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Waste Licence Recommended Decision

Licence Register Number:	W0062-02
Licensee:	Donegal County Council
Location of facility	Churchtown Landfill Churchtown Lifford County Donegal

INTRODUCTION

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

The facility comprises a closed capped landfill with an integrated constructed wetlands system and willow bed installed on top of the landfill. The willow bed and integrated constructed wetlands treat leachate generated by the landfill.

The landfill was capped in 2014.

This licence authorises Donegal County Council to operate the integrated constructed wetlands systems and the willow bed, and to discharge the treated leachate from the integrated constructed wetlands and willow bed to the adjacent waterbody, the River Finn.

The licence sets out in detail the conditions under which Donegal County Council will operate and manage this facility.

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Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Act 1996 as amended, unless otherwise defined in the section.

Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Approval	Approval in writing/electronically.
Annually	At approximately twelve-monthly intervals.
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.
Biannually	At approximately six – monthly intervals.
Biennially	Once every two years.
BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
CBOD	5 day Carbonaceous Biochemical Oxygen Demand (with nitrification suppression).
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
COD	Chemical Oxygen Demand.

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.
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
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.
Day	Any 24 hour period.
Daytime	0700hrs to 1900hrs.
dB(A)	Decibels (A weighted).
Diffuse Emissions	Non-channelled emissions which can result from 'area' sources (e.g. tanks) or 'point' sources (e.g. pipe flanges).
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.
Emission limits	Those limits, including concentration limits and deposition rates, established in <i>Schedule B: Emission Limits</i> , of this licence.
EMP	Environmental Management Programme.
Environmental damage	As defined in Directive 2004/35/EC.

EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC, as amended by Commission Decision 2014/955/EU and any subsequent amendment published in the Official Journal of the European Community.
Evening Time	1900hrs to 2300hrs.
Facility	Any site or premises used for the purpose of the recovery or disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
GC/MS	Gas chromatography/mass spectroscopy.
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.
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.
Hours of operation	The hours during which the facility is authorised to be operational.
ICP	Inductively coupled plasma spectroscopy.

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 exceedance of the daily duty capacity of the waste handling equipment; (v) any trigger level specified in this licence which is attained or exceeded; (vi) any compliance value specified in this licence which is attained or exceeded; and, (vii) any indication that environmental pollution has, or may have, taken place.
Industrial waste	As defined in Section 5(1) of the Waste Management Act 1996 as amended.
IPC	Integrated Pollution Control.
Irish Water	Irish Water, Colvill House, 24/26 Talbot Street, Dublin 1
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 Directive	Council Directive 1999/31/EC.
L_{Af,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.
Licensee	Donegal County Council, County House, Lifford, County Donegal.
Liquid waste	Any waste in liquid form and containing less than 2% dry matter.
Local Authority	Donegal County Council.

Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to 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.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
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 facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
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	At approximately three – monthly intervals.
SAC	Special Area of Conservation designated under the <i>Habitats Directive</i> , 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 facility toilet, washroom and canteen facilities.

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 <i>Schedule B: Emission Limits</i> , of this licence.
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.
Storm water	Rain water run-off from roof and non-process areas.
The Agency	Environmental Protection Agency.
TOC	Total organic carbon.
Trade effluent	Trade effluent has the meaning given in the Water Services Act, 2007.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Water Services Authority	Donegal 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.
WWTP	Waste water treatment plant.

Decision & 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 40(4) of the Waste Management Act 1996 as amended.

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

The Agency accordingly proposes to grant a licence to Donegal County Council 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: W0062-01.

In reaching this decision the Agency has considered the documentation relating to the existing licence, Register Number: W0062-01, the review application, Register Number: W0062-02 and the supporting documentation received from the applicant; the Inspector's Report dated **08 October 2020** and has carried out an Appropriate Assessment of the likely significant effects of the activities on European Sites.

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 Site(s) at River Finn SAC (Site Code: 002301) and River Foyle and Tributaries NISAC (Site Code: UK0030320).

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, and for this reason determined to require the applicant to submit a Natura Impact Statement.

The Appropriate Assessment was considered necessary because there is a discharge of treated landfill leachate directly into the adjacent River Finn SAC (Site Code: 002301) and River Foyle and Tributaries NISAC (Site Code: UK0030320).

The Agency has completed the Appropriate Assessment of potential impacts on these site(s) 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 Finn SAC (Site Code: 002301) and River Foyle and Tributaries NISAC (Site Code: UK0030320) 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:

- The RD requires the licensee to meet emission limit values set in Schedule B.2 Emission to Water for D1, D2, D3, and D4 to ensure that the discharges will not negatively impact water quality and ensure the continued protection of water-dependent species. A continued monitoring programme of water quality is required to monitor the quality of treated leachate to the River Finn;

- The licence applies measure for the control and effective operation of the integrated constructed wetland systems and the SRC willow bed.

The Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Site(s) River Finn SAC (Site Code: 002301) and River Foyle and Tributaries NISAC (Site Code: UK0030320).

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Act 1996 as amended, the Environmental Protection Agency (the Agency) proposes, under Section 46(8) of the said Acts to grant this Waste Licence to Donegal County Council, County House, Lifford, Co. Donegal to carry on the waste activity/activities listed below at Churchtown Landfill, Churchtown, Lifford, Co. Donegal subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence. For the purpose of Article 48 of the Waste Management Licensing Regulations 2004 (S.I. No 395) this facility is classed as a non-hazardous waste landfill.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act 1996 as amended

Class D 1.	Deposit into or on to land (e.g. including landfill, etc.).
Class D 4.	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.). [Principal Activity]
Class D 15	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of “collection” in section 5(1), pending collection on the site where the waste is produced.

Part II Schedule of Activities Refused

None of the activities as set out in the licence application have been refused.

Part III Conditions

Condition 1. Scope

- 1.1 Waste activities at this facility 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 1.4 of this licence and subject to the conditions of this licence.
- 1.2 The licensee shall carry on the licensed activity in accordance with the limitations set out in *Schedule A: Limitations* of this licence.
- 1.3 For the purposes of this licence, the facility authorised by this licence is the area of land outlined in red on Drawing No. IBR1015/101 of the application. Any reference in this licence to “facility” shall mean the area thus outlined in red. The licensed activity shall be carried on only within the area outlined.
- 1.4 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.
- 1.5 The facility shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.
- 1.6 This licence is for purposes of waste licensing under the Waste Management Act 1996 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.
- 1.7 This licence shall have effect in lieu of the licence granted on 19 May 2000 (Register No W0062-01).

Reason: <i>To clarify the scope of this licence.</i>

Condition 2. Management of the Facility

2.1 Facility Management

- 2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy shall be **available to be contacted in relation to** the facility 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) within six months of the date of grant of this licence. The EMS shall be updated on an annual basis.

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

2.2.2.1 Management and Reporting Structure.

2.2.2.2 Schedule of Environmental Objectives and Targets

The licensee shall maintain and implement a Schedule of Environmental Objectives and Targets. The Schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, reduction in water consumption, the use of cleaner technology, cleaner production, odour and noise management, and the prevention, reduction and minimisation of waste and shall include waste reduction targets. 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.

2.2.2.3 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 2.2.2.2. The EMP shall include:

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

The EMP shall be reviewed annually.

A report on the programme, including the success in meeting agreed targets, 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.

2.2.2.4 Documentation

- (i) The licensee shall maintain and implement an environmental management documentation system which shall be to the satisfaction of the Agency.
- (ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.2.2.5 Corrective Action

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

2.2.2.6 Awareness and Training

The licensee shall maintain and implement procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.2.2.7 Communications Programme

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 facility, at all reasonable times, concerning the environmental performance of the facility.

2.2.2.8 Maintenance Programme

The licensee shall maintain 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).

2.2.2.9 Efficient Process Control

The licensee shall maintain and implement a programme to ensure there is 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.

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 after the grant of this licence, 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 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 eventual decommissioning.
- 3.3 The licensee shall establish and maintain, for each component of the facility, 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 the licence, shall be installed in accordance with the schedule submitted in the application.
- 3.4 Facility Notice Board
- 3.4.1 The licensee shall provide a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm. The notice board shall be maintained thereafter.
- 3.4.2 The board shall clearly show:
- (i) the name and telephone number of the facility;
 - (ii) the normal hours of opening/operation;
 - (iii) the name of the licence holder;
 - (iv) an emergency out of hours contact telephone number;
 - (v) the licence reference number; and
 - (vi) where environmental information relating to the facility can be obtained.
- 3.5 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.
- 3.6 In the case of composite sampling of aqueous emissions from the operation of the facility, 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.
- 3.7 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.
- 3.8 Tank, Container and Drum Storage Areas
- 3.8.1 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' (2004).
- 3.8.2 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.

- 3.8.3 All drainage from bunded areas shall be treated as contaminated unless it can be demonstrated to be otherwise. 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 storm water emissions under Condition 6.14 of this licence.
- 3.8.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.8.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.
- 3.8.6 All bunds shall be uniquely identified and labelled at the bund.
- 3.9 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 facility. Once used, the absorbent material shall be disposed of at an appropriate facility.
- 3.10 Silt Traps and Oil Separators

The licensee shall, within six months of date of grant of this licence, install and maintain silt traps and oil separators at the facility:

 - (i) Silt traps to ensure that all storm water discharges, other than from roofs, from the facility pass through a silt trap in advance of discharge;
 - (ii) An oil separator on the storm water discharge from yard areas. The separator shall be a Class I/Class II full retention/by-pass separator.

The separator shall be in accordance with I.S. EN-858-2: 2003 (separator systems for light liquids).
- 3.11 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 six months from the date of grant of this licence.
- 3.12 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 fugitive emissions.
- 3.13 The licensee shall, within three months of the date of grant of this licence, install 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.
- 3.14 Leachate Management Infrastructure
 - 3.14.1 Effective leachate management infrastructure shall be provided and maintained.
 - 3.14.2 Structures for the storage and treatment of leachate shall be lined.
 - 3.14.3** Leachate management infrastructure at the facility shall provide for the collection and abstraction of leachate from the landfill.
- 3.15 Surface Water Management

Effective surface water management infrastructure shall be provided and maintained at the facility. As a minimum the infrastructure shall be capable of the following:

 - (i) The prevention of contaminated water and leachate discharges into surface water drains and courses;
 - (ii) The collection and diversion of run off from capped and restored areas.
 - (iii) The surface water from all roads and all areas of the facility where surface water has the potential to become contaminated shall be directed to the leachate tanks.
- 3.16 Groundwater Management

- 3.16.1 All wells and boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned according to the UK Environment Agency guidelines ‘Decommissioning Redundant Boreholes and Wells’ (or as otherwise may be agreed).
- 3.16.2 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency’s landfill manual “Landfill Monitoring”.
- 3.16.3 All wellheads, at the facility shall be adequately protected to prevent contamination or physical damage within six months from the date of grant of this licence.
- 3.17 Constructed wetland system and willow bed
 - 3.17.1 The constructed wetland system and the willow bed shall be maintained according to industry best practice and their operation shall have regard to any relevant national guidance.
 - 3.17.2 The licensee shall, within six months of the date of grant of this licence, establish trigger levels for removal of sediment from the wetland ponds based on sampling required in Schedule C.2.1: Control of Emissions to Water, of this licence.

<i>Reason:</i>	<i>To provide for appropriate operation of the facility to ensure protection of the environment.</i>
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Condition 4. Interpretation

- 4.1 Emission limit values for 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 Emission limit values for emissions to waters in this licence shall be achieved without the introduction of dilution, and shall be interpreted in the following way:
- 4.2.1 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.
- 4.2.2 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.
- 4.2.3 Discrete Sampling
- For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.
- 4.3 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.

Reason: *To clarify the interpretation of limit values fixed under the 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 storm water may be discharged to surface water.
 - 5.1.2 Uncontaminated storm 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, there shall be no other emissions from the installation.
- 5.3 No emissions, including odours, from the activities carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.
- 5.4 No substance shall be discharged in a manner, or at a concentration, that, following initial dilution, causes tainting of fish or shellfish.
- 5.5 The licensee shall ensure that all or any of the following:
- Vermin
 - Birds
 - Flies
 - Mud
 - Litter

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

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 for Constructed Wetlands and Willow bed
- 6.1.1 The licensee shall prepare, to the satisfaction of the Agency, a test programme for the operation of the constructed wetland system and the willow bed. This programme shall be submitted to the Agency prior to the commencement of discharge of treated leachate from the constructed wetland. The criteria for the operation of the constructed wetland as determined by the test programme shall be incorporated into the standard operating procedures and *Schedule C.2.1 Control of Emissions to Water*, of this licence.
 - 6.1.2 The licensee shall ensure that each pond and the willow bed is performing as designed and to specification. The licensee shall investigate the causes for any unexpected increase in the concentration of any parameter across any single pond. The report on any investigation and execution of remedial measures shall be submitted as part of the AER.

- 6.1.3 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 & 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:
- (i) sampling and analysis for all parameters listed in the schedules to this licence; and
 - (ii) 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 that will ensure the provision of data of an equivalent scientific quality shall apply.
- 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 accurately reflects the emission/discharge.
- 6.6 The licensee shall ensure that groundwater monitoring well sampling equipment is available or installed at the facility 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 a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive 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 within six months of the date of grant of this licence. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

6.11 The storm water drainage system (i.e., gullies, manholes, any visible drainage conduits and such other aspects as may be required by the Agency), 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.

6.12 Process Effluent

6.12.1 The acute toxicity of the undiluted final effluent to at least four aquatic species from different trophic levels shall be determined by standardised and internationally accepted procedures and carried out by a competent laboratory.

6.12.2 Having identified the most sensitive species outlined in Condition 6.12.1, subsequent compliance toxicity monitoring shall be carried out on the two most sensitive species.

6.12.3 A representative sample of effluent shall be screened for the presence of organic compounds. Such screening shall be repeated at intervals as requested by the Agency thereafter

6.13 Emission to Water

The licensee shall carry out analysis of heavy metals in the sediment of a representative stretch of the receiving waters. The range of heavy metals for analysis shall include boron, cadmium, calcium, chromium, copper, iron, lead, magnesium nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver. The licensee shall within six months of the date of grant of this licence submit for agreement by the Agency a proposal for the sediment sampling programme. The sediment sampling and analysis shall be carried out once every five years or more frequently if directed by the Agency. Results shall be included in the AER.

6.14 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 developed and maintained prior to the commencement of the activity.

6.15 Storm Water

6.15.1 A visual examination of the storm water discharges shall be carried out daily. A log of such inspections shall be maintained.

6.15.2 The licensee shall, within six months of commencement of the activity, establish suitable trigger levels for pH, ammonia, suspended solids and other parameters as may be agreed or directed by the Agency in storm water discharges. The licensee shall have a response programme to address any exceedance of the trigger values such that storm waters exceeding these levels will be diverted for retention and suitable disposal. The licensee shall have regard to the Environmental Protection Agency “Guidance on the setting of trigger values for storm water discharges to off-site surface waters at EPA IPPC and Waste licensed facilities” when establishing the suitable trigger levels.

6.16 Ground Water

Within eighteen months of the date of this licence, the licensee shall, in line with the criteria set out in the Guidance on the Authorisation of Discharges to Groundwater, published by the Environmental Protection Agency, review the most relevant hydrogeological assessment report for the facility or where relevant, arrange for an assessment of the facility, by an appropriately qualified consultant/professional, to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, S.I. No 9 of 2010. A report on the review or assessment report with recommendations shall be submitted to the Agency for approval. Further to the hydrogeological review or assessment, any actions (including the setting of groundwater compliance values, if appropriate) required to demonstrate compliance with the European Communities Environmental Objectives (Groundwater) Regulations 2010, shall be implemented within a period approved by the Agency.

6.17 Pollutant Release and Transfer Register (PRTR)

- 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.
- 6.18 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.
- 6.19 The licensee shall install two additional overburden groundwater monitoring boreholes (BH5 and BH6), located along the down-gradient boundary of the facility.
- 6.19.1 The licensee shall on an annual basis present time-series graphs in their groundwater monitoring reports that present ammoniacal nitrogen concentrations over time for key monitoring wells down-gradient of the site (to include the newly installed down-gradient wells).
- 6.19.2 The licensee shall from the expanded groundwater monitoring network (from four quarterly events) assess the mass flux of ammoniacal nitrogen migrating to the river from the site (via both groundwater and surface water discharges) and calculate the theoretical increase in ammoniacal nitrogen in the river that this represents based on the 95th percentile low flow rate in the river.
- 6.20 The licensee shall prepare a groundwater contour plan for overburden groundwater on an annual basis and include this in their groundwater monitoring reports to the Agency.

Reason: *To provide for the protection of the environment by way of treatment and monitoring of emissions and to provide for the requirements of the Waste Management Act 1996 as amended.*

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 above.
- 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 Schedule of Environmental Objectives and Targets.
- 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.

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 Waste sent off-site for recovery or disposal
- 8.2.1 Waste sent off-site for recovery or disposal shall be transported only by an authorised waste contractor. 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.
- 8.2.2 Waste sent off-site for recovery or disposal shall be transferred only to an appropriate facility.
- 8.3 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off.
- 8.4 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.
- 8.5 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule C: Control & Monitoring*, of this licence.
- 8.6 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.
- 8.7 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.

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 within six months of date of grant of this licence, 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, within six months of date of grant of this licence, 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;
 - (vi) notify the Agency as required by Condition 11.2 of this licence.
- 9.3.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:
- (i) identify and put in place measures to avoid recurrence of the incident; and
 - (ii) identify and put in place any other appropriate remedial actions.

Reason: <i>To provide for the protection of the environment.</i>

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 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.
- 10.2 Closure, Restoration and Aftercare Management Plan (CRAMP)
- 10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed plan for the decommissioning or closure of the site or part thereof. This plan shall be submitted for agreement by the Agency within three months of the date of grant of the licence.
- 10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.
- 10.2.3 The licensee shall have regard to the Environmental Protection Agency's Guidance on Assessing and Costing Environmental Liabilities (2014) and, as appropriate, Guidance on Financial Provision (2015) when implementing Condition 10.2.1 above.
- 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) the criteria that define the successful closure and restoration and aftercare of the activity or part thereof, which ensures minimum impact on the environment;
 - (iii) a programme to achieve the stated criteria;
 - (iv) where relevant, a test programme to demonstrate the successful implementation of the plan;

- (v) details of the long term supervision, monitoring, control, maintenance and reporting requirements for the restored facility and
- (vi) details of the costings for the plan and the financial provisions to underwrite those costs.

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, 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;
 - (iii) any emission that does not comply with the requirements of this licence;
 - (iv) any malfunction or breakdown of key environmental abatement, control or monitoring equipment; and
 - (v) any incident or accident as defined in the glossary requiring an emergency response by the Local Authority.
- 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.
- 11.4 In the event of any incident which relates to discharges to sewer having taken place, the licensee shall notify Irish Water and the Local Authority in a manner prescribed by Irish Water, as soon as practicable after such an incident.
- 11.5 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 / Department of Agriculture, Food and the Marine in the case of discharges to receiving waters.
- 11.6 The licensee shall make a record of any notification made under Condition 11.3 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.
- 11.7 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 response made in the case of each complaint.

- 11.8 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 facility.
- 11.9 The licensee shall as a minimum ensure that the following documents are accessible at the site:
- (i) the licences relating to the facility;
 - (ii) the current EMS for the facility;
 - (iii) the previous year's AER for the facility;
 - (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 facility;
 - (v) relevant correspondence with the Agency;
 - (vi) up-to-date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;
 - (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) 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.
- 11.10 The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in *Schedule D: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 11.11 A full 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 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 & Monitoring*, of this licence; and
- 11.12 The licensee shall submit report(s) as required by the conditions of this licence to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency.
- 11.13 All reports shall be certified accurate and representative by the facility manager or a nominated, suitably qualified and experienced deputy.

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 €10,500 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 Waste Management Act 1996 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 the 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 Waste Management Act 1996 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 as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place, as appropriate in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.
- 12.2.2 The licensee shall arrange for the completion, 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. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the CRAMP. A report on this assessment shall be submitted to the Agency for agreement within three months of the date of grant of the 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. Review results are to be notified as part of the AER.
- 12.2.3 The licensee shall, within three months of the date of grant of the licence and to the satisfaction of the Agency, make financial provision to cover any liabilities associated with the operation (including closure, restoration and aftercare). The amount of financial provision held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1 above.
- 12.2.4 The licensee shall revise the cost of closure, restoration and aftercare annually and any adjustments shall be reflected in the financial provision made under Condition 12.3.3 above.
- 12.2.5 The licensee shall have regard to the Environmental Protection Agency Guidance on Assessing and Costing Environmental Liabilities (2014) and Guidance on Financial Provision (2015) when implementing Conditions 12.2.2, 12.2.3 and 12.2.4 above.

Reason: *To provide for adequate financing for monitoring and financial provisions for measures to protect the environment and to provide for the requirements of the Waste Management Act 1996 as amended.*

SCHEDULE A: Limitations

A.1

The following waste related processes are authorised:

- Surface impoundment by placement of the landfill leachate into Integrated Constructed Wetland Systems and SRC Willow bed.

No additions to these processes are permitted unless agreed in advance with the Agency.



SCHEDULE B: Emission Limits

B.1 Emissions to Air

B.1.1 Landfill Gas Concentration Limits:

(Measured in any building on or adjacent to the facility and perimeter boreholes)

Parameter	Emission Limit Value
Methane	20% LEL (1% v/v)
Carbon Dioxide	1.5% v/v



B.2 Emissions to Water

Emission Point Reference No: D1
Name of Receiving Waters: River Finn
Location: E230908.077 N 395942.728

Emission Point Reference No: D2
Name of Receiving Waters: River Finn
Location: E231076.621 N 395754.966

Emission Point Reference No: D3
Name of Receiving Waters: River Finn
Location: E231069.698 N 395759.633

Emission Point Reference No: D4
Name of Receiving Waters: River Finn
Location: E231172.307 N 395897.031

Volume to be emitted: Maximum in any one day: 136 m³
 (combined volume from D1 to D4)

Parameter	Emission Limit Value
Temperature	25 °C (max)
pH	6 - 9
	mg/l
BOD	25
COD	125
Suspended Solids	25
Ammonia (as N)	3
Orthophosphate (as P)	2
	µg/l
Phenols	46
Metals (Cd, Zn, Cu, Cr, Pb, Hg, Ni)	
Cadmium	0.08
Chromium	50
Copper	5
Lead	1.2
Zinc	8
Nickel	4
Mercury	0.07

B.3 Emissions to Sewer

There shall be no process effluent emissions to sewer.

**SCHEDULE C: Control & Monitoring****C.1.1. Monitoring of Landfill Gas Emissions**

Locations: Landfill Gas Perimeter Boreholes and other selected locations as may be specified.

Parameter	Monitoring Frequency	Analysis Method ^{Note 1} /Technique ^{Note 2}
Methane (CH ₄)	Monthly	Infrared analyser/flame ionisation detector
Carbon Dioxide (CO ₂)	Monthly	Infrared analyser/flame ionisation detector
Oxygen (O ₂)	Monthly	Electrochemical cell
Atmospheric Pressure	Monthly	Standard Method
Temperature	Monthly	Standard Method

Note 1 : All monitoring equipment used should be intrinsically safe.

Note 2 : Or other method/technique agreed in advance by the Agency.



C.2.1. Control of Emissions to Water

Constructed Wetlands and Willow Bed

Emission Point Reference No: D1, D2, D3, D4

Emission Control Location: Constructed wetland ponds and willow bed
Description of Treatment: SRC Willow Bed and Constructed Wetland Ponds

Control Parameter	Monitoring	Key Equipment ^{Note 1}
Flow and flow patterns	Continuous for discharge flow and flow between ponds and in willow bed, Daily visual inspection for flow and flow patterns in the ponds and willow bed.	Flow regulators Flow meters Shut-off valve at discharge Pond isolation valves
Bank inspection, water depth, turbidity in final segments	Weekly	Visual inspection and appropriate measuring equipment
Sediment depth and composition ^{Note 2}, vegetation and invertebrate monitoring	Quarterly	Visual inspection and appropriate measuring/monitoring 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 heavy metals.



C.2.2. Monitoring of Emissions to Water**Emission Point Reference No: D1, D2, D3, D4**

Control Parameter	Monitoring Frequency	Key Equipment/Technique
Flow	Continuous Daily ^{Note 1}	On-line flow meter with recorder
Temperature	Continuous	On-line temperature probe with recorder
Visual Inspection/ Odour ^{Note2}	Daily	Standard Method
Electrical Conductivity	Continuous	Online conductivity meter with recorder
pH	Continuous	pH electrode/meter with recorder
TOC	Continuous	On-line TOC meter with recorder
Ammonia (as N)	Continuous	Standard Method
Chemical Oxygen Demand	Weekly ^{Note 3}	Standard Method
Biochemical Oxygen Demand	Weekly ^{Note 3}	Standard Method
Suspended Solids	Weekly ^{Note 3}	Standard Method
Total Dissolved Solids	Weekly ^{Note 3}	Standard Method
Dissolved oxygen	Weekly	Standard Method
Orthophosphate (as P)	Weekly ^{Note 3}	Standard Method
Total Phosphorous	Weekly ^{Note3}	Standard Method
Nitrates (as N)	Weekly	Standard Method
Nitrites	Weekly	Standard Method
Metals	Weekly ^{Note 4}	Standard Method
Ammoniacal Nitrogen	Monthly	Standard Method
Chloride	Monthly	Standard Method
Sulphate	Monthly	Standard Method
Phenols	Monthly	Standard Method
Organic Compounds ^{Note 5}	Monthly	Standard Method
Total Alkalinity	Monthly	Standard Method
Toxicity ^{Note6}	As may be required	To be agreed by the Agency

Note 1: Total effluent discharged over the 24 hour period in which the composite sample is collected shall be recorded.

Note 2: Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

Note 3: The licensee shall install a composite sampler within three months of date of grant of this licence. All samples thereafter shall be collected on a 24 hour flow proportional composite sampling basis.

Note 4: Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver.

- Note 5:** Screening for priority pollutant list substances (such as US EPA volatile and/or semi volatile compounds). This analysis shall include those organic solvents in use in the process, which are likely through normal process operators to be diverted to the wastewater stream
- Note 6:** The number of toxic units (Tu) = $100/x$ hour EC/LC₅₀ 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.

C.2.3. Monitoring of Constructed Wetland System**Emission Point Reference No: Inlet of Pond 1A receiving cell, Ponds 1A-5A and Ponds 1B-5B** ^{Note1}

Parameter	Monitoring Frequency	Analysis Method/Technique
Total Ammonia	Monthly	Standard method
pH	Monthly	Standard method
Biochemical Oxygen Demand	Monthly	Standard method
Chemical Oxygen Demand	Monthly	Standard method
Metals ^{Note 2}	Monthly	Standard method
Heavy metals in sediment of each pond	Quarterly	Standard method
Other ^{Note3}		

Note 1. The monitoring shall take place on inlet and outlet of each pond.

Note 2. Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium(total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver.

Note 3. As might be required by the Agency.



C.2.4. Leachate Monitoring

Location: Leachate Sumps (undiluted leachate)

Parameter	Leachate ^{Note 1} Monitoring Frequency
Visual Inspection/Odour	Daily
Leachate Level	Continuous
pH	Quarterly
Biochemical Oxygen Demand	Quarterly
Chemical Oxygen Demand	Quarterly
Electrical Conductivity	Quarterly
Ammoniacal Nitrogen	Quarterly
Cyanide (Total)	Quarterly
Fluoride	Quarterly
Sulphate	Quarterly
Chloride	Quarterly
Total P/Orthophosphate	Quarterly
Total Oxidised Nitrogen	Quarterly
Metals ^{Note 2}	Quarterly
Faecal Coliforms	Quarterly
Total Coliforms	Quarterly
Total Alkalinity	Quarterly
Nitrate (as N)	Quarterly
Nitrite	Quarterly
Organic Compounds	Quarterly
Other ^{Note3}	Quarterly

Note 1. Visual Inspection and Leachate Levels to be monitored at all leachate monitoring points, collection sumps and leachate tanks. Leachate composition to be monitored at the leachate tank or based on a composite of collected undiluted leachate samples.

Note 2. Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium(total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver.

Note 3. As might be required by the Agency.

C.3.1. Control of Emissions to Sewer

There shall be no emissions to sewer.



C.3.2. Monitoring of Emissions to Sewer

There shall be no emissions to sewer.



C.4 Noise Monitoring

No additional noise monitoring is required in this schedule.



C.6 Groundwater Monitoring

Location: Groundwater Wells BH1, BH2, BH3 and

two wells required to be installed under Condition 3.16

Parameter	Monitoring Frequency	Analysis Method/Techniques
Visual Inspection/Odour ^{Note3}	Quarterly	Standard Methods
Groundwater Level (wells)	Monthly	Standard Method
PH	Quarterly	PH electrode/meter
Chemical Oxygen Demand	Quarterly	Standard Method
Nitrate	Quarterly	Standard Method
Total Ammonia	Quarterly	Standard Method
Total Nitrogen	Quarterly	Standard Method
Conductivity	Quarterly	Standard Method
Chloride	Quarterly	Standard Method
Fluoride	Quarterly	Standard Method
Hazardous Compounds ^{Note1}	Quarterly	Standard Method
Metals/non metals ^{Note2}	Quarterly	Standard Methods
Ammoniacal Nitrogen	Quarterly	Standard Methods
Total Phosphorous/Orthophosphate	Quarterly	Standard Methods
Phenols	Quarterly	Standard Methods
Faecal Coliforms	Quarterly	Standard Methods
Total Coliform	Quarterly	Standard Methods

Note 1: 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. Monitoring for the identified hazardous substances shall be carried out at least annually, unless a case for less frequent monitoring is agreed by the Agency

Note 2: Metals and elements to be analysed should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, arsenic and zinc.

Note 3: Where there is evident gross contamination, additional samples should be analysed, and the full suite of parameters shown tested.

C.7 Receiving Water Monitoring

Location:	SW1 (N230934.07, E396164.09)
	SW2 (N231177.01, E395895)
	SW3 (River Finn-midstream of the facility N231180.26, E395840.10)
	SW4 (N231026.01, E395734.06)
	SW5 (N231038.03, E395711.08)
	SW6 (River Finn-upstream of the facility N230983, E395705.11)
	SW7 (River Finn-downstream of the facility N231248.04, E35948.97)

Control Parameter	Monitoring Frequency	Key Equipment/Technique
Biological Quality (Q) Rating/Q Link	Annually	To be agreed by the Agency
Visual Inspection/ Odour ^{Note2}	Weekly	Sample and examine for colour and odour
Electrical Conductivity	Quarterly	Online conductivity meter with recorder
pH	Quarterly	pH electrode/meter with recorder
TOC	Quarterly	On-line TOC meter with recorder
Ammonia (as N)	Quarterly	Standard Method
Chemical Oxygen Demand	Quarterly	Standard Method
Biochemical Oxygen Demand	Quarterly	Standard Method
Suspended Solids	Quarterly	Standard Method
Total Dissolved Solids	Quarterly	Standard Method
Dissolved oxygen	Quarterly	Standard Method
Orthophosphate (as P)	Quarterly	Standard Method
Total Phosphorous	Quarterly	Standard Method
Nitrates (as N)	Quarterly	Standard Method
Nitrites	Quarterly	Standard Method
Metals ^{Note3}	Quarterly	Standard Method
Ammoniacal Nitrogen	Quarterly	Standard Method
Chloride	Quarterly	Standard Method
Sulphate	Quarterly	Standard Method
Phenols	Quarterly	Standard Method
Organic Compounds	Quarterly	Standard Method
Total Alkalinity	Quarterly	Standard Method

Toxicity ^{Note4}	As may be required by the Agency	To be agreed by the Agency
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Note 1: Monitoring period – June to September.

Note 2: Where there is evident gross contamination, additional samples should be analysed and the full suite of parameters shown tested.

Note 3: Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, zinc, arsenic, mercury, aluminium and silver.

Note 4: The number of toxic units (Tu) = 100/x hour EC/LC₅₀ 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.



SCHEDULE D: Annual Environmental Report

Annual Environmental Report Content ^{Note 1}
<p>Emissions from the facility.</p> <p>Waste management record.</p> <p>Monitoring results and summary.</p> <p>Resource consumption summary.</p> <p>Complaints summary.</p> <p>Schedule of Environmental Objectives and Targets.</p> <p>Environmental management programme – report for previous year.</p> <p>Environmental management programme – proposal for current year.</p> <p>Tank and pipeline testing and inspection report.</p> <p>Reported incidents summary.</p> <p>Energy efficiency audit report summary.</p> <p>Report on the assessment of the efficiency of use of raw materials in processes and the reduction in waste generated.</p> <p>Report on progress made and proposals being developed to minimise water demand and the volume of trade effluent discharges.</p> <p>Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.</p> <p>Review of Closure, Restoration & Aftercare Management Plan.</p> <p>Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities).</p> <p>Environmental Liabilities Risk Assessment Review (every three years or more frequently as dictated by relevant on-site change including financial provisions).</p> <p>Any other items specified by the Agency.</p>

Note 1: Content may be revised subject to the approval of the Agency.

Signed on behalf of the said Agency _____

On the xx day of xxxxx, 201X xxxxxxxxxxxx **Authorised Person**