first in, first out' basis. Baled waste shall be labelled in accordance with Condition 3.39.3.5 of this licence.

8.10.5 Unless otherwise agreed by the Agency, baled recyclables and baled MSW shall not be stored at the installation for longer than 21 days from the date of arrival at the installation, or as may be restricted by the Waste Storage Plan.

8.10.6 The licensee shall implement and maintain operating procedures for the reception, storage, handling and dispatch of baled recyclables and baled MSW.

8.10.7 The integrity of each wrapped bale made at the installation shall be inspected fortnightly and prior to its dispatch from the installation. Any damaged bales shall be repaired within 24 hours of damage being detected. No damaged bales shall be dispatched fiom the installation. Records of these checks and repairs shall be maintained at the installation.

8.11 Waste and Materials Storage Plan

8.11.1 The licensee shall, within six months of the date of grant of this licence, develop and thereafter maintain and implement a Waste and Materials Storage Plan for all waste, other feedstocks (including chemicals), topsoil, and other materials and waste water stored and held at the installation.

8.11.2 The Waste and Materials Storage Plan shall be adequate to ensure compliance with all Conditions of this licence.

8.11.3 The Waste and Materials Storage Plan shall be to the satisfaction of the Agency at all times.

8.11.4 The Waste and Materials Storage Plan shall incorporate:

(i) the recommendations of the Fire Risk Assessment required by Condition 9.5 of this licence;

(ii) a limit on the total quantity of waste to be stored at the installation at any one time;

(iii) maximum stockpile sizes in designated storage areas or infrastructure including maximum volume, height, length, width and area, and minimum separation distances where applicable;

(iv) a limit on the maximum storage or holding period for each type of waste in designated storage areas or infrastructure;

(v) a bale identity and tracking system;

(vi) limitations, in as much as they may be necessary, on waste storage quantities and arranagements to be used to prevent odours arising, particularly during warm weather;

(vii) limitations, as may be necessary, on waste storage arrangements to be used to prevent odours arising;

(viii) a drawing or plan of the location of each waste type and the means of storage for each waste type (e.g. as loose waste, baled, in sealed containers);

(ix) details of the drainage system super-imposed on the above drawing or plan; and

(x) a designated fire quarantine area.

8.11.5 Waste storage and holding practices at the installation shall comply at all times with the Waste and Materials Storage Plan.

8.11.6 Waste accepted or generated at the installation shall be stored or held only in designated areas or infrastructure that have been identified in the Waste and Materials Storage Plan.

8.11.7 All designated areas or infrastructure for storage or holding of waste and waste water shall be:

- clearly labelled;
- appropriately segregated; and
- visibly or physically delineated by walls, dividers, painted lines or marks on the ground or other methods acceptable to the Agency.

8.11.8 The Emergency Response Procedure as required under Condition 9 of this licence shall include an up-to-date copy of the Waste and Materials Storage Plan.

8.11.9 The Waste and Material Storage Plan shall include in its scope any material that was waste but has achieved end-of-waste status.

8.12 Unless approved by the Agency, the licensee shall not dispose of any waste that has been accepted at the installation for the purpose of a recovery activity.

Reason: ***To provide for the appropriate handling of material and the protection of the environment.***

Condition 9. Accident Prevention and Emergency Response

9.1 The licensee shall ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

9.2 The licensee shall ensure that a documented Emergency Response Procedure is in place, that addresses any emergency situation which may originate on-site. This procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

9.3 Incidents

9.3.1 In the event of an incident the licensee shall immediately:

(i) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;

(ii) isolate the source of any such emission;

(iii) evaluate the environmental pollution, if any, caused by the incident;

(iv) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

(v) identify the date, time and place of the incident; and

(vi) notify the Agency as required by Condition 11.5 of this licence.

(vii) provide a proposal to the Agency for its agreement within one month of the incident occurring to:

(a) identify and put in place measures to avoid reoccurrence of the incident; and

(b) identify and put in place any other appropriate remedial action.

9.3.2 Where an incident or accident that significantly affects the environment occurs, the licensee shall, without delay take measures to limit the environmental consequences of the incident or accident and to prevent further incident or accident.

9.4 Emergencies

9.4.1 In the event of a breakdown of equipment or any other occurrence which results in the closure of the installation for more than 48 hours, any waste arriving at the installation shall be transferred directly to an alternative appropriate facility until such time as the installation is returned to a fully operational status. The breakdown of equipment or any other occurrence which results in the closure of the installation, regardless of duration, shall be treated as an emergency and rectified as soon as possible.

9.4.2 All significant spillages occurring at the installation shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

9.4.3 No waste shall be burnt within the boundaries of the installation. A fire at the installation shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

9.4.4 In the event that monitoring of local wells indicates that the installation is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide and fund an alternative supply of water to those affected.

9.4.5 In the event that monitoring of the side slopes of the installation indicate that there may be a risk of slope failure this will be treated as an emergency.

9.4.6 In the event that monitoring should indicate contamination of the site surface water in the Knockharley stream (Flemingstown River, IE_EA_08F050930), the stream shall be diverted to the surface water lagoon(s).

9.5 The licensee shall arrange every three years or as directed by the Agency, for the completion by an independent and appropriately qualified consultant, of a fire risk assessment for the installation. The assessment shall examine all relevant factors on-site that impinge on fire risk and prevention, and shall determine any applicable requirements for fire fighting facilities. The assessment shall have regard to any guidelines issued by the Agency with regard to fire risk assessment. A report on the fire risk assessment shall be prepared and notified to the Agency, in accordance with Condition 11.12 of this licence. Any recommendations in the fire risk assessment shall be implemented by the licensee.

9.6 After construction of the installation, or part thereof, and prior to the disposal of any waste in the installation or part thereof, and prior to the use of any infrastructure at the installation, an independent third party shall carry out a risk assessment of the installation, or part thereof, as agreed in advance with the Agency. The risk assessment shall pay particular regard to any accidents, emergencies, or other incidents, which might occur at the installation and their effect on the environment, on the neighbours of the installation and on adjoining land-uses. The assessment and recommendations, including a timescale for implementation, shall be submitted to the Agency for approval. The agreed recommendations shall be implemented within the agreed timescale.

Reason: ***To provide for the protection of the environment.***

Condition 10. Closure, Restoration and Aftercare Management

10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution. A final validation report to include a certificate of completion, for all or part of the site as necessary, to demonstrate there is no continuing risk to the environment shall be submitted to the Agency within three months of termination or planned cessation of the activity. The licensee shall carry out such tests, investigations or submit certification as required by the Agency.

10.2 Closure, Restoration and Aftercare Management Plan (CRAMP)

10.2.1 The licensee shall submit a revised CRAMP for agreement by the Agency within six months of the date of grant of this licence. The licensee shall maintain a fully detailed and costed plan for the closure, restoration and long-term aftercare of the site or part thereof.

10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement. No amendments may be implemented without the agreement of the Agency.

10.3 The Closure, Restoration and Aftercare Management Plan (CRAMP) shall include, as a minimum, the following:

(i) a scope statement for the plan;

(ii) potential restoration options, in addition to the installation of solar panels, taking account of risk assessments required relating to SNRHW in accordance with Condition 3.41.7;

(iii) proposals for nature conservation and woodland restoration;

(iv) the proposed consultation process in relation to the restoration options for the installation;

(v) the criteria that define the successful closure and restoration and aftercare of the activity or part thereof, which ensures minimum impact on the environment;

(vi) a programme to achieve the stated criteria;

(vii) where relevant, a test programme to demonstrate the successful implementation of the plan;

(viii) details of the long-term supervision, monitoring, control, maintenance and reporting requirements for the restored facility; and

(ix) details of the costings for the plan.

10.4 The licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with closure, restoration and aftercare identified in Condition 10.2 above. The amount of financial provision held shall be reviewed and revised as necessary.

10.5 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and Guidance on Financial Provision for Environmental Liabilities (2015), as may be amended or replaced, when implementing Conditions 10.2, 10.3 and 10.4 above. The licensee shall also have regard to the guidance published in the Agency's Landfill Manual on "Landfill Restoration and Aftercare". The licensee shall restore the installation on a phased basis.

10.6 The final profile/height of the landfill footprint shall be domed in shape, and a maximum of 74mOD Malin on landfill phases prior to grant of planning permission reference ABP-303211-18, and a maximum of 85mOD Malin on the active and remaining landfill phases at the date of grant of permission on 30 April 2021. The licensee shall submit a map showing the final contour layout within three months of the date of grant of this licence.

10.7 Unless otherwise agreed by the Agency, the final capping shall consist of the following:

(i) top soil (150-300mm);

(ii) subsoils, such that total thickness of top soil and subsoils is at least 1m;

(iii) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of $1x10^{-4}$ m/s or an equivalent geosynthetic layer;

(iv) compacted mineral layer of a minimum 0.6m thickness with a permeability of less than $1x10^{-9}$ m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection; and

(v) gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.

10.8 The proposed design of the final capping for landfill cells shall be submitted for approval by the Agency, prior to installation, in accordance with *Schedule E: Specified Engineering Works* of this licence. The proposed design of the final capping for cells containing IBA and SNRHW shall take into account the outcome of the risk assessments required as per Condition 3.40.2 and Condition 3.41.7.

10.9 The licensee shall maintain a stockpile of capping materials at the installation containing the requisite volume of capping materials for a six-month period. If using geosynthetic material, the licensee shall ensure that adequate secure supplies are available.

10.10 No material or object that is incompatible with the proposed restoration of the installation shall be present within one metre of the final soil surface levels.

10.11 Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap in accordance with the *EPA Manual on Landfill Restoration And Aftercare.*

10.12 All soils shall be stored to preserve the soil structure for future use.

10.13 A final validation report to include a certificate of completion for the Restoration and Aftercare Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason: ***To make provision for the proper closure of the activity ensuring protection of the environment.***

Condition 11. Notification, Records and Reports

11.1 The licensee shall submit the reports, proposals and submissions required by this licence by the deadlines specified. The licensee shall not be in compliance with the requirements of this Condition unless and until it has submitted every report, proposal and submission, the deadline for which has passed.

11.2 The licensee shall carry out every action required by the Agency, and arising out of such reports, proposals or submission, by such deadline as the Agency may specify. The licensee shall not be in compliance with the requirements of this Condition unless and until it has carried out every such action.

11.3 The licensee shall notify the Agency of the intended date of commencement of acceptance of IBA waste, baled recyclables and baled MSW for Scheduled Disposal/Recovery activities at the installation, one month in advance of commencement, in a format as may be specified by the Agency.

11.4 The licensee shall provide the Agency with two months notice in writing of its intent to accept SNRHW at the installation in accordance with Condition 3.41.6.

11.5 The licensee shall notify the Agency, in a format as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

(i) an incident or accident as defined by the glossary;

(ii) any release of environmental significance to atmosphere from any potential emissions point including bypasses; or

(iii) any breach of one or more of the Conditions attached to this licence.

The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any emissions. All details required to be communicated must be in accordance with any guidance provided by the Agency.

11.6 In the event of any incident which relates to discharges to sewer having taken place, the licensee shall notify Uisce Éireann and the Local Authority in a manner prescribed by Uisce Éireann, as soon as practicable after such an incident.

11.7 The following shall be notified, as soon as practicable after the occurrence of any incident which relates to a discharge to water:

(i) Inland Fisheries Ireland in the case of discharges to receiving waters.

(ii) Uisce Éireann and /or Water Services Authority and/or other groups responsible for the downstream abstraction of drinking water, in the case of any incident where the discharge(s) have been identified as upstream of a drinking water abstraction point.

11.8 The licensee shall make a record of any notification made under Condition 11.5 above. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to, the incident or accident. The record shall include all corrective actions taken to manage the incident or accident, minimise wastes generated and the effect on the environment, and avoid recurrence. In the case of a breach of a Condition, the record shall include measures to restore compliance.

11.9 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and give details of the nature of the complaint. A record shall also be kept of the actions taken on foot of the complaint, the results of such actions and the response made to each complainant.

11.10 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the installation.

11.11 The licensee shall as a minimum ensure that the following documents are accessible at the site:

(i) the licences relating to the installation;

(ii) the current EMS for the installation including all associated procedures, reports, records and other documents;

(iii) the previous year's AER for the installation;

(iv) records of all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence and all other such monitoring which relates to the environmental performance of the installation;

(v) relevant correspondence with the Agency;

(vi) up-to-date and appropriately scaled site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points (including 12-digit national grid references). The drawings shall be updated in line with the phased development of cells;

(vii) up-to-date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment;

(viii) the current Environmental Management Programme; and

(ix) any elements of the licence application or EIA documentation referenced in this licence.

This documentation shall be available to the Agency for inspection at all reasonable times.

11.12 The licensee shall submit to the Agency annually, or as otherwise approved by the Agency,

11.12.1 An AER covering the previous calendar year, which shall be;

(i) to the satisfaction of the Agency and include as a minimum the information specified in *Schedule D: Annual Environmental Report*, of this licence;

(ii) prepared in accordance with any relevant guidelines issued by the Agency; and

(iii) submitted by the 31st March of each year,

11.12.2 The results of all emission monitoring carried out in accordance with the requirements of this licence; including an assessment and interpretation of the results.

11.12.3 The fire risk assessment report as required in accordance with Condition 9.5. The report should be submitted to the Agency after initial completion and every three years thereafter.

11.13 A full electronic record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall be maintained on a monthly basis and shall as a minimum contain details of the following:

(i) the tonnages and LoW Code for the waste materials imported and/or sent off-site for disposal/recovery;

(ii) the names of the agent and carrier of the waste, and their waste collection permit details, if required (to include issuing authority and vehicle registration number);

(iii) details of the ultimate disposal/recovery destination facility for the waste and its appropriateness to accept the consigned waste stream, to include its permit/licence details and issuing authority, if required;

(iv) written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;

(v) details of all waste consigned abroad for Recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record;

(vi) details of any rejected consignments;

(vii) details of any approved waste mixing;

(viii) the results of any waste analyses required under *Schedule C: Control and Monitoring* of this licence;

(ix) the tonnage and LoW Code for the waste materials recovered/disposed on-site; and

(x) any other records as may be specified by the Agency.

11.14 The licensee shall maintain an electronic record for each load of waste arriving at and departing from the installation. The licensee shall record the following:

(i) the date and time;

(ii) the name of the carrier (including if appropriate, the waste carrier registration details/waste collection permit number);

(iii) the vehicle registration number;

(iv) the trailer, skip or other container unique identification number (where relevant);

(v) the name of the producer(s)/collector(s) of the waste as appropriate;

(vi) the name of the waste facility (if appropriate) from which the load originated including;

(vii) the waste/IE licence or waste facility permit register number (if appropriate);

(viii) the classification of the waste, including whether non-stabilised, stabilised, inert, residual MSW or otherwise, etc;

(ix) a description of the waste including the associated LoW codes;

(x) the quantity of the waste, recorded in tonnes;

(xi) details of the treatment(s) on-site and prior to arrival to which the waste has been subjected;

(xii) whether the waste is for disposal or recovery and if recovery for what purpose;

(xiii) the name of the person checking the load;

(xiv) the cell location in the landfill where the waste is placed;

(xv) where loads or wastes are removed, or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed, including waste/IE licence or waste facility permit register number; and

(xvi) where applicable, a consignment note number (including transfrontier shipment notification and movement/tracking form numbers, as appropriate).

11.15 The licensee shall provide an electronic or written acknowledgement (to the carrier/waste contractor) of receipt of each delivery of waste to the installation (for disposal or recovery). The receipt shall record the following:

(i) a description of the waste including the associated LoW code;

(ii) the quantity of the waste, recorded in tonnes; and

(iii) any other details as may be required by the Agency.

11.16 The licensee shall notify the Agency, as soon as practicable after the occurrence and in a format as may be specified by the Agency, of any waste that arrived at the installation that does not meet the waste acceptance criteria.

11.17 Recovery of IBA Waste

11.17.1 The licensee shall submit an IBA trial plan to the Agency, outlining the nature and recovery techniques to be incorporated, one month prior to any IBA recovery trial taking place at the installation. The trial plan shall have regard to the requirements of Condition 2.2.2.5, in accordance with BAT 10 of CID 2019/2010.

11.17.2 Records shall be maintained of any IBA waste removed off-site for further recovery to appropriate facilities. Records shall be maintained in accordance with Conditions 11.13 and 11.14.

11.17.3 The licensee shall on an annual basis submit a report to the Agency detailing the management of IBA at the installation. The report shall include details of the quantities of IBA accepted and treated at the installation and the status of achievement of end-of-waste in accordance with Condition 2.2.2.10. The licensee shall liaise with relevant stakeholders involved in the production and management of IBA and statutory and non-statutory stakeholders.

11.18 The following records as a minimum shall be maintained for IBA material which has achieved end-of-waste status:

(i) the tonnage and location of material stored on-site;

(ii) the tonnage of material dispatched off-site;

(iii) the organisation and address to where material has been dispatched to; and

(iv) any other details as may be required by the Agency.

11.19 The licensee shall maintain a record of all by-product and a record of all end-of-waste material accepted at the installation.

11.20 An electronic record shall be kept of each consignment of leachate removed from the installation. The record shall include the following:

(i) the date and time of removal of leachate from the installation;

(ii) the name of the carrier (including the waste carrier registration details/waste collection permit number);

(iii) the volume of leachate, in cubic metres, removed from the installation on each occasion;

(iv) the leachate lagoon or tank reference from which the leachate was removed;

(v) the name and address of the Waste Water Treatment Plant or facility to which the leachate was transported; and

(vi) any incidents or spillages of leachate during its removal or transportation.

11.21 A written or electronic record shall be kept at the installation of the programme for the control and eradication of vermin and fly infestations at the installation. These records shall include as a minimum the following:

(i) the date and time during which spraying of insecticide is carried out;

(ii) contractor details;

(iii) contractor logs and site inspection reports;

(iv) details of the rodenticide(s) and insecticide(s) used;

(v) operator training details;

(vi) details of any infestations;

(vii) mode, frequency, location and quantity of application; and,

(viii) measures to contain sprays within the installation boundary.

11.22 The following written or electronic operational records shall be maintained by the licensee:

(i) the types and quantities of waste recovered and disposed of at the installation each year. These records shall include the relevant LoW Codes;

(ii) all training undertaken by installation staff;

(iii) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;

(iv) details of all nuisance inspections;

(v) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring; and

(vi) all other records as required by the Conditions of this licence or by the Agency.

11.23 The licensee shall maintain capacity records and shall report the following to the Agency, within two weeks of the end of each quarter:

(i) the total tonnage and type, including LoW code, of waste for landfill accepted at the installation during the quarter;

(ii) the total tonnage of IBA for storage and recovery accepted at the installation during the quarter;

(iii) the remaining void space (m^3) available in waste cells and IBA cells;

(iv) the expected timeframe in which the available void space available in waste and IBA cells will be filled; and

(v) any other information as may be required by the Agency regarding the acceptance, storage, recovery and disposal of waste on-site.

11.24 The Licensee shall report to the Agency such data and records, and at such a frequency and in a format, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 3.39.12. The licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the Figures have been calculated.

11.25 The licensee shall as part of the Annual Environmental Report, or other means as may be specified by the Agency, report on the contribution by this installation to the achievement of the waste recovery objectives stated in Condition 2.2.2.10 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages/appropriate quantities of the following:

(i) the recovery of non-hazardous waste and inert waste;

(ii) the recovery of energy through landfill gas combustion; and

(iii) the generation of energy through solar panel installations.

11.26 The licensee shall submit report(s) electronically as required by the Conditions of this licence to the Agency.

11.27 All reports shall be certified accurate and representative by the installation manager or a nominated, suitably qualified and experienced deputy.

11.28 To meet the requirements of the Odour Management Plan, as required in accordance with Condition 6.17, the licensee shall carry out a monthly review of odour control measures in place at the installation and maintain findings in a monthly report. This shall include:

(a) Consideration of odour complaints received during the period (including details and nature of complaints, times and weather Conditions, any unusual circumstances, problems, etc.);

(b) Review of any monitoring, including ambient odour monitoring in accordance *Schedule C.1.4 Monitoring of Ambient Odour,* of this licence, carried out (and including investigation of complaints and actions taken where relevant);

(c) An update on the existing landfill gas control infrastructure (including operational status, number of wells & vents connected and unconnected to the landfill gas collection system, quantity of gas collected and flared/utilised, estimated quantity of landfill gas being produced, details of any problems with equipment during period);

(d) Details of any remedial/corrective actions taken, where relevant, including actions taken on foot of recommendations from previous reports; and recommendations.

The licensee shall maintain these reports on-site and forward them to the Agency on request.

Reason: ***To provide for the collection and reporting of adequate information on the activity.***

Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €13,749, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Environmental Protection Agency Act 1992 as amended. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of this licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Environmental Protection Agency Act 1992 as amended, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

12.2 Environmental Liabilities

12.2.1 The licensee shall arrange for the revision, by an independent and appropriately qualified consultant, of a comprehensive and fully costed (revised) Environmental Liabilities Risk Assessment (ELRA) which addresses the liabilities from past and present activities. A report on this assessment shall be submitted for approval and agreement by the Agency within six months of the date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on-site, and in any case every three years following initial agreement.

12.2.2 The licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities with respect to the ELRA in Condition 12.2.1 above. The amount of financial provision held shall be reviewed and revised as necessary.

12.2.3 The licensee shall have regard to the Environmental Protection Agency's *Guidance on Assessing and Costing Environmental Liabilities (2014) and Guidance on Financial Provision for Environmental Liabilities (2015),* as may be amended or replaced, when implementing Conditions 12.2.1 and 12.2.2 above.

12.3 In accordance with Section 53A of the Waste Management Act 1996 as amended, the licensee shall ensure the costs involved in the setting up and operation of the installation, as well as the costs of closure, restoration, remediation and/or aftercare (including cost of financial provision) for a period of not less than 30 years (post closure) shall be covered by the amount(s) to be charged for the disposal of waste at the installation. The statement required under Section 53A(5) of the said Act, shall be submitted to the Agency by the date and in the format specified by the Agency.

Reason:	***To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.***

SCHEDULE A: Limitations

A.1 Limitations on the Installation

The following waste related processes are authorised:

- Acceptance and landfilling of waste within the landfill footprint.
- Acceptance and storage of IBA waste within the landfill footprint.
- Treatment of IBA for recovery including metal recovery, crushing, screening, ageing (weathering) and washing.
- Storage of baled recyclables and baled municipal solid waste.
- Extraction, collection, treatment and dispatch of leachate for off-site disposal.
- Controlled recirculation of leachate.
- Processes for the management and mitigation of environmental emissions including landfill gas and surface water.
- Maintenance and aftercare activities.
- Use of inert waste in landfill operations.
- Use of inert waste for engineering/construction purposes.

No additions to these processes are permitted unless approved in advance by the Agency.

A.2 Waste Acceptance

Table A.2.1 Waste Categories and Quantities

Waste Type		Maximum (Tonnes Per Calendar Year)
Non-Hazardous Wastes Note 1	Household, Commercial and Industrial Note 2, Note 3	285,000
	Baled Recyclables & Baled Municipal Solid Waste Note 4	
	Soil and Stone	
	Construction & Demolition	
	IBA	150,000
Other Waste	Stable, Non-Reactive Hazardous Waste Note 5	5,000
Total		440,000 Note 6

Note 1: Any proposals to accept other compatible non-hazardous waste types must be approved in advance by the Agency.

Note 2: The quantity of residual municipal solid waste accepted for disposal shall not exceed 188,000 tonnes per annum. A change in this quantity may be approved by the Agency, subject to written confirmation from the planning authority, after a period of three years in line with planning permission reference ABP-303211-18.

Note 3: A maximum of 65,000 tonnes shall consist of non-stabilised biodegradable waste, unless otherwise approved by the Agency.

Note 4: A maximum of 5,000 tonnes per annum of baled recyclables and baled municipal solid waste shall be accepted for storage, prior to onward recovery/disposal off-site. These wastes shall not be placed in the landfill void.

Note 5: SNRHW not to exceed 49,999 tonnes over the lifetime of the installation. SNRHW types, including LoW code, must be approved by the Agency prior to acceptance at the installation.

Note 6: This is the maximum quantity of all waste to be accepted at the installation in a calendar year, including any reserved contingency capacity required in accordance with planning permission reference ABP-303211-18. Any waste material utilised for capping and profiling shall be counted within this total.

Table A.2.2 Total Permitted Landfill Capacity

Landfill Capacity	Volume m^3 Note 1
Total landfill waste capacity excluding IBA Cells	3,833,955
IBA Cells 29 - 33	890,443

Note 1: Capacity volumes may only be increased on the approval of the Agency.

SCHEDULE B: Emission Limits

B.1 Emissions to Air

B.1.1 Emission limit Values for Landfill Gas Utilisation Engines

Emission Point Reference No: A2-1 (297569E, 266888N)
A2-2 (297576E, 266889N)
A2-3 (297582E, 266891N)
A2-4 (297595E, 266892N)

Volume to be emitted: **Maximum rate per hour:** A2-1 800m^3
A2-2 800m^3
A2-3 675m^3
A2-4 675m^3

Minimum discharge height: 10m above ground

Parameter Note 1	Emission Limit Value Existing Combustion Plant Until 31 December 2029	Emission Limit Value Existing Combustion Plant From 01 January 2030 Note 3	Emission Limit Value New Combustion Plant From 20 December 2018 Note 4
Sulphur Dioxide Note 2	-	60 mg/m^3	40 mg/m^3
Nitrogen Oxides (as NO_2) Note 2	500 mg/m^3	190 mg/m^3	190 mg/m^3
Particulates Note 2	130 mg/m^3	130 mg/m^3	130 mg/m^3
Carbon Monoxide Note 2	1400 mg/m^3	1400 mg/m^3	1400 mg/m^3
TA Luft Organics Class I	20 mg/m^3 at mass flows > 0.1 kg/hr	20 mg/m^3 at mass flows > 0.1 kg/hr	20 mg/m^3 at mass flows > 0.1 kg/hr
TA Luft Organics Class II	100 mg/m^3 at mass flows > 2.0 kg/hr	100 mg/m^3 at mass flows > 2.0 kg/hr	100 mg/m^3 at mass flows > 2.0 kg/hr
TA Luft Organics Class III	150 mg/m^3 at mass flows > 3.0 kg/hr	150 mg/m^3 at mass flows > 3.0 kg/hr	150 mg/m^3 at mass flows > 3.0 kg/hr
Total Volatile Organic Carbon Note 2	1000 mg/m^3	1000 mg/m^3	1000 mg/m^3
Hydrogen Chloride	50 mg/m^3 at mass flows > 0.3 kg/hr	50 mg/m^3 at mass flows > 0.3 kg/hr	50 mg/m^3 at mass flows > 0.3 kg/hr
Hydrogen Fluoride	5 mg/m^3 at mass flows > 0.05 kg/hr	5 mg/m^3 at mass flows > 0.05 kg/hr	5 mg/m^3 at mass flows > 0.05 kg/hr

Note 1: The concentration and volume flow limits for emissions shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard Conditions of: Temperature 273K, Pressure 101.3 kPa, dry gas; 5% oxygen.

Note 2: Mass flow emission limits may also be utilised if approved by the Agency.

Note 3: Emission limit values for sulphur dioxide and nitrogen oxides, applicable to existing medium combustion plant from 01 January 2030, subject to the Conditions as set out in the European Union (Medium Combustion Plants) Regulations 2017, if approved by the Agency.

Note 4: Emission limit values for sulphur dioxide and nitrogen oxides, applicable to new medium combustion plant from 20 December 2018, subject to the Conditions as set out in the European Union (Medium Combustion Plants) Regulations 2017, if approved by the Agency.

B.1.2 Emission limit Values for Landfill Gas Flares

Emission Point Reference No: A2-5 (297564E, 266894N)
A2-6 (297558E, 266915N)
A2-7 (297559E, 266907N)

Volume to be emitted: **Maximum rate per hour:** A2-5 1500m^3
A2-6 1500m^3
A2-7 1500m^3

Minimum discharge height above ground: 8.75m (A2-5), 10m (A2-6), 10m (A2-7)

Parameter	Emission Limit Value Note 1
Nitrogen Oxides (as NO_2) Note 2	150 mg/m^3
Carbon Monoxide Note 2	50 mg/m^3
Total Volatile Organic Carbon Note 2	10 mg/m^3
Hydrogen Chloride	50 mg/m^3 at mass flows > 0.3 kg/hr
Hydrogen Fluoride	5 mg/m^3 at mass flows > 0.05 kg/hr

Note 1: The concentration and volume flow limits for emissions shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard Conditions of: Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen.

Note 2: Mass flow limits may also be utilised if approved by the Agency.

B.1.3 Landfill Gas Concentration Limits

Location: Perimeter boreholes and measured in any building or enclosed structure on or adjacent to the installation.

Methane	Carbon Dioxide
20% LEL (1% v/v)	1.5% (v/v)

B.2 Emissions to Water

Emission Point Reference No: SW9
SW10

Name of Receiving Waters: Knockharley Stream (Flemingstown River, IE_EA_08F050930 /08_226)

Location: SW9 (297587E, 266621N)
SW10 (To be determined)

Volume to be emitted:

SW9 Maximum in any one day:	24,581 m^3
SW9 Maximum in any one hour:	1,024 m^3
SW10 Maximum in any one day:	22,032 m^3
SW10 Maximum in any one hour:	918 m^3

Parameter	Emission Limit Value	
pH	6.0 – 9.0	
Toxicity	10 TU	
	SW9 Emission Limit Value mg/l	SW10 Emission Limit Value mg/l
BOD	2.6	2.6
Total Suspended Solids	15	25 Note 1
Total Ammonia (as N)	0.14	0.14
Orthophosphate (as P)	0.075	0.075
Arsenic Note 2	0.025	0.025
Cadmium Note 3	0.0009	0.0009
Chromium III	0.032	0.032
Chromium VI Note 2	0.0034	0.0034
Copper Note 2	0.03	0.03
Lead Note 3	0.014	0.014
Nickel Note 3	0.034	0.034
Mercury Note 3	0.00007	0.00007
Zinc Note 2	0.1	0.1
Sulphate	400	400

Note 1: During the establishment of the constructed wetland, a higher limit of 35 mg/L for Total Suspended Solids may apply to emission point SW10 for one year following initial discharge, unless otherwise approved by the Agency.
Note 2: The arithmetic mean of the concentrations measured over a 12 month monitoring period shall not exceed the ELV.
Note 3: In the case of cadmium, lead, mercury and nickel, the ELV refers to the dissolved concentration i.e. the dissolved fraction of a water sample obtained by filtration through a 0.45 µm filter or any equivalent pre-treatment. All other metals are expressed as total concentrations in the whole water sample.

B.3 Noise Emissions

Daytime dB $L_{Ar,T}$ (30 minutes)	Evening time dB $L_{Ar,T}$ (30 minutes)	Night-time dB $L_{Aeq,T}$ (30 minutes) Note 1
55	50	45

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at the installation boundary and any noise-sensitive location.

B.4 Dust Limits

B.4.1 Ambient Dust Deposition Limit

Location: D1 (297278E, 267774N),
D2 (297744E, 267560N),
D3 (297831E, 267285N),
D4 (297648E, 266862N),
D5 (297030E, 267194N),
D6 (296964E, 267575N),
D7 (297587E, 266678N),
D8 (298081E, 267565N),
and any other location as approved by the Agency.

Parameter	Limit Value Note 1
Total Dust Deposition	350 mg/m^2/day

Note 1: 30-day composite sample with the results expressed as mg/m^2/day, measured at the monitoring locations or any dust sensitive location.

B.4.2 PM_{10} Limit

Location: D1 (297030E, 267909N),
D2 (297833E, 267591N),
D3 (297656E, 266894N),
D4 (297656E, 266630N),
D5 (297035E, 267170N),
D6 (298454E, 267576N),
and any other located as approved by the Agency.

Parameter	Limit Value Note 1
PM_{10}	50 µg/m^3

Note 1: Limit value for the protection of human health (one day averaging period), as per S.I. No. 180/2011 or subsequent amendments, measured at the monitoring locations or any dust sensitive location.

B.5 Treated Leachate Limits

Emission Point Reference No: Tank outlet, for each treated leachate stream, as approved by the Agency [Note 1] (Grid reference to be determined)

Location: Leachate Treatment Plant (as per Drawing LW14-821-01-P-0600-001)

Parameter	Emission Limit Value [Note 2, Note 3, Note 4] mg/l
Lead	0.06

Note 1: Leachate streams from IBA waste, SNRHW, stabilised and inert waste, and non-stabilised waste shall be collected, stored and treated separately, prior to removal off-site to an authorised facility for disposal.

Note 2: The ELV shall apply to the treated IBA waste stream only in accordance with CID 2019/2010, unless otherwise required by the Agency.

Note 3: Subject to the Agency's approval, the limit may not apply if the receiving waste water treatment plant is designed and equipped appropriately to abate the pollutant concerned, provided this does not lead to a higher level of pollution in the environment.

Note 4: For continuous discharges, ELV applies to 24-hour flow proportional composite samples. For batch discharges, average values over the release duration taken as flow-proportional composite samples, or, provided that the effluent is appropriately mixed and homogeneous, a spot sample taken before discharge.

SCHEDULE C: Control and Monitoring

C.1.1 Control of Emissions to Air

Emission Point Reference No: A2-1, A2-2, A2-3, A2-4, A2-5, A2-6, A2-7
Description of Treatment: Landfill gas extraction and utilisation /flaring

Control Parameter	Monitoring	Key Equipment [Note 1, Note 2]
Extraction	Continuous with alarm/call out	Pumps & pressure gauges
Biogas Desulphurization	Continuous with alarm/call out	Biological Reactor
Gas Temperature	Continuous with alarm/call out	Temperature probe /Thermocouple
Gas Pressure	Continuous with alarm/call out	Pressure gauge
Inlet Gas Flow rate	Continuous with alarm/call out	Flow Monitor
Methane (CH_4) % v/v	Continuous with alarm/call out	Gas analyser
Carbon Dioxide (CO_2) % v/v	Continuous with alarm/call out	Gas analyser
Oxygen (O_2) % v/v	Continuous with alarm/call out	Gas analyser
Continuous burn	Continuous with alarm/call out	Flame detector

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

Note 2: Other equivalent key equipment as may be required and approved by the Agency.

C.1.2 Monitoring of Emissions to Air

Emission Point Reference No: A2-1, A2-2, A2-3, A2-4 (Landfill Gas Utilisation Plant)
A2-5, A2-6, A2-7 (Landfill Gas Flares)

Parameter Note 1	**Utilisation Plant** **Monitoring Frequency**	**Gas Flares** **Monitoring Frequency**	**Analysis Method/Technique** Note 2, Note 3
Inlet			
Gas Flow Rate	Continuous	Continuous	Standard Method
Methane (CH_4) % v/v	Weekly	Continuous	Standard Method
Carbon Dioxide (CO_2) % v/v	Weekly	Continuous	Standard Method
Oxygen (O_2) % v/v	Weekly	Continuous	Standard Method
Total Sulphur	Annually	Annually	Standard Method
Total Chlorine	Annually	Annually	Standard Method
Total Fluorine	Annually	Annually	Standard Method
Process Parameters			
Combustion Temperature	Quarterly	Continuous	Temperature probe /data logger
Outlet			
Volumetric Flow	Annually	Annually	Standard Method
Sulphur Dioxide	Annually	Annually	Standard Method
Nitrogen Oxides (as NO_2)	Annually	Annually	Standard Method
Particulates	Annually	Not Applicable	Standard Method
Carbon Monoxide	Continuous	Continuous	CO Monitor
TA Luft Organics Class I, II, III	Annually	Not Applicable	CEN/TS 13649 /Standard Method Note 4
Total Volatile Organic Carbon	Annually	Annually	EN 12619 /Standard Method
Hydrogen Chloride	Annually	Annually	Standard Method
Hydrogen Fluoride	Annually	Annually	Standard Method

Note 1: Other parameters as may be required by the Agency.
Note 2: All monitoring equipment used should be intrinsically safe.
Note 3: Or other methods agreed in advance with the Agency.
Note 4: Refer to EPA Air Emissions Monitoring Guidance Note (AG2) for monitoring requirements related to organic gases.

C.1.3 Monitoring of Landfill Gas Emissions

Locations: [Note 1]

Landfill Gas Perimeter Monitoring Boreholes [Note 2]
In-waste Gas Monitoring Boreholes [Note 3]
Site office & other buildings & enclosed structures at the Installation [Note 4]

Parameter	Monitoring Frequency	Analysis Method/Technique [Note 5, Note 6]
Methane (CH_4) % v/v	Monthly	Standard Method
Carbon Dioxide (CO_2) % v/v	Monthly	Standard Method
Oxygen (O_2) % v/v	Monthly	Standard Method
Hydrogen [Note 7]	Monthly	Standard Method
Atmospheric Pressure	Monthly	Standard Method
Temperature	Monthly	Standard Method

Note 1: The licensee shall maintain an appropriately sized and referenced Drawing, along with 12 digit national grid references for all of the above monitoring points. The Drawing shall be udpated with the phased development of cells.
Note 2: Perimeter monitoring boreholes at 50m intervals.
Note 3: Minimum of two monitoring boreholes per cell. Installation of monitoring boreholes and monitoring of cells containing SNRHW shall be dependent on the risk assessment carried out, as per Condition 3.41.7.
Note 4: Methane and carbon dioxide monitoring at a minimum utilising continous monitors.
Note 5: All monitoring equipment used should be intrinsically safe.
Note 6: Or other methods agreed in advance with the Agency.
Note 7: Around perimeter of IBA cells and in-waste gas monitoring boreholes of IBA cells.

C.1.4 Monitoring of Ambient Odour

Locations:

On-site and/or off-site locations to be agreed by the Agency & any location of an odour complaint [Note 1].

Parameter	Monitoring Frequency	Analysis Method/Technique
Odour	Daily	AG5 [Note 2]
Odour	Continuous	Electronic odour detection /monitoring technology

Note 1: AG5 to be used in the event of an odour complaint and electronic odour device if mobile, as per Condition 6.16.3.
Note 2: EPA Air Guidance Note 5 (AG5) Odour Impact Assessment Guidance for EPA Licensed Sites, as amended.

C.1.5 Monitoring of Ambient TVOC

Locations:

On-site and/or off-site locations to be approved by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
TVOC	Continuous [Note 1]	Standard Method

Note 1: Other frequency as approved by the Agency.

C.2.1 Control of Emissions to Water

Emission Point Reference No: SW9, SW10
Description of Treatment: Constructed Wetlands

Control Parameter	Monitoring	Key Equipment [Note 1]
Flow and flow patterns	Continuous for discharge flow on SW10 and flow between ponds and wetland. Continuous for SW9 on pond inlet. Daily visual inspection for flow and flow patterns in the ponds and wetland.	Flow meters Flow regulators Shut-off valve at wetland discharge on SW10 and wetland inlet at SW9 Isolation valves between ponds and between ponds and wetlands
Bank inspection, water depth, turbidity in final segments	Weekly	Visual inspection and appropriate measuring equipment
Sediment depth, vegetation and invertebrate monitoring	Quarterly	Visual inspection and appropriate measuring/monitoring equipment
Sediment composition: heavy metals	Biannually for two years and annually every three years thereafter Prior to sediment removal [Note 2]	Appropriate sampling equipment

Note 1: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.
Note 2: The sediment shall be sampled and analysed for other parameters if required by the Agency.

C.2.2 Monitoring of Emissions to Water

Emission Point Reference No: SW9, SW10

Parameter [Note 1]	Monitoring Frequency SW9 [Note 2]	Monitoring Frequency SW10 [Note 2]	Key Equipment/Technique [Note 8]
Visual Inspection/Odour [Note 3]	Daily	Daily	Sample and examine for colour, odour and appearance.
Flow [Note 4]	Continuous	Continuous	On-line flow meter with recorder
Temperature	Continuous	Continuous	On-line temperature probe with recorder
pH	Continuous	Continuous	pH electrode/meter with recorder
Total Organic Carbon	Continuous	Continuous	On-line TOC meter with recorder
Electrical Conductivity	Continuous	Continuous	On-line conductivity probe with recorder
Turbidity	As may be required	Continuous	On-line turbidity meter with recorder
Dissolved Oxygen	Quarterly	Quarterly	Dissolved oxygen probe
Chemical Oxygen Demand	Quarterly	Monthly	Standard Method
Biochemical Oxygen Demand	Quarterly	Monthly	Standard Method
Total Suspended Solids	Quarterly	Monthly	EN 872
Total Dissolved Solids	Quarterly	Monthly	Standard Method
Total Petroleum Hydrocarbons	Quarterly	Quarterly	Standard Method
Sulphate	Quarterly	Monthly	EN ISO 10304-1

Chloride	Quarterly	Monthly	Standard Method
Ammoniacal Nitrogen (as N)	Quarterly	Quarterly	Standard Method
Total Ammonia (as N)	Quarterly	Quarterly	Standard Method
Total Oxidised Nitrogen (as N)	Annually	Annually	Standard Method
Total Phosphorus	Annually	Quarterly	Standard Method
Orthophosphate (as P)	Annually	Quarterly	Standard Method
Metals: Aluminium, Arsenic, Boron, Cadmium, Calcium, Chromium III, Chromium VI, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Sodium, Zinc	Annually	Monthly	Standard Method
PCDD/F (Polychlorinated dibenzo-p-dioxins and -furans)	Annually	Annually	Standard Method
PFAS (Per- and polyfluoroalkyl substances)	Annually	Annually	Standard Method
Total Alkalinity (as $CaCO_3$)	Annually	Annually	Standard Method
Organic Compounds [Note 5]	As may be required	Annually	Standard Method
Priority Substances [Note 6]	Annually	Annually	Standard Method
Toxicity [Note 7]	As may be required	As may be required	To be agreed by the Agency

Note 1: Other parameters as may be required by the Agency.

Note 2: The licensee shall install a composite sampler at emission point reference SW10 prior to discharge occurring. A composite sampler shall also be installed at emission point reference SW9, unless otherwise approved by the Agency. All samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis, unless the Standard Method determines otherwise.

Note 3: Where there is evidence of pollution, samples should be taken for analysis for all table parameters.

Note 4: Total effluent discharged over the 24-hour period in which the composite sample is collected shall be recorded.

Note 5: Screening for priority pollutant list substances (such as US EPA volatile and/or semi-volatile compounds). This analysis shall have regard to EPA Landfill Manuals - Landfill Monitoring and leachate analysis and monitoring.

Note 6: The relevant priority substances or pollutants for monitoring shall be identified by the licensee by undertaking a risk-based assessment. The licensee shall have regard to "Guidance on the Screening for Priority Substances for Waste Water Discharge Licences" issued by the Agency.

Note 7: The number of toxic units (Tu) = 100/x hour EC/LC_{50} in percentage vol/vol so that higher Tu values reflect greater levels of toxicity. For test regimes where species death is not easily detected, immobilisation is considered equivalent to death.

Note 8: Or other methods agreed in advance with the Agency. If EN standards are not available, use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

C.2.3 Receiving Water Monitoring

Monitoring Point Reference No: SW1 (296706E, 267600N),
SW2 (297464E, 267862N),
SW3 (298087E, 267634N),
SW5 (297764E, 267116N),
SW6 (297663E, 266562N),
SW7 (297510E, 266525N),
SW8 (297916E, 266029N)

Parameter [Note 1]	Monitoring Frequency	Key Equipment/Technique [Note 5]
Visual Inspection/Odour [Note 2]	Weekly	Sample and examine for colour, odour and appearance.
Temperature	Quarterly	Temperature probe
pH	Quarterly	pH electrode/meter
Electrical Conductivity	Quarterly	Conductivity probe
Dissolved Oxygen	Quarterly	Dissolved oxygen probe
Chemical Oxygen Demand	Quarterly	Standard Method
Biochemical Oxygen Demand	Quarterly	Standard Method
Total Suspended Solids	Quarterly	EN 872
Sulphate	Quarterly	EN ISO 10304-1
Chloride	Quarterly	Standard Method
Ammoniacal Nitrogen (as N)	Quarterly	Standard Method
Total Oxidised Nitrogen (as N)	Annually	Standard Method
Total Phosphorus	Annually	Standard Method
Orthophosphate (as P)	Annually	Standard Method
Metals: Aluminium, Arsenic, Boron, Cadmium, Calcium, Chromium (Total), Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Sodium, Zinc	Annually	Standard Method
Total Alkalinity (as $CaCO_3$)	Annually	Standard Method
Organic Compounds [Note 3]	As may be required	Standard Method
Priority Substances [Note 4]	As may be required	Standard Method

Note 1: Other parameters as may be required by the Agency.
Note 2: Where there is evidence of pollution, samples should be taken for analysis for all table parameters.
Note 3: Screening for priority pollutant list substances (such as US EPA volatile and/or semi-volatile compounds). This analysis shall have regard to EPA Landfill Manuals - Landfill Monitoring and leachate analysis and monitoring.
Note 4: The relevant priority substances or pollutants for monitoring shall be identified by the licensee by undertaking a risk-based assessment. The licensee shall have regard to "Guidance on the Screening for Priority Substances for Waste Water Discharge Licences" issued by the Agency.
Note 5: Or other methods agreed in advance with the Agency. If EN standards are not available, use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

C.2.4 Receiving Water Biological Monitoring

Location: Surface Water Locations Upstream and Downstream of the Installation [Note 1]
Any other location required or approved by the Agency

Parameter	Monitoring Frequency	Analysis Method/Techniques
Biological Quality (Q) Rating	Annually [Note 2]	To be agreed by the Agency

Note 1: The biological assessment is to be carried out at a minimum of two locations upstream of the installation and two locations downstream of the installation.
Note 2: Monitoring period – June to September, unless otherwise approved by the Agency.

C.3 Noise Monitoring

Location [Note 1]	Measurement [Note 2]	Frequency
N1 (297290 E, 267999 N) **N2 (297901 E, 267565 N)** **N3 (297858 E, 267207 N)** **N4 (296921 E, 267882 N)** **N5 (297862 E, 267959 N)** **N6 (298069 E, 266882 N)** **And at any additional location required or approved by the Agency.**	$L_{Ar,T}$ $L_{Aeq,T}$ L_{A10} [30 minutes] L_{A90} [30 minutes] 1/3 Octave Band Analysis	Quarterly
Period	**Minimum Survey Duration**	
Daytime	A minimum of 3 sampling periods at each noise monitoring location [Note 2]	
Evening-time	A minimum of 1 sampling period at each noise monitoring location.	
Night-time [Note 3]	A minimum of 2 sampling periods at each noise monitoring location.	

Note 1: Monitoring locations N1 to N4 as per Drawing No. LW14-821-01-P-0050 and monitoring locations N5 & N6 as per Drawing No. LW14-821-01-P-0050-002 (both Drawing dated 10.07.18) of the application.
Note 2: Sampling period is to be the time period T stated as per *Schedule B.3 Noise Emissions,* of this licence. This applies to day, evening and night time periods.
Note 3: Night-time measurements should be made between 23:00hrs and 04:00hrs, Sunday to Thursday, with 23:00hrs being the preferred start time.

C.4 Ambient Air Monitoring

Location: Monitoring locations as specified in *Schedule B.4 Dust Limits,* of this licence or at alternative monitoring location(s) approved by the Agency.

Parameter	Monitoring Frequency	Analysis Method/Technique
Dust deposition	Monthly	VDI 2119 (Bergerhoff Method)
PM_{10}	Annually	Standard Method

C.5 Groundwater Monitoring

Monitoring Point Reference No:

MW1D (296689E, 267649N),
MW2D (297191E, 267988N),
MW3D (297562E, 267742N),
MW5D (297712E, 267102N),
MW6D (297377E, 266718N),
MW7D (297054E, 266875N),
MW16D (297678E, 264143N),
MW17D (297833E, 267424N),
MW18D (297678E, 267190N),
MW19D (297646E, 266580N)

or alternative monitoring location(s) approved by the Agency.

Parameter [Note 1]	Monitoring Frequency [Note 5]	Analysis Method/Techniques
Groundwater Level	Monthly	Standard Method
Visual Inspection/Odour [Note 2]	Quarterly	Sample and examine for colour, odour and appearance.
pH	Quarterly	pH electrode/meter
Dissolved Oxygen	Quarterly	Standard Method
Electrical Conductivity	Quarterly	Standard Method
Nitrate	Biannually	Standard Method
Ammonium	Biannually	Standard Method
Visual Inspection/Odour	Quarterly	Standard Method
Ammoniacal Nitrogen	Quarterly	Standard Method
COD	Biannually	Standard Method
Total Nitrogen	Biannually	Standard Method
Dissolved Oxygen	Quarterly	Standard Method
Chloride	Quarterly	Standard Method
Temperature	Monthly	Standard Method
Boron	Annually	Standard Method
Cadmium	Annually	Standard Method
Calcium	Annually	Standard Method
Chromium (Total)	Annually	Standard Method
Copper	Annually	Standard Method
Cyanide (Total)	Annually	Standard Method
Arsenic	Annually	Standard Method
Fluoride	Annually	Standard Method
Iron	Quarterly	Standard Method
Lead	Annually	Standard Method
Magnesium	Annually	Standard Method
Manganese	Annually	Standard Method

Mercury	Annually	Standard Method
Nickel	Annually	Standard Method
Potassium	Annually	Standard Method
Sulphate	Annually	Standard Method
Sodium	Quarterly	Standard Method
Total Alkalinity	Annually	Standard Method
Total Phosphorous	Annually	Standard Method
Orthophosphate	Annually	Standard Method
Relevant Hazardous Substances Note 3	Quarterly	Standard Method
Total Oxidised Nitrogen	Quarterly	Standard Method
Total Organic Carbon	Quarterly	Standard Method
Residue on evaporation	Annually	Standard Method
Zinc	Annually	Standard Method
Phenols	Quarterly	Standard Method
Faecal Coliforms	Quarterly	Standard Method
Total Coliforms Note 4	Quarterly	Standard Method

Note 1: Other parameters as may be required by the Agency.

Note 2: Where there is evidence of pollution, samples should be taken for analysis for all table parameters.

Note 3: The relevant hazardous substances for monitoring in groundwater shall be identified by the licensee by undertaking a risk-based assessment. The licensee shall have regard to the 'Classification of Hazardous and Non-hazardous Substances in Groundwater' issued by the Agency.

Note 4: In the case where groundwater is extracted for drinking water, if there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal coliforms and streptococci.

Note 5: Subject to owners' approval, all private wells within 1Km of the landfill footprint shall be analysed annually for ammoniacal N, K, Na, pH, electrical conductivity, TOC, and other parameters as may be required, unless otherwise approved by the Agency. A written report and interpretation shall accompany the analysis results.

C.6 Monitoring of Leachate

Locations:

Each Landfill Cell [Note 1]
Each Leachate Storage Lagoon
Any other location required or approved by the Agency

Parameter [Note 2]	Monitoring Frequency	Key Equipment/Technique [Note 6]
Leachate Level	Daily	Standard Method
Temperature	Quarterly	Temperature probe
pH	Quarterly	pH electrode/meter
Electrical Conductivity	Quarterly	Conductivity probe
Chemical Oxygen Demand	Quarterly	Standard Method
Biochemical Oxygen Demand	Quarterly	Standard Method
Total Petroleum Hydrocarbons	Quarterly	Standard Method
Sulphate	Quarterly	EN ISO 10304-1
Chloride	Quarterly	Standard Method
Ammoniacal Nitrogen (as N)	Quarterly	Standard Method
Total Ammonia (as N)	Quarterly	Standard Method
Total Oxidised Nitrogen (as N)	Quarterly	Standard Method
Total Phosphorus	Annually	Standard Method
Orthophosphate (as P)	Annually	Standard Method
Metals: Aluminium, Arsenic, Boron, Cadmium, Calcium, Chromium III, Chromium VI, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Sodium, Zinc	Annually	Standard Method
PCDD/F (Polychlorinated dibenzo-p-dioxins and -furans)	Annually	Standard Method
PFAS (Per- and polyfluoroalkyl substances	Annually	Standard Method
Cyanide (Total)	Annually	Standard Method
Fluoride	Annually	Standard Method
Total Alkalinity (as $CaCO_3$) [Note 3]	Annually	Standard Method
Organic Compounds [Note 4]	As may be required	Standard Method
Priority Substances [Note 5]	As may be required	Standard Method
Total Coliforms	As may be required	Standard Method

Note 1: Can be interpreted as all cells without final capping unless otherwise required by the Agency.
Note 2: Other parameters as may be required by the Agency.
Note 3: Only to be analysed in instances of on-site treatment of leachate.
Note 4: Screening for priority pollutant list substances (such as US EPA volatile and/or semi-volatile compounds). This analysis shall have regard to EPA Landfill Manuals - Landfill Monitoring and leachate analysis and monitoring.
Note 5: The relevant priority substances or pollutants for monitoring shall be identified by the licensee by undertaking a risk-based assessment. The licensee shall have regard to "Guidance on the Screening for Priority Substances for Waste Water Discharge Licences" issued by the Agency.

Note 6: Or other methods agreed in advance with the Agency. If EN standards are not available, use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

C.7.1 Control of Treated Leachate

Emission Point Reference No: Tank outlet, for each treated leachate stream, as approved by the Agency [Note 1] (Grid reference to be determined)

Description of Treatment: Physical/chemical treatment

Control Parameter [Note 1]	Monitoring [Note 1]	Key Equipment [Note 1, Note 2]
To be agreed by the Agency	To be agreed by the Agency	To be agreed by the Agency

Note 1: Control parameters, monitoring and key equipment required to be proposed to the Agency for approval following final design and prior to commencement of treatment on-site.

Note 2: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the abatement system.

C.7.2 Monitoring of Treated Leachate

Monitoring Point: Tank outlet or sample point, for each treated leachate stream, as approved by the Agency [Note 1]

Location: Leachate Treatment Plant (as per Drawing LW14-821-01-P-0600-001)

Parameter [Note 2, Note 3]	Monitoring Frequency	Key Equipment/Technique [Note 5]
Flow [Note 4]	Continuous	On-line flow meter with recorder
pH	Continuous	On-line pH electrode/meter with recorder
Electrical Conductivity	Continuous	On-line conductivity probe with recorder
Total Alkalinity (as $CaCO_3$)	Monthly	Standard Method
Total Organic Carbon	Monthly	EN 1484
Total Suspended Solids	Monthly	EN 872
Sulphate	Monthly	EN ISO 10304-1
Chloride	Monthly	EN ISO 10304-1 /EN ISO 15682
Lead	Monthly	EN ISO 11885 /EN ISO 15586 /EN ISO 17294-2)
Ammonium (as N)	Monthly	EN ISO 11732 /EN ISO 14911
PCDD/F (Polychlorinated dibenzo-p-dioxins and -furans)	Biannually	Standard Method

Note 1: Leachate streams from IBA waste, SNRHW, stabilised and inert waste, and non-stabilised waste shall be collected, stored, and treated separately, prior to removal off-site to an authorised facility for disposal, unless otherwise approved by the Agency. The monitoring table above may apply to leachate from IBA waste only in accordance with CID 2019/2010, on approval by the Agency.

Note 2: Other parameters as may be required by the Agency or Uisce Éireann.

Note 3: The licensee shall install a composite sampler on treated effluent prior to discharge occurring, unless otherwise approved by the Agency. Excluding continuous monitoring, all samples thereafter shall be collected on a 24-hour flow proportional composite sampling basis, unless the standard method determines otherwise. For batch discharges, flow-proportional composite samples shall

be collected, or, provided that the treated stream is appropriately mixed and homogeneous, a spot sample can be taken before discharge.

Note 4: Total effluent discharged over the 24-hour period in which the composite sample is collected shall be recorded.

Note 5: Or other methods agreed in advance with the Agency. If EN standards are not available, use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.

C.8.1 Control of Emissions to Sewer

There shall be no effluent emissions to sewer.

C.8.2 Monitoring of Emissions to Sewer

There shall be no effluent emissions to Sewer.

C.9 Soil Monitoring

Locations: To be approved by the Agency prior to sampling

Parameter	Monitoring Frequency	Analysis Method/Techniques
Relevant hazardous Substances [Note 1]	Within 12 months from date of grant of licence and every ten years thereafter	Standard Method

Note 1: Soil monitoring for relevant hazardous substances shall be in accordance with Condition 6.20 of this licence.

C.10 Waste Monitoring

Waste Class	Frequency	Parameter [Note 1]	Method
Bio-stabilised residual waste	Every 500 tonnes from each source [Note 1]	Respiration activity [Note 2] after 4 days	To be agreed by the Agency
Non-stabilised waste	To be agreed by the Agency	To be agreed by the Agency	To be agreed by the Agency
Stabilised waste	To be agreed by the Agency	To be agreed by the Agency	To be agreed by the Agency
Inert waste	To be agreed by the Agency	To be agreed by the Agency	To be agreed by the Agency
Baled Recyclables	Monthly	Available storage capacity	On-site storage
Baled MSW	Monthly	Available storage capacity	On-site storage
IBA	Every 500 tonnes from each source [Note 1]	To be agreed by the Agency	To be agreed by the Agency
SNRHW	To be agreed by the Agency	To be agreed by the Agency	To be agreed by the Agency

Note 1: Analytical requirements to be determined on a case-by-case basis.

Note 2: With the exception of repatriated and unauthorised landfill waste, which it may not be possible to treat before deliver to the installation, only pre-treated waste is accepted for disposal. The stabilised organic fines must meet the AT4 limit of <7 mg O2/g DM.

C.11 Meteorological Monitoring

Location: [Note 1] On-site meteorological station (Grid reference to be determined)

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration	Daily	Standard
Humidity	Daily	Standard
Atmospheric Pressure	Daily	Standard

Note 1: The location of the on-site meteorological station shall be in accordance with advice from Met Eireann and agreed in advance with the Agency in the event of a relocation.

SCHEDULE D: Annual Environmental Report

Annual Environmental Report Content [Note 1 & 2]
Environment Management objectives and targets summary.
Energy and water use and generation summary.
Complaints summary.
Incidents Summary.
Emissions Summary.
Waste Management Summary.
Any other items specified by the Agency.

Note 1: Content may be revised subject to the agreement of the Agency.
Note 2: The AER shall be completed in accordance with current Agency guidance

SCHEDULE E: Specified Engineering Works

Specified Engineering Works
Development of the installation including preparatory works.
IBA cell formation including formation levels.
Landfill cell lining.
Liner system for each additional leachate storage lagoon.
Liner system for northern surface water holding pond, attenuation pond and constructed wetland.
Installation of northern surface water management plant and constructed wetland including formation design.
Installation of leachate storage lagoons including formation design.
Installation of Landfill Gas Management Infrastructure, including passive gas management systems.
Installation of Leachate Management Infrastructure.
Installation of Leachate Treatment Infrastructure.
Installation of Groundwater Control Infrastructure.
Installation of IBA Storage and Treatment Infrastructure.
Installation of Solar Panels.
Installation of Surface Water Management Infrastructure.
Installation of new equipment for treatment of emissions to air.
Installation of new equipment for treatment of emissions to water.
Installation of new equipment for treatment of leachate.
Construction of new buildings, roofs or enclosures.
Construction of berms.
Final capping.
Any other works notified in writing by the Agency.

Sealed by the seal of the Agency on this the 16th day of May 2023.

PRESENT when the seal of the Agency
Was affixed hereto:

Ray Cullinane

Ray Cullinane, Authorised Person