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24 October 2005

Reg No: 53-3

Re: Waste Licence Application in the name of Greenstar Limited for a facility at  
Bray Depot, Fassaroe, Bray, Co. Wicklow – Reg No. 53-3

Dear Mr. Harrington,

I am to advise you that the Agency has received an application for a Waste Licence from Greenstar Limited, for a facility located at Bray Depot, Fassaroe, Bray, Co. Wicklow.

The applicant proposes, as part of this application, to provide for the discharge of process effluent to a sewer, which the applicant has stated is vested in, or controlled by, your Council- Process effluent includes trade effluent or other matter (other than domestic sewage or storm water). I enclose copy extracts fi-om the application form, which detail proposed discharges.

The provisions of Section 52 of the Waste Management Acts, 1996 to 2003, provides that the Agency shall obtain the consent of the sanitary authority to the proposed discharge from an activity which involves the discharge of trade effluent or other matter (other than domestic sewage or storm water), to a sewer vested **in** or controlled **by** a sanitary authority.

In order to expedite the Agency's consideration of this waste licence application, I am to request your authority's consent to the proposed discharge/s. It should be noted that, your authority's consent may be subject to such conditions **as** your authority considers appropriate as provided for in Section 52 of the Waste Management Acts, 1996 to 2003 and Section 99E (3) of the Environmental Protection Agency Acts, 1992 **and** 2003. Your attention is drawn to paragraphs (3) and (4) of the attached copy of the relevant section of the Act. For your convenience please find attached a reply form including a list of draft conditions compiled by the Agency.



In accordance with paragraph (2) of this section of the Act, you are requested to forward your response within 3 weeks of the date of this letter. Please note that any decision given after the expiry period shall be invalid and in those circumstances the Agency may proceed to determine the application concerned as if consent was obtained. Ms. Pernille Hermansen is dealing with this matter and can be contacted at the Licensing Unit, Office of Licensing & Guidance, Johnstown Castle Estate, Co. Wexford (Tel. No. 053 60600), if you have any queries.

Your co-operation in this matter is appreciated.

Yours sincerely,



Eve O'Sullivan  
**Programme Officer**  
**Licensing Unit**  
**eveOffice of Licensing & Guidance**

**Section 99E (3) & (4) of the Environmental Protection Agency Acts, 1992 and 2003**

- (3) Subject to subsection (4), a consent under subsection (1) may be granted subject to or without conditions and if it is granted subject to conditions the Agency shall include in the licence or revised licence concerned conditions corresponding to them or, as the Agency may think appropriate, conditions more strict than them.
- (4) The conditions that may be attached to a consent by a sanitary authority under this section are the following and no other conditions, namely conditions-
- (a) relating to-
    - (i) the nature, composition, temperature, volume, level, rate, and location of the discharge concerned and the period during which the discharge may, or may not, be made,
    - (ii) the provision, operation, maintenance and supervision of meters, gauges, manholes, inspection chambers and other apparatus and other means for monitoring the nature, extent and effect of emissions,
    - (iii) the taking and analysis of samples, the keeping of records and furnishing of information to the sanitary authority,
  - (b) providing for the payment by the licensee to the sanitary authority concerned of such amount or amounts as may be determined by the sanitary authority having regard to the expenditure incurred or to be incurred by it in monitoring, treating and disposing of discharges of trade effluent, sewage effluent and other matter to sewers in its functional area or a specified part of its functional area,
  - (c) specifying a date not later than which any conditions attached under this section shall be complied with,
  - (d) relating to, providing for or specifying such other matter as may be prescribed.

**SANITARY AUTHORITY RESPONSE**  
**re: SECTION 52 OF THE WASTE MANAGEMENT ACTS, 1996 to 2003**

Name & Address of Sanitary Authority: , , , , ,

Waste Reg. No. 53-3

Waste Facility: Bray Depot, Fassaroe, Bray, Co. Wicklow,

Waste Licence Applicant: Greenstar Limited

Consent: Indicate Yes to one of the following statements:

Consent granted subject to the consent conditions outlined below	
Consent granted without conditions	
Consent refused <sup>Note 1</sup>	

**Note 1** Where it is proposed to refuse permission the reasons for the refusal should be clearly outlined in the response.

GENERAL CONSENT CONDITIONS	Condition to be included (Yes/No)
1. No specified emission from the installation shall exceed the emission limit value-set out in <i>Schedule B: Emissions Limits to Sewer</i> . There shall be no other emission to sewer of environmental significance.	
2. The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as out in <i>Schedule C</i> .	
3. Monitoring and analytical equipment shall be operated and maintained as necessary so that monitoring accurately reflects the discharge or emission.	
4. The licensee shall permit authorised persons of the Agency and the Sanitary Authority to inspect, examine and test, at all reasonable times, any works and apparatus installed, in connection with the process effluent, and to take samples of the process effluent.	
5. 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 agreed 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. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.	
6. The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence.	
7. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.	
8. The licensee shall at no time discharge or permit to be discharged into the sewer any liquid matter or thing which is or may be liable to set or congeal at average sewer temperature or is capable of giving off any inflammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.	
9. In the event of any incident which relates to discharges to sewer, having taken place, the licensee shall notify the Agency, Local Authority and Sanitary Authority as soon as practicable after the incident.	

**ADDITIONAL GENERAL CONSENT CONDITIONS**  
**in respect of discharges or emissions to sewers, in accordance with Section 52**  
**of the Waste Management Acts, 1996 to 2003**  
*(specify, if required)*


## Limit Values for Process Effluent to Sewer

### *Schedule B: Emission Limits*

Waste licence application Register No. 53-3

Emission Point Reference No: \_\_\_\_\_

Emission to (*sewer description*): \_\_\_\_\_

Volume to be emitted: Maximum in any one day: \_\_\_\_\_ m<sup>3</sup>

Maximum rate per hour: \_\_\_\_\_ m<sup>3</sup>

Parameter <i>(delete parameters which are not applicable)</i>	Emission Limit Value	
	Daily Mean Concentration (mg/l)	Daily Mean Loading (kg/day)
BOD		
COD		
Suspended Solids		
PH		
Temperature		
<b>ADDITIONAL PARAMETERS</b>		
<i>(if required)</i>		

## Frequency of Monitoring Process Effluent to Sewer

### *Schedule C*

Waste Licence application Register No. 53-3

Emission Point Reference No: \_\_\_\_\_

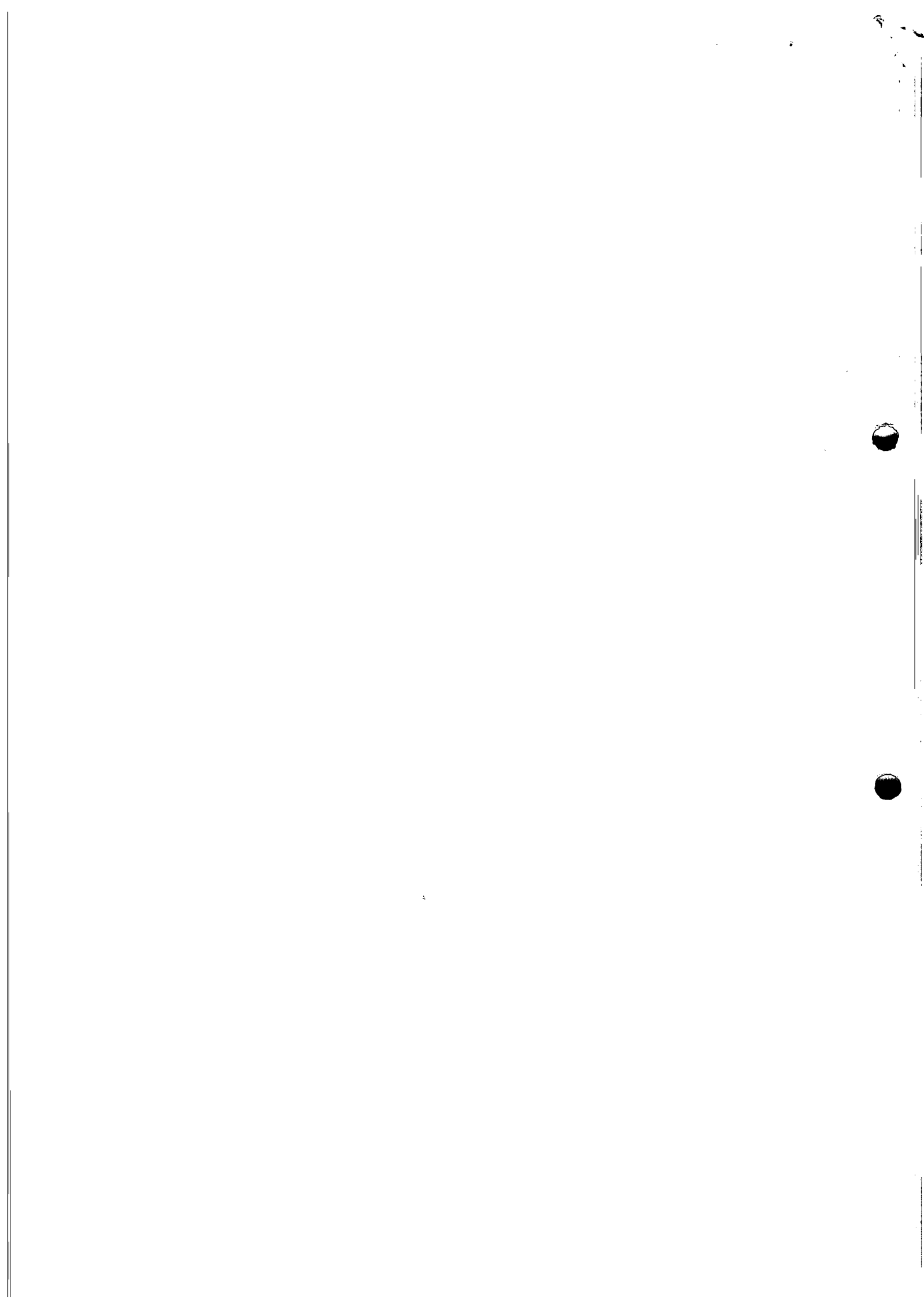
Parameter <i>(delete parameters which are not applicable)</i>	Monitoring Frequency <i>(e.g. monthly, quarterly, annually)</i>	Sampling Type <i>(grab, composite)</i>
Flow to sewer		
Temperature		
pH		
BOD		
COD		
Suspended Solids		
<b>ADDITIONAL PARAMETERS</b> <i>(# required)</i>		

SANITARY AUTHORITY CHARGES	
Charge per litre of process effluent (per 52 of the Water Management Acts 1996 to 2003)	
Payment Frequency	

Signed on behalf of

\_\_\_\_\_

Date \_\_\_\_\_





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Application submitted 10/9/04

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## 2. ARTICLE 12 (1)

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The following is provided in compliance with Article 12(1) of the Waste Management (Licensing) Regulations, 2000.

### Article 12 (1) (a)

#### Applicant Details

*greenstar* Ltd.,  
Bray Depot,  
Fassaroe,  
Bray,  
Co. Wicklow.

Telephone No: 01 -2829610  
Fax No. 01 - 2050774

#### Name and Address for Correspondence

Mr. Micheal Geary,  
*greenstar* Ltd.,  
Unit 6, Ballyogan Business Park,  
Ballyogan Road,  
Sandyford,  
Dublin 18.

Telephone No: 01 - 2947900  
Fax No. 01 - 2947990

### Article 12 (1)(b)

The relevant planning authority is Wicklow County Council.

### Article 12 (1)(c)

The proposed changes to facility activities will result in the discharge of a trade effluent and sanitary wastewater to a new foul sewer on an adjoining property which in turn will connect to a foul sewer controlled by Wicklow County Council. Details of the quality and volume of the wastewater is presented in Section 5 of the EIS that accompanies this application. The location of the outfall from the facility connecting to the new foul sewer is shown on Drawing No. B8575-C003-A Proposed Site Layout with Drainage and Site Boundary.

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EIS

submitted 10/9/04.

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## NON-TECHNICAL SUMMARY

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### Introduction

This Environmental Impact Statement (EIS) examines the potential impacts and significant effects on the environment of a proposal to change the licensed waste activities at the *greenstar* Ltd's (*greenstar*) materials recovery and transfer facility at Fassaroe, Bray, County Wicklow (Waste Licence Reg. No. 53-2).

The current licence allows *greenstar* to accept and process on site for recovery and disposal 129,500 tonnes of waste per annum, comprising household, commercial and construction and demolition non hazardous waste. The facility is also licensed to biologically treat up to 2,000 tonnes of biodegradable and green wastes per annum.

The proposed changes are: -

### Increase in Waste Inputs

*greenstar* proposes to increase the volumes of waste accepted at the facility from the current 129,502 to 200,000 tonnes. It is not proposed to change the types of waste accepted. The increase will be *pro rata* for all the waste types, with the exception of hazardous waste, as shown on Table 1.1.

**Table 1.1** Proposed Increase in Waste Volumes

<b>Waste Type</b>	<b>Maximum Tonnage Per Annum (Current)</b>	<b>Maximum Tonnage Per Annum (Proposed)*</b>
Household	25,000	38,600
Commercial	69,500	107,358
Construction and Demolition	35,000	54,040
Hazardous (Batteries)	2	2
<b>Total</b>	129,502	200,000

\*Subject to Market Conditions

### Biowaste Treatment

It is proposed to increase the biowaste treatment capacity from 2,000 tonnes to 10,000 tonnes per annum. This will require changes to the design and location of the biowaste treatment system to accommodate the increased volumes.

### Capping: System

The licence specifies the capping system that should be **installed** over the former landfill area. This is a prescriptive design and does not take into consideration site specific conditions. *greenstar* proposes a different specification for the capping of the landfill which is based on site conditions and the results of the environmental monitoring programme.

### Process and Sanitary Wastewater

Process and sanitary waste water generated at the facility is either removed off-site for treatment or discharged to **an** on site septic tank. *greenstar* proposes to discharge all process and sanitary waste water to a new foul sewer which connects to the municipal waste water treatment plant in Bray. Following the connection the use of the on-site septic tank will cease. Part of the agreement in relation to the sewer connection involves the transfer of ownership of a small portion of the existing facility.

### Operational Hours

*greenstar* is seeking to have the authority, subject to the Agency's approval to amend the operational and waste acceptance hours at the facility. This will allow the more efficient operation of the facility and meet customer demands in relation to waste collection.

### Other Changes

*greenstar* is also seeking the authority to engage waste collectors and waste treatment/recycling/disposal service providers without the prior approval of the Agency. This will not result in any environmental impact.

### Public Consultation

*greenstar* consulted with the EPA and the Eastern Regional Fisheries Board. *greenstar* also sought comments from the general public by advertising their intention to develop the facility in a newspaper circulating in the area.

### Waste Management Policy

National policy on waste management is guided by the Department of the Environment and Local Government's policy statement of September 1998, "Changing **Our** Ways" and the more recent statement 'Waste Management – Taking Stock and Moving Forward' in which the Government reaffirms its commitment to the EU hierarchy of waste management.

A Draft National Strategy on Biodegradable Waste **was** published in April 2004, which outlines Government policy in relation to diverting biodegradable wastes from landfill states *'For biodegradable waste that must be collected and managed, materials recycling and biological treatment are favoured, since they recover the material for new beneficial uses.'*

### Waste Acceptance and Handling

All wastes accepted at the facility are subject to both waste acceptance measures and waste handling measures that have been approved by the Agency. It is not proposed to change these approved acceptance and handling procedures. The increase in the volumes of waste materials will not alter the materials recovery and transfer handling procedures currently successfully employed at the facility. The **only** new waste handling operations proposed relate to the proposed extension to the biowaste treatment process.

### Biowaste Treatment Plant

The biowaste treatment plant will be developed on an impermeable concrete slab. All leachate and contaminated run-off from process areas will be collected for recirculation in the process. Any surplus liquid will be collected and stored in holding tanks prior to discharge to the foul sewer. Roof water from the reception building and run-off from non-process areas of the biowaste treatment area will be discharged to the existing surface water drainage system.

### Plant and Equipment

Daily operations involves the use of front loading shovels, conveyors, trommels, mechanical grab(s), trommel Screen(s), crusher, forklift(s), tractor **units** and trailer etc. The proposed biowaste treatment system will involve the use of new plant/equipment similar to those already in use at the facility and additional process air management and control plant.

### Drainage

Surface water from the hard standing and roofed areas collects in drains and is piped to soakways. It is not proposed to alter the existing surface water drainage in the materials recovery area. Run-off from the roof of the biowaste reception building and non process areas will be collected and directed to the existing surface water drainage system.

Process wastewater comprises washwater from the vehicle cleaning and washing of the floors in the transfer station buildings and in the compactor and loading area. The wash water from the floor of the compactor and loading area is collected and disposed of off-site. The wash water from the vehicle wash drains into a sump which is pumped out to the on-site septic tank. Waste water from the toilets also goes to the septic tank.

It is proposed to discharge **all** process and sanitary wastewater to the new foul sewer. The process wastewater will discharge to the sewer via a petrol/oil interceptor while the sanitary waste water will discharge directly to the foul sewer.

#### 1.4.1 Increases in Waste Inputs

*greenstar* proposes to increase the volumes of waste accepted at the facility from the current 129,502 to 200,000 tonnes. It is not proposed to change the types of waste accepted. The increase will be *pro rata* for all the waste types, with the exception of hazardous waste, as shown on Table 1.1.

**Table 1.1** Proposed Increase in Waste Volumes

Waste Type	Maximum Tonnage Per Annum (Current)	Maximum Tonnage Per Annum (Proposed)*
Household	25,000	38,600
Commercial	69,500	107,358
Construction and Demolition	35,000	54,040
Hazardous (Batteries)	2	2
Total	129,502	200,000

#### 1.4.2 Biowaste Treatment

It is proposed to increase the amount of waste that can be composted from 2,000 tonnes to 10,000 tonnes per annum. This will result in a change in the biowaste treatment system from that currently allowed in the waste licence and will also require the relocation of the biowaste treatment plant to accommodate the increased volumes. The proposed location of the alternative biowaste treatment plant and details of its design are presented in Section 5.

#### 1.4.3 Capping System

The current licence specifies the capping system that should be installed over the former landfilled areas. This is a prescriptive design and does not take into consideration site specific conditions. *greenstar* proposes a different specification for the capping system, which is based on site conditions and the results of the environmental monitoring programme. Details of the proposed capping system are provided in Section 5.

#### 1.4.4 Process and Sanitary Wastewater

Currently process and sanitary wastewater generated at the facility is either removed off-site for treatment or discharged to an on site septic tank and proprietary wastewater treatment system and percolation area, *greenstar* proposes to discharge all process and sanitary wastewater to a new foul sewer currently being installed on an adjoining property. This sewer will connect to the municipal foul sewer.

## 5.16 Wastewater

### 5.16.1 Current System

Process wastewater currently generated at the facility comprises washwater from the vehicle cleaning and washing of the floors in the transfer station buildings and in the compactor and loading area. The wash water from the vehicle wash drains into a sump, which is pumped out, to a balancing tank which controls flows through to the on-site septic tank (constructed and installed in compliance with the requirements of S.R. 6 1991) and then to a Puraflo biofiltration system.

Waste water from the facility toilets is directed to the on-site septic tank where it receives primary treatment. The partially treated effluent from the tank is pumped by a float control pump onto a 4 modular Puraflo™ biofiltration system for secondary treatment. Final effluent subsequently receives tertiary polishing in a percolation area.

### 5.16.2 Proposed System

It is proposed to discharge the existing process and sanitary wastewater generated at the site to a new foul sewer being installed on lands adjacent to the facility as part of commercial development. The connection to the new proposed foul sewer is shown on Drawing No. B8575-C003-A. The process wastewater will discharge via a petrol/oil interceptor to the new sewer which in turn connects to the municipal sewer that outfalls to the municipal wastewater treatment plant in Bray. The sanitary waste water will discharge directly to the foul sewer.

Process wastewater generated by the biowaste treatment plant will include two types: -

1. *Pre-sanitisation*; run-off from in-vessel biowaste treatment floor wash downs, blending operations in the reception building and leachate from the in-vessel units, and
2. *Post-sanitisation*; run-off from the ASPs.

It is proposed to direct wastewater generated in the reception building and the in-vessel units to a holding tank for recirculation at the blending stage. Run-off from the ASPs will be directed to a holding tank for settling and subsequent re-circulation to the ASPs. Surplus run-off from the ASPs will be directed from this holding tank to a surplus storage tank from where it will discharge to the foul sewer.

During normal operations all leachate generated in the reception building and in-vessel units will be re-used in the biowaste treatment process. On occasions, surplus leachate may be generated and in this event it will be directed to the surplus storage tank. The contents of this storage tank will discharge via a petrol/oil interceptor to the new foul sewer. The revised drainage layout for the biowaste treatment area is shown on Drawing No. B8575-C005-A.



Unsuitable materials, e.g. batteries, gas cylinders etc. removed from the material delivered to the site and which cannot be removed by the delivery vehicle are stored on-site pending removal off-site for disposal at appropriately licensed recycling or treatment facilities.

On-site maintenance of plant and vehicles takes place in the maintenance workshop located behind the transfer building. Waste oils and batteries generated during maintenance are removed off-site for disposal/recovery at licensed treatment/recovery facilities.

## 5.18 Air Management

Materials recovery and transfer and biowaste treatment activities have the potential to generate air emissions including dusts and odours. In addition biowaste treatment processes are a potential source of bioaerosols. Details on the control and mitigation measures to minimise air emission impacts are presented in Section IO.

## 5.19 Nuisance Control

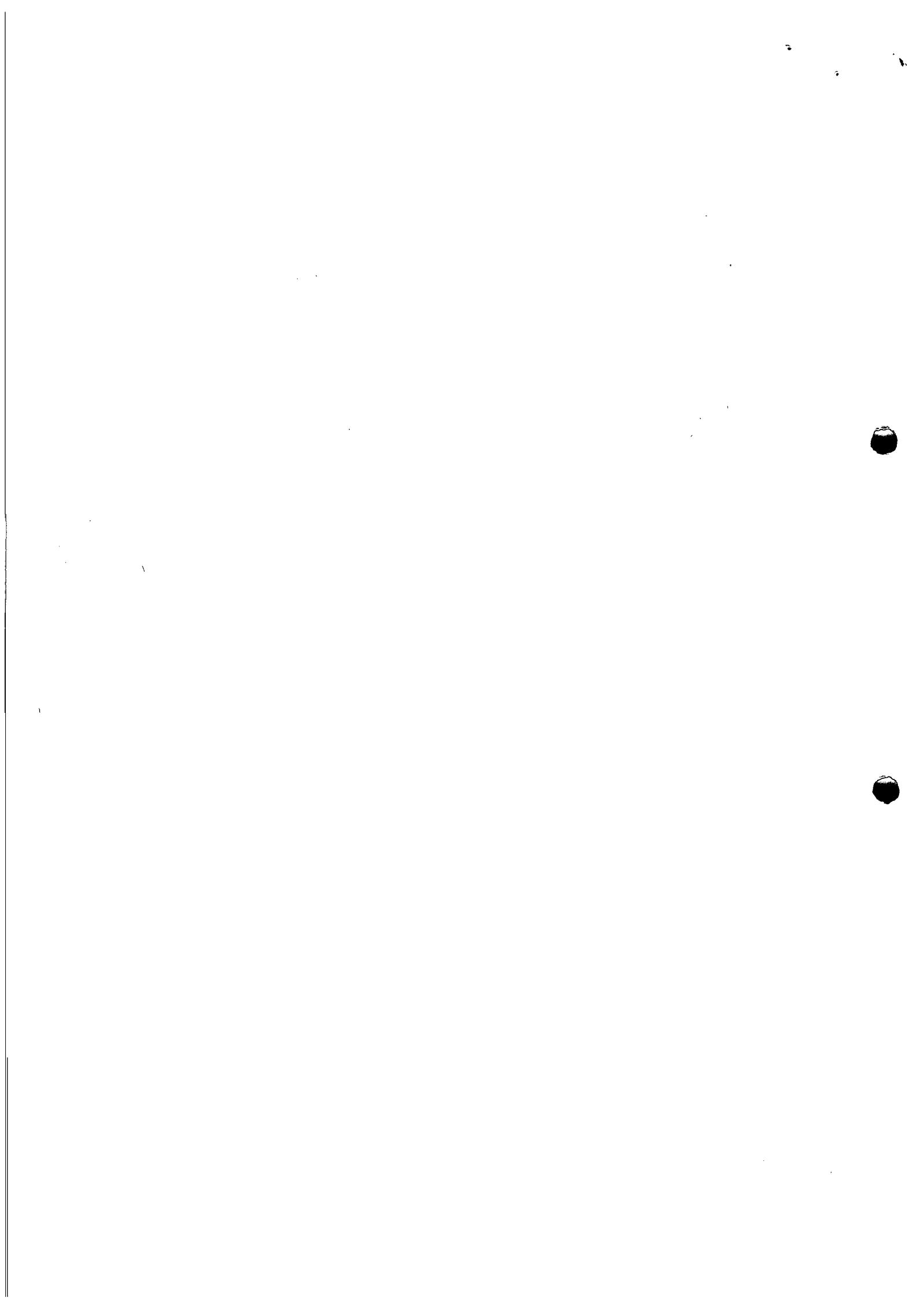
### 5.19.1 Litter

The current waste activities do not generate litter. All waste delivered to and transferred off the facility are in fully enclosed or covered vehicles. All current and proposed waste handling operations including waste loading and off-loading, and processing will only be carried out inside the buildings with the exception of C&D wastes, which do not contain significant amounts of material that can cause litter. Wastes, apart from C&D, will not be off-loaded in open areas and recovered materials will not be stored outside the buildings. In the event of an incident, which results in windblown litter, facility personnel will ensure its immediate collection.

### 5.19.2 Birds

The current waste handling practices minimise the potential attractiveness of the site for birds and birds are not a nuisance. All organic or biodegradable waste (food source) arriving on-site goes directly to Transfer Building and is not left in the open for any period before off-site removal. The waste used in the reclamation and restoration of the facility comprises solely inert material, which is not attractive to birds.

Wastes delivered to the proposed biowaste treatment plant will only be off-loaded inside the waste reception building. The in-vessel units will eliminate the biowaste materials as a source of bird attraction. At the end of the in-vessel treatment cycle the vast majority of the food value has been removed and this material and the finished product is not attractive to birds.



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Art. 14 reply submitted 12/9/05

3. *Submit dust monitoring results for 2004 and 2005 including a full interpretation of the, obtained results.*

Dust monitoring results for 2004 including a full interpretation of the obtained results are included in Appendix 2. As the application for review was submitted in September 2004 it was not possible to include monitoring data for 2005 at that time. Dust monitoring has not been completed for 2005.

4. *Submit landfill gas monitoring results for 2004 and 2005 including a full interpretation of the obtained results.*

Landfill gas monitoring results for 2004 and 2005 including a full interpretation of the obtained results are included in Appendix 2. As the application for review was submitted in September 2004 it was not possible to include monitoring data for 2005 at that time.

5. *Submit leachate monitoring results for 2004 and 2005 including a full interpretation of the obtained results.*

Leachate monitoring results for 2004 and 2005 including a full interpretation of the obtained results are included in Appendix 2. As the application for review was submitted in September 2004 it was not possible to include monitoring data for 2005 at that time.

6. *Provide details and an assessment of the proposed wastewater emission from the facility to the foul sewer, include details on any proposed mitigation measures. Complete Tables E.3(i) Emissions to sewer and E.3(ii) Emissions to sewer - Characteristics of the emission of the application form for each emission point to sewer e.g. toilet/canteen, wheel wash area, compactor etc.*

## **Wastewater**

### *1.1.1 Existing & Proposed Systems*

Sanitary wastewater from the facility toilets is directed to the on-site septic tank where it receives primary treatment. The partially treated effluent from the tank is pumped by a float control pump onto a 4 modular Puraflo™ biofiltration system for secondary treatment. Final effluent subsequently receives tertiary polishing in a percolation area.

### 1.1.4 Volume and Quality

#### **Biowaste Area**

As the biowaste treatment system is typically a net water user the majority of the wastewater will be floor wash down from the transfer buildings and the biowaste reception building. It is estimated that approximately up to 2 m<sup>3</sup> of process wastewater from the biowaste area will discharge to the sewer on a daily basis.

The floor of the biowaste reception building will be swept before washing to remove large items. The floor drains will be provided with grids to prevent entry of large items into the drains. All oils and other chemicals will be stored in dedicated bunded storage areas, which will reduce the potential for accidental releases of oils or chemicals to foul sewers. Facility personnel will be trained in spill response actions and adequate spill containment and clean up equipment will be maintained on-site.

Storm water from the site will not be discharged to the foul drainage system. Automatic cut-off valves will be installed on the foul sewer drainage system before the connection to the new sewer to prevent the direct discharge of firewater run-off in the event of a fire on the site.

#### **Sanitary / Canteen Discharges**

The total number of employees on site over a 24-hour period will be approximately 70. Based on a discharge rate of 220 litres/person/day, this equates to a dry weather flow of 0.18 litres/sec or approximately 15 m<sup>3</sup>/day.

#### **Transfer Buildings**

Each of the waste transfer buildings will require floor washdown. This wastewater will be collected by a series of floor drains within the buildings.

The volume of wash water is estimated at 250 litres per day per 500 m<sup>2</sup> floor area. The run-off from the existing transfer building will be 500 litre/day, from the Phase 1 transfer building 850 litres/day and from the proposed Phase 2 transfer building 1000 litre/day.

All wastewater generated at the site will discharge to the new pump sump from where it will discharge to the municipal sewer. Tables E.3(i) and E.3(ii) of the waste licence application form are included in Appendix 3.

Table 5.3 indicates the likely quality of the process and sanitary wastewater from all activities that will be discharged to municipal sewer.

Monitoring will only be carried out on the process wastewater from the washdown of the transfer buildings and the discharge from the biowaste area combined. It is not proposed to monitor the sanitary wastewater nor is it proposed to install flow meters or composite samplers as the volume of wastewater will be small and only occur intermittently during washdown periods.

Monitoring will be carried out at location **SE-1** as shown on Drawing No. 03072-01 Rev B.

8. *Supply a proposal for the monitoring of process emissions to air from the composting facility including the location(s) of the proposed air emission monitoring points. Revise Drawing No. 03073-01 Rev. A Existing and Proposed Monitoring Location's to include proposed air emission monitoring points and the national grid reference for each monitoring point.*

It is not proposed to change the monitoring programme specified in the existing licence in relation to monitoring air emissions from the composting unit. Schedule C.4 of the licence has set the emission limit values to air from the waste composting process and Schedule **D.6** specifies the monitoring parameters, frequency and methodologies.

The proposed monitoring locations for the composting unit will be agreed in advance with the Agency prior to start of composting operations, as specified in Condition 3.17.4.1.



**WASTEApplication Form**

**TABLE E.3(i): EMISSIONS TO SEWER**(One page for each emission)

**Emission Point:**

Emission Point Ref. N <sup>o</sup> :	SE-1
Location of connection to sewer :	At Site Entrance
Grid Ref. (10 digit, 5E,5N):	E324315.40 N2 18079.10
Name of sewage undertaker:	Wicklow County Council

**Emission Details:**

Normal/day	20m <sup>3</sup>	Maximum/day	25m <sup>3</sup>
Maximum rate/hour	0.8m <sup>3</sup>		

Periods of Emission (avg)	30min/hr	2 hr/day	365 day/yr
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Addendum to  
Art. K reply

submitted 18/10/05

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## 1. INTRODUCTION

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On 28\* July 2005 Greenstar Limited (Greenstar) submitted a response to a Notice issued by the Environmental Protection Agency (Agency) under Article 14(2)(b)(ii) of the Waste Management Licensing Regulations in relation to the application for the review of a Waste Licence, at Fassaroe, Bray, Co. Wicklow (Waste Licence Register No. 53-3).

Since the July submission Greenstar has, in the course of an assessment of current and future site activities, identified a number of proposed operational and infrastructural changes at facility that will require amendments to the information submitted in the Article 14 response. The assessment was triggered by the conditions of the planning permission (Ref. No. 04/1680) issued in July 2005 and a recently concluded agreement with An Bord Gais in relation to the restoration of the area of the site underlain by a gas pipeline and associated wayleave. The proposed changes affect the waste water emissions and the restoration profile.

An assessment of the proposed wastewater emission from the facility to the foul sewer was provided in the July submission. At that time it was proposed to discharge surplus leachate from the biowaste composting area to the municipal sewer via a new foul sewer connection. Condition 6 of the recently issued planning permission prohibits the discharge of leachate to the sewer. A copy of the planning permission is included in Appendix 1. An assessment of the impact of this prohibition on discharges to the sewer is included in Section 2.1 of this report.

An updated ecology report for the facility was included in the July submission. At the time it was proposed to complete the restoration of the site in accordance with the restoration plan specified in Condition 4 of the existing waste licence. This plan did not include for restoration works over the gas pipeline, as at the time it was prepared Greenstar had not received the approval of Bord Gais to carry out works over and adjacent to the pipeline.

However, Greenstar has recently reached an agreement with Bord Gais regarding the proposed method for protecting the gas pipeline and restoring the area occupied by the pipeline and associated wayleave. This will allow the restoration of areas of the site previously excluded from consideration. A revised ecology report, which address the impacts of the amended restoration plan is included in Appendix 2 of this report.

Subsequent to the submission of the Article 14 response in July the Agency verbally requested a colour print of a drawing showing the proposed site boundary in red and an interpretation of the dust deposition monitoring results that had been submitted. The Drawing is included in Appendix 3 and the interpretation of the dust results is presented in Section 4.

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## 2. COMPLIANCE REQUIREMENTS

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### 2.1 Revised Wastewater Assessment .

#### 2.1.1 Existing & Proposed Drainage Systems

Sanitary wastewater from the facility toilets is currently directed to the on-site septic tank where it receives primary treatment. The partially treated effluent from the tank is pumped by a float control pump to a 4 modular Puraflo™ biofiltration system for secondary treatment. The final effluent subsequently receives tertiary polishing in a percolation area.

Process wastewater currently generated at the facility comprises washwater from vehicle cleaning and washing of the floors in the transfer station buildings and in the compactor and loading area. The wash water from the vehicle wash drains into a sump, which is pumped out to a balancing tank that controls flows to the septic tank.

It is proposed to discharge all wastewater generated at the site except from the biowaste area to the new foul sewer installed on lands adjacent to the facility as part of commercial development project. The proposed connection point to the new sewer is shown on Drawing No. B9338-C002-B included in Appendix 3. The wastewater will discharge via a petrol/oil interceptor to the new sewer, which in turn connects to the municipal sewer that connects to the municipal wastewater treatment plant in Bray.

#### 2.1.2 Proposed System - Biowaste Composting Plant

Process wastewater generated by the biowaste treatment plant will include two types: -

1. **Pre-sanitisation;** run-off from in-vessel biowaste treatment floor wash downs, blending operations in the reception building and leachate from the in-vessel units; and
2. **Post-sanitisation;** run-off from the Aerated Static Piles (ASP).

Wastewater generated in the reception building and the in-vessel units will be directed to a holding tank for recirculation at the blending stage. Run-off from the ASPs will be directed to a holding tank for settling and subsequent re-circulation to the ASPs. Excess run-off from the ASPs will be directed from this holding tank to a surplus storage tank from where it will be recirculated to the ASP's.

During normal operations all leachate generated in the reception building and in-vessel units will be re-used in the biowaste treatment process. On occasions, surplus leachate may be generated and in this event it will be directed to the surplus storage tank. The contents of this storage tank will be removed off-site to a wastewater treatment plant. The drainage layout for the biowaste treatment area is shown on Drawing No. B9338-C002-B.

### **2.1.3 Proposed System - Transfer Station Buildings, Wheel Wash Area, Compactor Area, Sanitary**

It is proposed to discharge the existing process and sanitary wastewater generated at the site to the new foul sewer. The wastewater will be directed to the new pump sump located close to the existing biofiltration system from where it will be pumped to the new sewer. As the wastewater is already directed to this area of the site (to the septic tank and bio filtration area) the existing drainage pipework will continue to be used and will be connected to the new pump sump.

### **2.1.4 Volume and Quality**

#### **Biowaste Area**

As the biowaste treatment system is typically a net water user the majority of the wastewater will be floor wash downs and the biowaste reception building. It is estimated that approximately up to 2 m<sup>3</sup> of process wastewater from the biowaste area will discharge to the surplus storage tank on a daily basis. The liquid will be removed from this tank for reuse in the process. If the volume exceeds the amount required for reuse in the composting process the surplus leachate will be removed to an off-site wastewater treatment plant.

The floor of the biowaste reception building will be swept before washing to remove large items. The floor drains will be provided with grids to prevent entry of large items into the drains. All oils and other chemicals will be stored in dedicated bunded storage areas, which will reduce the potential for accidental releases of oils or chemicals to foul sewers. Facility personnel will be trained in spill response actions and adequate spill containment and clean up equipment will be maintained on-site.

Storm water from the site will not be discharged to the foul drainage system. Automatic cut-off valves will be installed on the foul sewer drainage system before the connection to the new sewer to prevent the direct discharge of firewater run-off in the event of a fire on the site.

#### **Sanitary / Canteen Discharges**

The total number of employees on-site over a 24-hour period will be approximately 70. Based on a discharge rate of 220 litres/person/day, this equates to a dry weather flow of 0.18 litres/sec or approximately 15 m<sup>3</sup>/day.

## Transfer Buildings

Each of the waste transfer buildings will require floor washdown. This wastewater will be collected by a series of floor drains within the buildings. The volume of wash water is estimated at 250 litres per day per 500 m<sup>2</sup> floor area. The run-off from the existing transfer building will be 500 litres/day, from the Phase 1 transfer building 850 litres/day and from the proposed Phase 2 transfer building 1000 litres/day.

All wastewater from the transfer buildings will discharge to the new pump sump from where it will discharge to the municipal sewer. Tables E.3(i) and E.3(ii) of the waste licence application form are included in Appendix 4.

Table 2.1 indicates the likely quality of the process and sanitary wastewater from all relevant activities that will be discharged to the municipal sewer.

**Table 2.1** Wastewater Quality

<b>Parameter</b>	<b>Concentration</b>
Temperature	42 °C
BOD	3 500 mg/l
COD	7 000 mg/l
pH	5 – 10
Ammoniacal Nitrogen	100 mg/l
Suspended Solids	2000 mg/l
Sulphates (as SO <sub>4</sub> )	<b>1000</b> mg/l
Detergents (as MBAS)	100 mg/l
Fats, Oils, Grease	100 mg/l

## 2.2 Revised Ecology Report

A copy of the revised Ecology Report for the site is included in Appendix 2.

## 2.3 Site Boundary Drawing

The proposed licence area is shown in red on Drawing No. B9338-C002-B in Appendix 3.



WASTE Application Form

TABLE E.3(i): EMISSIONS TO SEWER (One page for each emission)

Emission Point Ref. N <sup>o</sup> :	SE-1
Location of connection to sewer :	At Site Entrance
Grid Ref. (10 digit, 5E,5N):	E324315.40 N218079.10
Name of sewage undertaker:	Wicklow County Council

Emission Details:

Normal/day	18m <sup>3</sup>	Maximum/day	23m <sup>3</sup>
Maximum rate/hour	0.8m <sup>3</sup>		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up/shutdown to be included*):

Periods of Emission (avg)	30min/hr    2 hr/day    365 daylyr
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WASTE Application Form

TABLE E.3(ii): EMISSIONS TO SEWER - Characteristics of the emission (1 table per emission point)

Emission point reference number : \_\_\_\_\_

Parameter	Prior to treatment				As discharged				%Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
Temperature						42c			
BOD						3,500	130		
COD						7,000	400		
pH						5-10			
Ammoniacal Nitrogen						100	2		
Suspended Solids						2000	30		
Sulphates (as SO <sub>4</sub> )						1000	20		
Detergents (as MBAS)						100	2		
Fats, Oils, Grease						100	2		

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Art. 16 reply submitted 12/10/05.

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## 2. COMPLIANCE REQUIREMENTS

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- 1. Clarify whether hazardous waste is accepted at the facility on its own or inadvertently is accepted at the facility as part of accepted municipal and commercial waste loads. If the hazardous waste is accepted as part of the non-conforming waste of municipal and commercial waste then this should not be included as a waste type to be accepted at the facility. Complete Table H.1 (c) Waste Types and Quantities and Table H.1.2 Hazardous Waste Types and Quantities of the application form.*

Small quantities of hazardous wastes (e.g. batteries) are inadvertently accepted at the facility as part of the municipal and commercial waste loads accepted.

Greenstar has applied to review Condition 1.4 and Schedule A of the existing licence to allow for the acceptance of refrigerators, electrical equipment and construction waste containing asbestos. Completed Tables H.1 (C) and H.1.2 which identify the types and quantities of hazardous wastes that will be accepted at the facility are included in Appendix 1. Hazardous waste inadvertently accepted as part of the municipal and commercial waste loads are not included in the tables.

The grounds for seeking the review of Conditions 1.4 and Schedule A are to allow individual householders and small commercial activities to deliver segregated electrical and electronic waste (e.g. refrigerators and visual display units containing activated glass and cathode ray tubes) and bonded asbestos waste materials (e.g. roof sheeting, cladding and gutters) to the civic amenity area.

- 2. Clarify when the wastewater drainage network at the facility is expected to be connected to the foul sewer and when the use of the septic tanks will be expected to cease.*

The drainage network at the facility is expected to be connected to the foul sewer in October 2005 following which the septic tank will cease operation.

3. Provide a new drawing exclusively detailing the proposed and existing storm water run-off and wastewater drainage networks at the facility. The drawings should show the sources (e.g. vehicle wash area, compactor, loading area, storm water runoff etc.) of all waste water and storm water runoff generated at the facility and the pipework to which it connects i.e. wastewater or storm water. Furthermore, the revised drawing should show the location of the existing and proposed silt traps, oil/petrol interceptors, sumps and shut-off valves on wastewater and storm water run-off drainage systems as well as any existing/proposed monitoring point for the storm water run-off and wastewater emissions.

A new drawing (Drawing No. B9338-C002-B *Civil Site Drainage Layout*) detailing the existing and proposed surface water and foul water drainage networks including existing and proposed silt traps, oil/petrol interceptors, sumps and shut-off valves is included in Appendix 2. The drawing is colour coded to show existing and proposed surface water and foul water drainage infrastructure.

4. Show the connection to the new proposed foul sewer on the new drainage network drawing mentioned above.

The proposed connection to the new foul sewer is shown on Drawing No. B9338-C002-B *Civil Site Drainage Layout*.

5. Show the existing wastewater treatment systems including puraflo and percolation areas on the new drainage network drawing mentioned above.

The existing wastewater treatment system including puraflo and percolation areas are shown on Drawing No. B9338-C002-B *Civil Site Drainage Layout*.

6. Indicate the location of the surplus storage tank mentioned in Section 5.16 Wastewater of the EIS on the new drainage network drawing mentioned above. Clarify whether all surplus trade effluent from the reception building, bulking storage area, the ASPs and in-vessel units will be directed to the same surplus storage tank, if needed, prior to discharge to the foul sewer.

The surplus storage tank is shown on Drawing No. B9338-C002-B *Civil Site Drainage Layout*. All surplus trade effluent from the reception building, bulking storage area, the ASPs and in-vessel units will be ultimately directed via two storage tanks to the surplus storage tank. It had been intended that surplus effluent from the tank would discharge to the sewer.

However, Condition 6 of the Planning Permission granted in July 2005, prohibits the discharge of surplus trade effluent **from** the biowaste area to the public foul sewer. Therefore, it is proposed to remove surplus leachate generated to a waste water treatment plant the details of which will be submitted to the Agency for its agreement before the start of waste acceptance at the biowaste area. The revised drainage arrangement for the biowaste area tank is shown on Drawing No. B9338-C002-B *Civil Site Drainage Layout* and further details are included in the Addendum Report on the Article 14 response, which accompanies this report.

7. *Section 5.6 Site Access of the EIS states that the upgrading of the access road to the facility will involve the removal of the redundant weighbridge. Clarify whether it is proposed to remove a weighbridge at the facility and detail the proposed number of weighbridges and locations of same. Revise Drawing No. B8575-COO3-A Civil Proposed Site Layout Plan with Drainage & Site Boundary, if relevant.*

There are currently two weighbridges (entry and exit) in operation at the facility, as shown on Drawing No. B8575-COO3-A Civil Proposed Site Layout Plan with Drainage & Site Boundary and these are the only ones which will continue in operation. The positioning of the current weighbridges was agreed by the Agency of the review of licence 53-1 and completed as part of the works to comply with the planning permission (Planning Ref. 03/9208) on grading the site entrance. The redundant weighbridge, which had been located closer to the public roadway at the facility entrance, was left in-situ as it did not obstruct vehicle access to the site. It has recently been removed as part of the upgrade works at the site entrance and the access road.

8. *Revise Drawing No. B8575-COO3-A Civil Proposed Site Layout Plan with Drainage & Site Boundary to include the location of the civic waste facility, glass storage area, construction and demolition area and wood chipping area as well as any other proposed infrastructure not included on the above mentioned drawing.*

The locations of the civic waste facility, glass storage area, construction and demolition area and wood chipping area are included on the new Drawing No. B9338-C002-B *Civil Site Drainage Layout*.

9. *Detail the type and quantity of waste to be accepted at the facility; including proposed procedure for waste acceptance and handling at the civic waste facility.*

The type and quantities of waste to be accepted at the facility are shown on Tables H.1 (C) and H. 1.2 which are included in Appendix 1.