



# Deep Moor Waste Transfer Station

## Non-Technical Summary

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## 1.0 Introduction

SLR Consulting Limited (SLR) has been instructed by Coastal UK Group Limited (Coastal) to prepare an application to vary the existing waste management licence (EAWML 100304) for Deep Moor Waste Transfer Station (hereafter referred to as 'the Site') to include the operation of two Advetec aerobic digestion units for the treatment of mixed municipal waste and other non-hazardous wastes (including mixtures of materials) from the pre-pick processing of mechanically treated wastes, and the extension of the environmental permit boundary.

This Non-Technical Summary (NTS) provides a summary of what is being applied for, the regulated facility and outlines the key technical standard and control measures that will be implemented at the Site as a result of the risk assessments.

### 1.1 The Site

Deep Moor Waste Transfer Station is located in Higher Bullen, St. Giles in the Wood, Torrington, Devon EX38 7JA (hereafter referred to as 'the Site') centred on National Grid Reference (NGR) SS 5276520904. It is situated approximately 3km northeast of Great Torrington town centre.

The site is located upon restored landfill within a remote area and within Coastal UK Group Limited's wider site ownership boundary including a landfill site, household waste recycling centre and composting facility. Immediately to the north, west, south and east of the site boundary lies restored landfill. To the east of the wider boundary lies the local road transport network that connects the Site to surrounding areas. The landscape surrounding the Site is primarily comprised of open/agricultural land. There are no residential properties within 500m of the Site; the nearest being 530m to the southwest.

Further information on the Site's setting can be found in the Environmental Risk Assessment in Section 4 of the application.

The site is accessed via a track off an unnamed road that runs perpendicular to Belle Vue Cross Rd (B3232).

The Site Location is illustrated on Drawing 001 and the Site Layout is illustrated in Drawing 002, both can be found in Section 3 of this application.

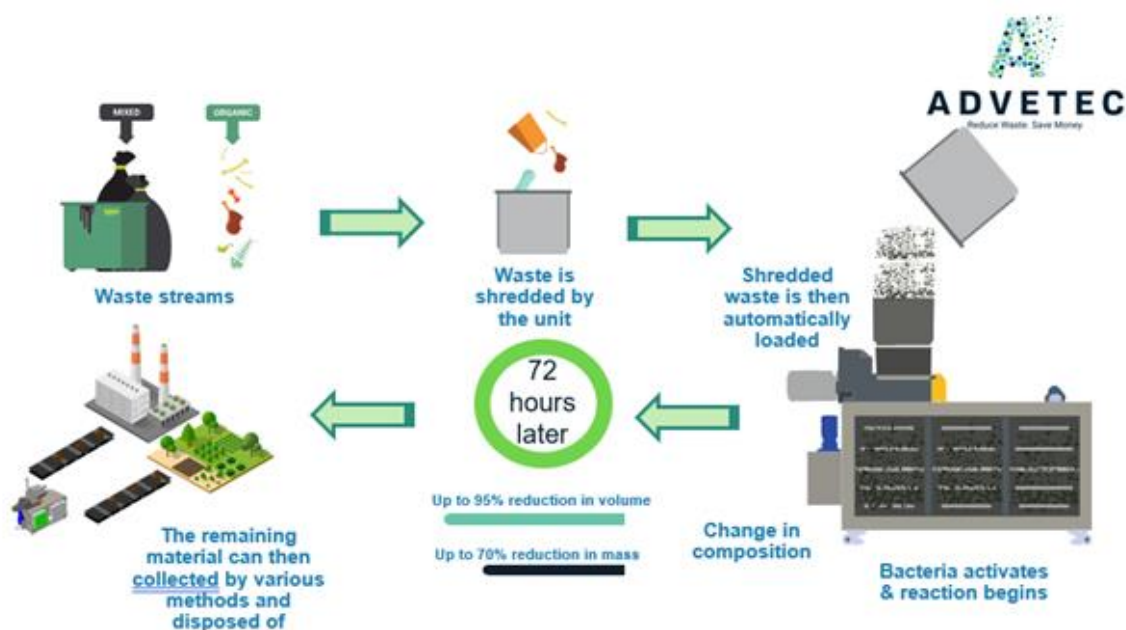
### 1.2 Aerobic Digestion

Aerobic digestion is a natural bacterial process in which micro-organisms breakdown organic material in the presence of oxygen. Aerobic bacteria digest and consume the organic material, typically only producing by-products of heat, water vapour, carbon dioxide (CO<sub>2</sub>) and a post-process floc.

Aerobic digestion has typically been used to treat sewage sludge however the process has been proved to also be an effective method of solid waste treatment, reducing volume, mass and moisture content and enabling simpler handling for the operator. The process is able to accept a range of feedstocks including food waste, green waste, selected industrial waste and food by-products.

A diagrammatic overview of an aerobic digestion process is provided as Figure 1.





**Figure 1 Aerobic Digestion Process Overview**

## 2.0 Overview of Proposed Development

The proposed aerobic digesters will treat mixed municipal waste, EWC code 20 03 01 and outputs from the pre-processing of mixed municipal waste on site, EWC waste code 19 12 12.

Advetec have produced a range of aerobic digester systems. It is proposed that Advetec’s XO22 model is installed at the Site.

Coastal proposes to install two XO22 units at the Site which will treat up to 26 tonnes of waste per day, approximately 9,490 tonnes per annum. Following digestion, an approximate mass reduction of 62.5% and volume reduction of 70% is expected, resulting in an approximate output of 8 tonnes per day of floc suitable for onwards recovery off-site as Solid Recovered Fuel (SRF).

The waste will be loaded into a bulk loading hopper which connects to a stand-alone shredder, both of which will be located externally to the building. The shredder will shred the waste into 50mm<sup>2</sup> particle size. The shredded waste is then augered into the digesters, where bacteria and bio-stimulants are automatically dosed into the waste. The digesters will be located underneath the cover of the waste transfer station building on Site.

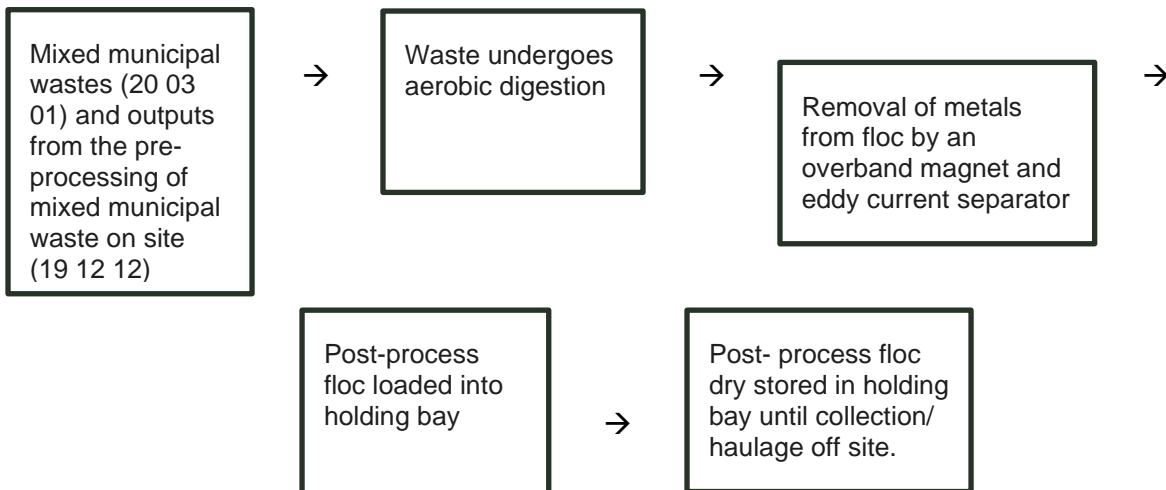
The XO22 has four chambers, with an internal mass of 22m<sup>3</sup> at any given point, through which the waste is moved for digestion. Movement is by a centralized shaft with engineered paddles that rotate according to pre-programmed algorithms. The paddles allow the system to stay aerobic while ensuring residence, and index mass throughout the process. A video demonstrating how Advetec’s XO technology works can be found [here](#).

The only by-products of the aerobic digestion system are water vapour, carbon dioxide, condensate and a post-process residue (floc). The process uses exothermic aerobic respiration; therefore, it generates its own heat which is channelled internally back into the process, using a closed-loop heating system. The process does not use water. Condensate will be collected in a container and disposed of off-site.



The entire aerobic digestion process takes approximately 72 hours to complete, after completion the post-process floc will be passed by an overband magnet and eddy current separator to remove small pieces of ferrous and non-ferrous metal before being collected internally within the building. It will be collected into a holding bay and dry stored until collection / haulage off site. The process is designed to be continuous in nature however as opposed to being a batch process. As such, the system is fed regularly (such as once or twice a day) and continually discharging floc after digestion is completed.

A basic process flow diagram of this process is provided as Figure 2.

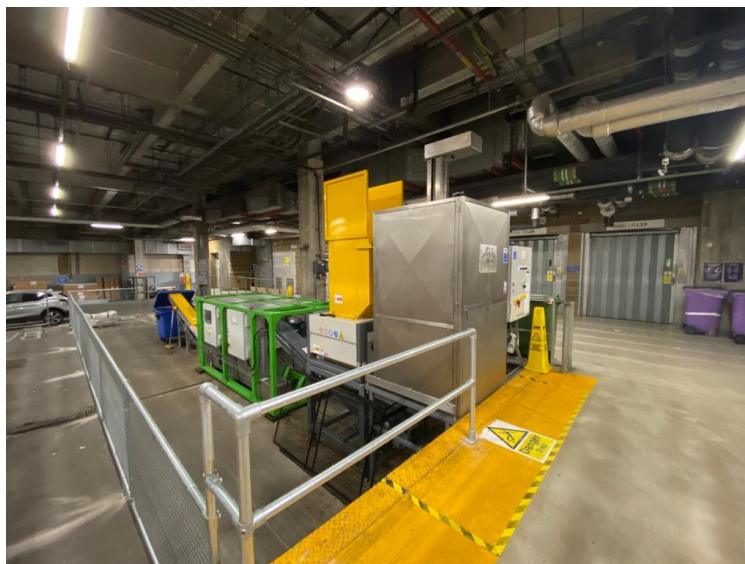


**Figure 2 Process Flow Diagram of Site Treatment and Storage**

The XO22 units are accessible via a regulated cloud-based portal. Data points are collected, logged and stored at programmable intervals, including temperature, humidity, rotational speeds, emissions monitoring, power consumption, maintenance schedules. Alert and alarm levels are programmed into the system to notify in the event of system errors or parameters moving out of range. There is also an in-line gas monitoring system which continuously monitors levels of methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), volatile organic compound (VOCs) and hydrogen sulphide (H<sub>2</sub>S), which in the event of detection of any of these parameters, an alarm is raised.

The Environmental Permit Boundary and layout of the Site is illustrated on on Drawing 002-Site Layout and Permit Boundary Drawing. A picture of an XO3 unit which treats up to 1.5 tonnes of waste per day can be seen in Figure 3 for illustrative purposes only.





**Figure 3 Advetec Installation at Cribbs Causeway**

A photo of the type of shredder unit to be employed is included as Figure 4 below.



**Figure 4 Example Shredder Unit**

### **3.0 Permitted Waste Operations**

The activities at the Site will be regulated as a bespoke waste operation as per the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

This permit application seeks to vary Deep Moor Waste Transfer Station's existing waste management licence to include the use of two Advetec aerobic digestors and extend the Site's permit boundary.

Waste management activities as described in the Waste Framework Directive 2008, which are currently undertaken as part of the waste transfer operation on site include:



- D15 - Storage of waste pending any of the operations listed in paragraphs 1 to 14 of the environmental permit, but excluding temporary storage, pending collection, on the site where the waste is produced
- R13 - Storage of wastes pending any of the operations listed in paragraphs 1 to 12 of the environmental permit, but excluding temporary storage, pending collection, on the site where it is produced;
- D14 - Repackaging of waste prior to the waste being submitted to any of the operations listed in paragraphs 1 to 13 of the environmental permit;
- D9 - Physio-chemical treatment not specified elsewhere in the environmental permit which results in final compounds or mixtures which are discarded by means of any of the operations listed in paragraphs 1 to 12 of the environmental permit;
- R3 - Recycling/reclamation of organic substances which are not used as solvents including composting and other biological transformation processes;
- R4 - Recycling/reclamation of metals and metal compounds; and
- R5 - Recycling/reclamation of other inorganic materials.

The two XO22 Advetec units on Site will have a capacity to treat up to 9,490 tonnes per annum (tpa) of non-hazardous residual municipal waste and other non-hazardous wastes (including mixtures of materials) from the pre-pick processing of mechanically treated wastes, to reduce the volume and mass of waste prior to transfer off-site for recovery.

### 3.1 Waste Types and Quantities

The maximum quantity of waste proposed for treatment by aerobic digestion is up to 26 tonnes per day, 9,490 tonnes per annum. Table 1 lists the wastes which are proposed for treatment by aerobic digestion.

**Table 1 List of Wastes Proposed for Treatment**

List of Waste Code	Description
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 - outputs from the pre-processing of mixed municipal waste on site
20	MUNICIPAL WASTES AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES INCLUDING SEPARATELY COLLECTED FRACTIONS
20 03	Other municipal wastes
20 03 01	Mixed municipal waste

### 3.2 Waste Storage

Waste awaiting processing will be stored within a holding bay at Deep Moor's Waste Transfer Station in accordance with their currently permitted arrangements on Site.





The post-process floc will be collected into a holding bay and dry stored until collection / haulage off site.

## 4.0 Application Overview

This environmental permit application describes how the Site has been designed and will be operated in accordance with the relevant technical standards. In addition to this Non-Technical Summary, the application comprises the following elements, each of which are described below:

- Section 1 - Application forms (Parts A, C2, C4 and F1);
- Section 3 – Drawings;
- Section 4 - Environmental Risk Assessment;
- Section 5 – Site Condition Report;
- Section 6 – Operations and Environmental Management Plan; and
- Section 7 – Fire Prevention Plan

### 4.1 Application Forms

Parts A, C2, C4, and F1 of the EA's application forms have been completed in support of the application and are enclosed as Section 1 of the application.

### 4.2 Drawings

Section 3 contains drawings for the Site, these include:

- Drawing 001 Site Location;
- Drawing 002 Site Layout and Permit Boundary;
- Drawing 003 Site Setting; and

### 4.3 Environmental Risk Assessment

The Environmental Risk Assessment has considered odour, fugitive emissions, dust, releases to water, litter, mud, birds, vermin and insects, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described, potential hazards from the proposed development are not likely to be significant.

The Environmental Risk Assessment is enclosed in Section 4 of this application.

### 4.4 Site Condition Report

The Site Condition Report details the condition of soil and groundwater at the Site. It contains the information necessary to determine the current state of soil and groundwater conditions at the Site, so that a comparison can be undertaken upon the eventual cessation of activities.

A copy of the Site Condition Report is provided in Section 5 of this application.

### 4.5 Operations and Environmental Management Plan (OEMP)

The OEMP describes how the Site has been designed and will be operated in accordance with relevant technical standards and guidance. The document includes an overview of the



technology, operational processes, emissions monitoring and reporting implemented at the Site.

The OEMP is enclosed in Section 6 of this application.

## 4.6 Fire Prevention Plan (FPP)

The Fire Prevention Plan details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The FPP is enclosed in Section 7 of this application.

## 5.0 Key Technical Standards

Key technical standards laid out in the following documents have governed the design and proposed operation of the Site:

- Develop a management system: environmental permits, April 2023;
- Control and monitor emissions for your environmental permit, November 2022;
- Environmental Permitting Regulations - Site Condition Reports Guidance and Templates' (version 3 April 2013);
- Risk assessments for your environmental permit, November 2023; and
- Biological waste treatment: appropriate measures for permitted facilities, February 2024.

The Site is located over 500m from the nearest receptor, the nearest being 530m to the southwest. Due to the significant distance from residential areas and areas of cultural and natural heritage, the risk to sensitive receptors is considered low. However, the following control measures that will be implemented to ensure the Site does not give rise to significant environmental impact have been determined through the risk assessment process and are summarised below:

- Activities are managed in accordance with an environmental management system;
- Performance against the management system is audited at regular intervals;
- Processing of residual municipal waste and other non-hazardous wastes (including mixtures of materials) from the pre-pick processing of mechanically treated wastes using the Advetec units will reduce the time it is stored on site, thereby resulting in a reduced risk of odour impact;
- Noise management measures will be employed to minimise emissions of noise including;
  - Machinery is operated so as to minimise noise;
  - Vehicles adhere to a speed limit when accessing the Site.
- Strict waste acceptance procedures, detailed in the OEMP, will be adhered to prevent odour and contamination.
- Daily observational monitoring is undertaken at the Site boundary, for odour, noise and dust emissions.



## 6.0 Conclusion

The overall conclusion from the studies undertaken as part of the application is that there is unlikely to be a significant environmental impact as a result of the proposed operation of the Advetec aerobic digesters at Deep Moor Waste Transfer Station.

Coastal UK Group Ltd is fully committed to ensuring the highest standards are met and will undertake its activities in a manner consistent with best industrial practices and in accordance with the company's environmental policy and management system.

It is therefore considered that the permit variation should be issued as detailed above.



