

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

TECHNICAL AMENDMENT C
TO
INDUSTRIAL EMISSIONS LICENCE

Licence Register Number:	W0183-01
Company Registration Number:	527552
Licensee:	Starrus Eco Holdings Limited
Location of Installation:	Millennium Business Park Grange Ballycoolin Dublin 11



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 Licence Reg. No. W0183-01 granted on 15th April 2004, and amended on 24th February 2006, 16th December 2015 and 29th June 2016 as well as any amendments noted herein, any emissions from the activity will comply with and not contravene any of the requirements of Section 83(5) of the Environmental Protection Agency Act 1992 as amended.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024), Malahide Estuary (Broadmeadow/Swords) SPA (Site Code: 004025), North Bull Island SPA (Site Code: 004006), Baldoyle Bay SPA (Site Code: 004016), Rogerstown Estuary SPA (Site Code: 004015), River Water Valley/Cartron SAC (Site Code: 001398), Malahide Estuary SAC (Site Code: 000205), South Dublin Bay SAC (Site Code: 000210), North Dublin Bay SAC (Site Code: 000206), Baldoyle Bay SAC (Site Code: 000199) and Rogerstown Estuary SAC (Site Code: 000208).

The activity is 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 can be excluded, on the basis of objective information, that the activity, 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 activity was not required. The reasons for this determination are as follows:

- The installation is not located within the above European Sites.
- There will be no emissions of environmental significance from the activity.
- The activity will not result in damage to, or loss of, species and habitats of this European Site.
- The technical amendment, as requested, will not change the nature of the consent.

Technical Amendment

In pursuance of the powers conferred on it by Section 96(1)(b) of the Environmental Protection Agency Act 1992 as amended, the Agency amends the licence, granted to Starrus Eco Holdings Limited, for an installation located at Millenium Business Park, Grange, Ballycoolin, Dublin 11.

Henceforth, the licence shall be read in conjunction with a Section 76A(11) Amendment issued on 16th December 2015, Amendment A issued on 24th February 2006, Amendment B issued on 29th June 2016 and the amendments set out below.



This technical amendment is limited to the following Conditions and Schedule of Licence Reg. No. W0183-01:



Amendments

Introduction

Amend the Introduction to the licence to read as follows:

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

This licence is for the development of a non-hazardous waste recycling and transfer facility at a greenfield site in the Millennium Business Park, Grange, Ballycoolin, Dublin 11. Starrus Eco Holdings Limited will be permitted to accept non-hazardous municipal, industrial, commercial and construction and demolition wastes at the facility.

The maximum quantity of waste to be accepted at the facility is 270,000 tonnes per annum at the Waste Transfer and Recovery Buildings.

The licensee must manage and operate the facility to ensure that activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results, and a wide range of reports on the operation and management of the facility to the Agency.

The licence sets out in detail the conditions under which Starrus Eco Holdings Limited will operate and manage this facility.

Deleted Conditions

Amend by deleting the following Conditions of the licence:

3.15.4 Biowaste treatment facility

- (i) Unless otherwise agreed in advance by the Agency, the licensee shall provide a biowaste treatment system as proposed in the waste licence application.
- (ii) The biowaste treatment facility shall be constructed on a phased basis. The licensee shall not extend the biowaste treatment operations to accept more than 25,000 tonnes of biowaste per annum until the recommendations of the odour impact report have been implemented as required by Condition 10.3.

- (iii) The composting unit shall as a minimum include/consist of the following:
- (a) A fully enclosed building for the acceptance, inspection and treatment of all biowaste;
 - (b) Designated areas for the acceptance, temporary storage and pre-treatment of biodegradable waste, a fully aerated biowaste treatment area and designated areas for the storage of processed compost;
 - (c) A fully controllable system for the aeration of the biowaste/compost and a sprinkler system for the addition of moisture to the biowaste/compost as required;
 - (d) An odour abatement system which satisfies the following requirements:
 - Installation and maintenance of integrity and negative pressure throughout the building to ensure no significant escape of odours or dust.
 - Installation of an odour management system that shall include water scrubber(s) and suitably sized biofilter(s). All emissions from the biofilter(s) shall be discharged via a stack located 16m above ground level.
 - Provision of 100% duty capacity and 50% stand by capacity, back ups and spares must be provided for the air handling, ventilation and abatement plant.
 - Emissions from the biofilter shall not exceed those ELV's as set out in *Schedule C: Emission Limits*, of this licence.

- 4.3.2 The floor of the reception/pre-treatment area within the biowaste treatment building shall be cleared of all waste at the end of the working day.
- 4.3.4 All pre-treatment of biowaste and compost screening shall be carried out inside the biowaste treatment building.
- 4.3.6 Any biowaste accepted at the facility for composting (other than bulking agents, e.g. woodchip, cardboard) shall be processed and put into the aerated composting area within twenty four hours of its arrival at the facility, subject to review in the event of a nuisance.
- 4.3.7 The licensee shall ensure that the doors to the biowaste treatment building remain closed at all times other than to facilitate the delivery/removal of wastes from the building.



10.3 Odour

- 10.3.1 Prior to the acceptance of biowaste for composting/treatment at the facility the licensee shall submit a report to the Agency for its agreement on the commissioning and operation of the scrubbers/biofilter on a phased basis in order to ensure adequate odour control at the facility.
- 10.3.2 Following the operation of the biowaste treatment facility for a period of not less than nine months the licensee shall complete an odour impact assessment that shall include the following:
- (i) Actual odour monitoring (a) of all significant emissions from the biowaste treatment facility (b) at a number of locations along the facility boundary and (c) at nearby sensitive locations to be agreed by the Agency. Prior to carrying out this monitoring, the licensee shall submit the odour sampling programme for agreement by the Agency.
 - (ii) An assessment of any complaints that may have been received during the operation of the facility that may indicate odour emissions from the facility may have caused a nuisance.
 - (iii) Odour impact modelling using actual data which has been obtained at the facility. Such modelling shall be carried out to reflect the tonnages being processed at the time of the monitoring and also for the following annual tonnages: 25,000 tonnes, 37,500 tonnes and 50,000 tonnes.
- 10.3.3 Based on the results and findings of the odour impact assessment completed as per Condition 10.3.2 the licensee shall submit proposals and recommendations for the potential expansion of the biowaste treatment facility to the Agency for its agreement. This shall include the need to provide proposals for additional odour abatement where necessary.
- 10.3.4 The licensee shall implement the recommendations of the odour impact assessment within a timeframe agreed in advance by the Agency.

- 10.4 Within six months of the date of grant of this licence the licensee shall submit a report to the Agency outlining how they intend to ensure that composting activities at the facility shall meet the requirements of the Animal By-Products Regulation.



Amended Conditions

Amend Condition 3.13.4 of the licence to read as follows:

- 3.13.4 The licensee shall provide on-site storage tanks for the collection and temporary storage of roof water from Waste Recovery and Transfer Buildings respectively. This water shall be re-used in the process where possible.

Amend Condition 3.15 of the licence to read as follows:

3.15 Waste Acceptance and Handling Areas.

3.15.1 Municipal Waste Area within the Waste Recovery and Transfer Buildings

- (i) Prior to the acceptance of municipal waste at the facility, the licensee shall provide a dedicated area for the acceptance and handling of such waste.
- (ii) Prior to the acceptance of municipal waste at the facility the licensee shall provide a dedicated system for the control of odour emissions. The licensee shall include details of this odour control system as part of the AER. The licensee shall, at such time as the Agency considers necessary, undertake an assessment of the environmental performance of the odour control system. In the event that the assessment demonstrates that the odour control system is inadequate the licensee shall implement abatement measures, including air extraction and filtration, within a period specified by the Agency.
- (iii) The municipal waste area shall be designed to allow for the inspection of all incoming waste loads when tipped.

3.15.2 Construction and Demolition Waste Area within the Waste Recovery and Transfer Buildings

- (i) Prior to the acceptance of construction and demolition waste at the facility the licensee shall provide a dedicated area for the acceptance, handling and storage of such waste.
- (ii) A localised dust suppression system shall be provided at the construction and demolition waste area.
- (iii) Suitably sized waste storage bays and bays for the storage of recovered materials shall be provided.



- 3.15.3 Commercial and Industrial / Pre-Segregated Waste Acceptance Area within the Waste Recovery and Transfer Buildings**
- (i) The licensee shall provide an area of suitable size for the acceptance handling and processing of commercial and industrial wastes.
 - (ii) The licensee shall provide designated areas for the storage of baled materials prior to their removal off-site.
 - (iii) The licensee shall provide noise and dust control measures at any shredders and/or screens used for processing of commercial and industrial wastes at the facility.

Amend Condition 4.2.3 of the licence to read as follows:

- 4.2.3 Waste arriving at the facility shall be weighed, documented and directed to the Waste Recovery and Transfer Buildings. Each load of waste arriving at the Waste Recovery and Transfer Buildings shall be inspected upon tipping within these buildings. Only after such inspections shall the waste be processed for disposal or recovery.**

Amend Condition 4.3.1 of the licence to read as follows:

- 4.3.1 The floor of the municipal waste area and areas used to off-load waste in the Waste Recovery and Transfer Buildings (other than the C&D area) shall be cleared of all waste at the end of the working day. Only non-putrescible waste may be stored overnight in the dedicated storage bays prior to recovery.**

Amend Condition 6.5.1 of the licence to read as follows:

- 6.5.1 All waste for disposal stored overnight at the facility, shall be stored in suitably covered and enclosed containers within the Waste Recovery and Transfer Buildings and shall be removed from the facility within forty eight hours of its arrival at the facility.**



Amend Condition 6.5.3.1 of the licence to read as follows:

- 6.5.3.1 The doors of the Waste Recovery and Transfer Buildings shall be kept closed where possible. The licensee shall, to the satisfaction of the Agency, provide and maintain heavy duty plastic sheeting along the top of the door openings which extends down as far as possible that avoids damage by vehicle movements.

Amend Condition 7.10.2 of the licence to read as follows:

- 7.10.2 The licensee shall on a daily basis inspect the odour and dust control systems in the Waste Recovery and Transfer Buildings.

Amend Condition 9.6 of the licence to read as follows:

- 9.6 A written record shall be kept of all inspections of the on-site odour and dust control systems located in the Waste Recovery and Transfer Buildings.

Deleted Schedules

Delete Schedule C.4 Emission Limit Values from Biowaste Treatment Building, of the licence.

C.4 Emission Limit Values from Biowaste Treatment Building

Emission Limit Values from Biowaste Treatment Building

Emission point reference No. BW-1 & BW-2 (emission point(s) from biowaste treatment building)

Parameter	Emission Limit Value
Total Particulates	50 mg/m ³
Ammonia	50 ppm (v/v)
Amines	5 ppm (v/v)
Hydrogen sulphide	5 ppm (v/v)
Mercaptans	5 ppm (v/v)

Delete Schedule D.5 Emissions from Biowaste Treatment Building Unit & Air Quality Monitoring, of the licence.

D.5 Emissions from Biowaste Treatment Building Unit & Air Quality Monitoring

Table D.5.1 Dust, Odour and Micro-organisms Monitoring Frequency and Technique

Parameter ^{Note 1}	Monitoring Frequency	Analysis Method/Technique
Dust (mg/m ³ /day)	Three times a year ^{Note 2}	Standard Method ^{Note 3}
Odour	Bi-annually	See ^{Note 4}
Airborne Microbes	Annually	Grab sample ^{Note 5}

Note 1: Meteorological monitoring to be carried out concurrently with all above monitoring.

Note 2: Twice during the period May to September, or as otherwise specified in writing by the Agency.

Note 3: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

Note 4: Odour measurements shall be by olfactometric measurement and analysis for mercaptans, hydrogen sulphide, ammonia, amines.

Note 5: Enumeration of colonies to be carried out as described in 'Standardised Protocol for the Sampling and Enumeration of Airborn Micro-organisms at composting Facilities' the Composting Association 1999.

Table D.5.2 Emissions to Atmosphere: Abatement/Treatment Control at Biodegradable Waste Treatment Building

Emission Points Reference No.: BW-1 & BW-2 (emission points from the biowaste treatment building stacks located 16m above ground level).

Description of Treatment: Scrubber / Humidifier / Biofilter(s)

Unless agreed otherwise by the Agency, the Loading Rate shall not exceed 100 m³/hr/m³ of biofilter media and Monitoring and Backup Equipment at the biowaste treatment building shall be as set out below:

Control Parameter	Monitoring Required ^{Note 4}	Monitoring Equipment	Backup Equipment
Scrubber			
PH	Daily	pH probe	Spare probe
Biofilter			
Inlet Gas			
Differential Pressure Drop across the filter	Daily	Manometer	Spare manometer
Temperature	Daily	Temperature sensor	-
Inlet and Outlet Gas			
Ammonia	Monthly	Colorimetric Indicator Tubes ^{Note 1}	Spare tubes
Hydrogen sulphide	Monthly	Colorimetric Indicator Tubes ^{Note 1}	Spare tubes
Mercaptans	Monthly	Colorimetric Indicator Tubes ^{Note 1}	Spare tubes
Bed Media			
Condition ^{Note 2}	Daily	Visual Inspection	-
Moisture content	Quarterly	Standard laboratory method ^{Note 1}	-
PH	Quarterly	pH probe	-
Total viable counts	Bi-Annually	Standard laboratory method ^{Note 1}	-

General			
Sprinkler System	Check operation Daily	Visual Inspection	-
Fan	Check operation Daily	Visual Inspection	
Negative Pressure ^{Note 3}	Monthly	Air current tubes ^{Note 1}	Spare tubes

All measurements shall be made at peak bed loading.

Note 1: Or an equivalent method acceptable to the Agency.

Note 2: The biofilter shall be examined to ensure that no channelling is evident. Turning, restructuring and the addition of supplementary bed materials, or total bed replacement shall be carried out, as required, subject to bed performance.

Note 3: To be carried out on all buildings under negative pressure. A log shall be kept on - site with records of the date and time of analysis, building tested and weather on date of testing.

Note 4: Records shall be kept at the facility of all monitoring and visual checks.

Delete Schedule F: Standards for Compost Quality, of the licence:

SCHEDULE F : Standards for Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH₄-N, NO₃-N, pH and dry matter content should also be measured.

Compost shall be deemed unsatisfactory if more than 25% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

1. Maturity

The state of the curing pile must be conducive to aerobic biological activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements:

1. Respiration activity after four days AT₄ is ≤10mg O₂/g dry matter or Dynamic Respiration Index is ≤1,000mg O₂/kg VS/h.
2. Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample.
3. Compost must be cured for at least 21 days and Compost will not reheat upon standing to greater than 20°C above ambient temperature.
4. If no other determination of maturity is made, the compost must be cured for a six month period. In addition, offensive odours from the compost shall be minimal for the compost to be deemed mature.
5. Or other maturity tests as may be agreed with the Agency.

2. Trace Elements ^{Note 1 & 2}

Parameter (mg/kg, dry mass)	Compost Quality Standards ^{Note 3}		Stabilised Biowaste
	Class I	Class II	
Cadmium (Cd)	0.7	1.5	5
Chromium (Cr)	100	150	600
Copper (Cu)	100	150	600
Mercury (Hg)	0.5	1	5
Nickel (Ni)	50	75	150
Lead (Pb)	100	150	500
Zinc (Zn)	200	400	1500
Polychlorinated Biphenyls (PCBs)	-	-	0.4
Polynuclear Aromatic Hydrocarbons	-	-	3
Impurities > 2mm ^{Note 4}	<0.5%	<0.5%	<3%
Gravel & Stones ^{Note 4}	<5%	<5%	-

Note 1: These limits apply to the compost just after the composting phase and prior to mixing with any other materials.

Note 2: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

Note 3: Normalised to 30% organic matter content.

Note 4: Compost must not contain any sharp foreign matter measuring over a 2mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

3. Pathogens

Pathogenic organism content must not exceed the following limits:

<i>Salmonella sp.</i>	Absent in 50g	n=5
<i>Faecal Coliforms</i>	≤ 1000 Most probable number (MPN) in 1g	n=5

Where n=number of samples to be tested.

4. Monitoring

The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of methods of analyses and methods of sampling.

The analyses shall be carried out on a monthly basis

Amended Schedules

Amend Schedule A: Waste Acceptance, of the existing licence as follows:

SCHEDULE A: Waste Acceptance***A.1 Waste Acceptance******Table A.1 Waste Categories and Quantities***

Waste Type	Quantity
Municipal Waste ^{Note 1}	125,000
Commercial and Industrial Waste	100,000
Construction and Demolition Waste	45,000
Total ^{Note 2}	270,000

Note 1: Subject to Condition 3.15.1(i).

Note 2: The amount of each waste stream may be varied providing the total quantity is not exceeded and subject to agreement by the Agency.

This Technical Amendment shall be cited as Amendment C to the licence.

Sealed by the Seal of the Agency on this the 4th day of March, 2020

PRESENT when the seal of the Agency was affixed hereto

Tara Gillen

Tara Gillen, Authorised Person

