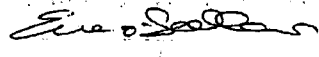


This Report has been cleared for submission to the Director by  
Frank Clinton, Programme Manager

Signed:  Date 04/04/17



**OFFICE OF ENVIRONMENTAL  
SUSTAINABILITY**

**ENVIRONMENTAL LICENSING PROGRAMME**

**TO:** Dara Lynott, Director

**FROM:** Brian Meaney, Inspector, Environmental Licensing Programme

**DATE:** 4 April 2017

**RE:** Technical amendment to waste licence register number W0144-01 held by Oxigen Environmental Limited, Coes Road, Dundalk.

The Agency received a request on 30/1/2017 from Oxigen Environmental Limited to make a technical amendment to licence register number W0144-01. The request relates to a proposal to install odour abatement equipment at the facility and to create a new emission point to air.

This memo recommends that the change may be accommodated by a Technical Amendment, in accordance with Section 42B(1)(b) of the Waste Management Act 1996 as amended.

**1. Background**

Sean Rooney Limited, t/a Bambi Bins and Wheel Bin Services Limited was granted a licence in February 2002 for a waste facility located at Coes Road, Dundalk. The licence was transferred to Oxigen Environmental Limited in February 2010.

The licence was amended three times:

- in September 2007, to clarify waste acceptance hours;
- in December 2007, to further clarify waste acceptance and operational hours; and
- in June 2016, to provide for the preparation of a waste storage plan.

The licensee is authorised to accept up to 90,000 tonnes of municipal, industrial and construction and demolition waste. Table 1 shows the quantity of waste accepted in 2013, 2014 and 2015. The table also shows the quantity of waste dispatched from the facility for incineration and landfill.

**Table 1 Waste accepted and dispatched for incineration and landfill**

Year	Total accepted	To incineration	To landfill	To other waste facilities
2013	35,432 tonnes	-	-	-
2014	38,331 tonnes	16,298 tonnes	167 tonnes	21,999 tonnes
2015	35,891 tonnes	16,951 tonnes	2,265 tonnes	16,504 tonnes

According to the AER 2015, waste handling activities at the site consist of accepting and bulk loading of commercial, industrial and municipal waste for transfer to other waste facilities. In addition, recyclable waste (cardboard, glass, metal, timber, plastic) is recovered and sent for further recycling.

Municipal and industrial waste is directed to the municipal waste building. Additional environmental controls at this building are the subject of the technical amendment application and this report.

Construction and demolition waste is also accepted and directed to the construction and demolition waste building. This building and associated activities are not the subject of the technical amendment and will not be discussed further in this report.

In the period January to October 2016, 97 complaints were recorded on the EPA's database. The complaints are mostly concerned with odour and some are concerned with flies. There are no recorded complaints since October 2016. There are 54 recorded complaints (odour and flies) for 2015 on the database, 66 for 2014 and 81 for 2013 (including 2 noise complaints).

The installation of odour abatement equipment is a priority in order to minimise nuisance odour emissions and the negative impact that these are having on neighbouring businesses and residents.

## **2. Technical Amendment request**

The request for technical amendment of the licence concerns the installation of new odour emissions abatement equipment at the facility. The equipment will be located outside the municipal waste building and will treat ambient air extracted from the building. The treated air will be emitted to atmosphere via a new emission point, the authorisation of which is sought by technical amendment.

Planning permission was granted in 2016 by Louth County Council for the development of a lean-to extension to the municipal waste building, the installation of odour abatement equipment and an emissions stack of up to 20m in height. There was no EIS accompanying the planning application.

Two techniques for odour abatement equipment were proposed in the technical amendment application, viz.:

- bio-scrubber – a wet scrubbing system (using water) to remove pollutants from the air stream followed by biological treatment of the contacted water using an activated sludge bioreactor; and
- carbon adsorption filter – pre-filtration of entrained dust and particulates (using a reverse jet cartridge filter) followed by adsorption using carbon.

It is not possible within the confines of a technical amendment of a licence to consider in detail the merits of the two proposed techniques. However, the odour emission from a bio-

scrubber is predicted to be 1,500 OU<sub>E</sub>/m<sup>3</sup> whilst the carbon filter (combined with a dust filter) is designed for an odour emission of 300 OU<sub>E</sub>/m<sup>3</sup>, representing a 90% removal efficiency of odorous (acidic and basic) compounds. On the basis of odour removal efficiency alone, and as the apparently more efficient technique, only carbon filtration will be considered from this point onwards in this report.

The carbon filtration equipment is designed to draw and treat four air changes per hour from the controlled part of the municipal waste building. This equates to an air flow rate of 26,000m<sup>3</sup> per hour from half of the municipal waste building which, it is indicated in the licensee's documents, has been split internally. According to the licensee's waste storage plan (submitted on 16/1/2017 as a licensee return), the storage areas for municipal waste and brown bin waste are located in one half of the building. Storage areas for dry mixed recyclable waste and waste cardboard are located in the other half. There is no information provided on the nature of the partition in the building but it will have to be of such construction that the proposed licence conditions, described below, are complied with.

An odour dispersion model was provided with the technical amendment application.

### 3. Consultation with the Office of Environmental Enforcement (OEE)

I consulted with OEE senior inspector Mr. Patrick Byrne who confirmed that the proposed installation of odour abatement equipment and a new emission point cannot be accommodated under the existing licence. I also consulted with OEE during the drafting of the recommended technical amendment.

### 4. Assessment

An odour dispersion model was prepared by the licensee to quantify the impact of the treated air emission (at 300 OU<sub>E</sub>/m<sup>3</sup>) in the surrounding environment. AERMOD was used to model the emission using meteorological data for 2011 and 2012 (selected as worst case scenarios) from Dublin airport. Modelling was done in accordance with Agency guidance (AG4). A range of stack heights between 12 and 20 metres was modelled to determine the optimum height. The predicted emission value of 300 OU<sub>E</sub>/m<sup>3</sup> was modelled, equating to an odour emission rate of 2,167 OU/s. Odorous emissions from the C&D building (unabated at 250 OU<sub>E</sub>/m<sup>3</sup>) were included in the modelled scenarios to reflect cumulative odour impacts from the facility as a whole. The output from the model is presented in Table 2. The columns with headings "% change (EPA calc)" are my calculations using the licensee's data.

**Table 2 Modelled outputs and EPA calculations of percentage change in predicted ground level concentrations depending on stack height**

Stack height	Boundary of facility				Nearest residential receptor			
	99.5 <sup>th</sup> ile of 1-hour means	% change (EPA calc)	98 <sup>th</sup> ile of 1-hour means	% change (EPA calc)	99.5 <sup>th</sup> ile of 1-hour means	% change (EPA calc)	98 <sup>th</sup> ile of 1-hour means	% change (EPA calc)
10m stack	1.61	-	1.16	-	0.34	-	0.14	-
12m stack	1.34	-17%	1.02	-12%	0.30	-12%	0.13	-7%
15m stack	1.18	-12%	0.79	-23%	0.25	-17%	0.10	-23%
20m stack	1.18	0%	0.62	-22%	0.18	-28%	0.08	-20%

The licensee's modelled outputs show that all predicted values (except with a 10m stack) will be less than the evaluation criterion of  $1.5 \text{ OU}_E/\text{m}^3$  set out in the Agency guidance AG4. According to an odour contour plot provided by the licensee (showing the 98<sup>th</sup>ile plume for one-hour mean odour concentrations from a 12m stack and illustrated in Figure 1), the maximum predicted odour concentration outside the facility boundary will occur at a transport depot adjacent to the licensed facility and at the rear of a row of four commercial buildings.

Table 2 shows that the ground level concentrations decrease significantly with increasing stack height. Moving from the proposed 12m stack to a 15m stack reduces the predicted ground level concentration by 23% (based on the 98<sup>th</sup>ile). Moving from a 15m stack to a 20m stack predicts a further 20%-22% reduction at the 98<sup>th</sup>ile. A stack height of 20m is accordingly recommended.



**Figure 1 Odour contour plot – 12m stack**  
(Site boundary shown in red, maximum odour contour is within the green area, maximum value  $1.02 \text{ OU}_E/\text{m}^3$  at the site boundary).

## 5. Appropriate Assessment

A screening for Appropriate Assessment was undertaken and is documented in the attached recommended technical amendment. Table 3 lists the European Sites assessed, their associated qualifying interests and conservation objectives.

**Table 3 List of European sites assessed, their associated qualifying interests and conservation objectives**

European Sites	Distance and direction from facility	Qualifying interests	Conservation objectives

<p>Dundalk Bay SPA [004026]</p> <p>Dundalk Bay SAC [000455]</p>	<p>650m north of the facility</p>	<p><b>Habitats:</b></p> <p>Estuaries [1130]  Mudflats and sandflats not covered by seawater at low tide [1140]  Perennial vegetation of stony banks [1220]  Salicornia and other annuals colonising mud and sand [1310]  Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]  Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p><b>Species:</b></p> <p>Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]  Greylag Goose (<i>Anser anser</i>) [A043]  Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]  Shelduck (<i>Tadorna tadorna</i>) [A048]  Teal (<i>Anas crecca</i>) [A052]  Mallard (<i>Anas platyrhynchos</i>) [A053]  Pintail (<i>Anas acuta</i>) [A054]  Common Scoter (<i>Melanitta nigra</i>) [A065]  Red-breasted Merganser (<i>Mergus serrator</i>) [A069]  Oystercatcher (<i>Haematopus ostralegus</i>) [A130]  Ringed Plover (<i>Charadrius hiaticula</i>) [A137]  Golden Plover (<i>Pluvialis apricaria</i>) [A140]  Grey Plover (<i>Pluvialis squatarola</i>) [A141]  Lapwing (<i>Vanellus vanellus</i>) [A142]  Knot (<i>Calidris canutus</i>) [A143]  Dunlin (<i>Calidris alpina</i>) [A149]  Black-tailed Godwit (<i>Limosa limosa</i>) [A156]  Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]  Curlew (<i>Numenius arquata</i>) [A160]  Redshank (<i>Tringa totanus</i>) [A162]  Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]  Common Gull (<i>Larus canus</i>) [A182]  Herring Gull (<i>Larus argentatus</i>) [A184]  Wetland and Waterbirds [A999]</p>	<p>As per NPWS (2011) Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026, Version 1.0, National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, dated 19/7/2011.</p>
---	-----------------------------------	--	--

## 6. Recommended conditions and schedules

Given the imperative to address significant odour emissions from the facility, it is recommended that the licence is amended as described below to allow for the installation and operation of odour abatement equipment and a new emission point to air.

To minimise fugitive odour emissions, a new condition 6.9 is recommended to ensure that negative pressure is in place in all buildings used for the storage, holding and treatment of residual, food and odour-forming waste. The condition requires the treatment of extracted air and conformance with the condition must be achieved by 30 June 2017.

A test programme for new odour abatement equipment is proposed as new condition 6.11 of the licence.

In relation to the new emission point to air, an emission limit value of 300 OU<sub>E</sub>/m<sup>3</sup> is recommended in a new schedule C.4 of the licence.

A monthly monitoring frequency for odour emissions from the new emission is recommended in a new schedule D.5 of the licence, as are varying frequencies for other parameters as well as the control parameters proposed by the licensee for the abatement equipment.

The requirement for a periodic odour assessment at the facility is recommended as a new condition 7.8 in the licence.

A number of other new conditions are proposed all with the purpose of minimising the potential for odour nuisance to occur outside the facility boundary and, in the case of a windsock, to provide for public information in the event of odour nuisance arising in the vicinity of the facility.

The Agency decided in 2013 that activities at the facility were not activities that were licensable as Industrial Emissions activities. A considerable quantity of waste is sent for incineration from the facility (see Table 1 above), but the data do not indicate at this time that the threshold values for Industrial Emissions licensing are being exceeded. It is appropriate to restrict the capacity of any treatment process involving the pre-treatment of waste for incineration or co-incineration to 75 tonnes per day and to require the keeping of records to demonstrate this. A new restrictive condition 1.11 is proposed, as is a new condition 10.6 imposing a record-keeping obligation. A definition of treatment/pre-treatment is also proposed.

## 7. Recommendation

This memo recommends that a technical amendment is made to waste licence register number W0144-01 in accordance with Section 42B of the Waste Management Act 1996 as amended.

I recommend that the attached recommended technical amendment is approved. The making of the amendment will not result in the relevant requirements of Section 40(4) of the Waste Management Act 1996 as amended ceasing to be satisfied.

Signed



Brian Meaney  
Senior Inspector  
Environmental Licensing Programme