A. NON-TECHNICAL SUMMARY

A Non-Technical Summary is to be submitted. The summary should include information on those aspects outlined in the *Guidance Note* and must comply with the requirements of Article 12 (1) (q) of the licensing regulations, S.I. 133 as amended.

The Non-Technical Summary should form **Attachment A.1**.

Attachment included	**yes** ☒	**no** ☐
Article 12 (1) (q) of S.I. 133 1997 complied with	**yes** ☒	**no** ☐

Attachment A.1 Non Technical Summary

A.1.1 Nature of the Facility

Greyhound Recycling & Recovery Ltd (GRR) are one of Ireland's leading waste management companies involved in the collection segregation and recycling of commercial and industrial waste streams The company operates a licensed recycling facility at Knockmitten Lane, Western Industrial Estate, Dublin 12. The company seeks to apply to the Environmental Protection Agency for a waste licence which will cover all activities at a new improved Sustainable Resource Recovery Facility at Crag Avenue, Clondalkin Industrial Estate, County Dublin.

The application site, covering approximately 4.5 hectares, is currently used as a car storage and distribution compound owned by Crosbie Transcar Ltd. The site is located in Crag Avenue in Clondalkin Industrial Estate. It is currently zoned for Light Industrial Use.

The proposed new development will be a state of the art purpose built waste processing facility, constructed on a phased basis and when complete will seek to operate at a maximum capacity of 250,000 tonnes of waste per annum. The building will be large enough to house all internal waste operations. The main function of the recycling facility is to sort, separate and process all of the waste arriving at the site. The warehouse building will house all of the waste operations and processes on-site with various waste streams processed in different parts of the building. The main waste types to be accepted on-site will be mixed commercial and industrial waste and recyclables.

Smaller quantities of organic waste, glass, wood, metal, and waste electrical and electronic equipment are also to be accepted. All of the waste streams will be handled inside the facility to eliminate the potential of nuisances on-site such as odour, windblown litter, birds, vermin and leachate generation.

An Environmental Impact Statement has been prepared in relation to the proposed development and is enclosed with the Waste Licence application.

A.1.2 Class or Classes of Activity

Third schedule of the Waste Management Act

Waste Disposal Activities

Class 11:This activity entails the processing and bulking of wastes prior to transfer to other facilities for disposal

Class 12: This activity on-site involves the processing and baling of waste onsite prior to disposal.

Class 13: The activity involves temporary storage of residual waste at the facility prior to disposal.

Fourth Schedule of the Waste Management Act

Waste Recovery Activities

Class 2: This activity involves the processing of mixed commercial and industrial waste. The material will be processed with a shredder and trommel with the organic fines separated out and sent off-site for composting. Wood will be separated, stored and transferred to a green waste facility for recovery. Cardboard will also be recycled.

Class 3: Metals will be separated, stored in the facility and transferred to a scrap metal plant for recovery/recycling. Beverage cans will also be recycled.

Class 8: Activities will entail the transfer and storage of waste cooking oil on-site, prior to removal off-site for recovery reprocessing. Waste oil from trucks and machines on-site will also be used to lubricate the baler wires.

Class 9: This activity refers to future long term plans to reuse waste vegetable oil on-site. GRR propose to refine the waste vegetable oil for use as a biodiesel for forklifts and other vehicles on-site. At this stage a definitive process has not been selected and GRR propose to consult with the Agency prior to operating such a process.

Class 11: This activity will consist of the use of refined vegetable oil as biodiesel.

Class 12: The exchange of wastes for reuse/ recycling and recovery at the facility.

Class 13: The storage of waste at the facility pending collection for further recycling and recovery.

The **principal activity** carried out at the site in accordance with the Fourth Schedule of the Waste Management Act, is as follows:-

Class 4: The sorting, separation and processing of mixed commercial and industrial waste and recyclables.

A.1.3 Quantity and Nature of the Waste

The main waste types to be accepted on-site will be mixed commercial and industrial waste and recyclables. Smaller quantities of organic waste, glass, wood, metal, and hazardous waste such as WEEE, batteries, fluorescent tubes etc. will be accepted. The quantities and nature of wastes to be recovered at the proposed facility is given in the table below.

WASTE TYPE	TONNES PER ANNUM^
Household waste collected by or on behalf of the local authority	10,000 *
Household waste delivered to civic waste facilities and other bring facilities	10,000 *
Other household waste	
Commercial Waste	112,000 **
Construction and Demolition Waste	3,000
Industrial waste not elsewhere specified	112,000 **
Hazardous Waste	3,000 ***

^ GRR requests that the waste licence allows the scope to vary amounts of non-hazardous waste between categories, subject to prior agreement with the agency. This is to respond to changes in market forces and to enable the company to tender competitively for waste contracts.

* Pre-Segregated Dry Recyclables – see attachment E 2

** GRR plan to accept a total of 224,000 tonnes of commercial and industrial waste annually. The eventual tonnage of each waste category may vary between categories.

*** Household and Commercial Hazardous Waste (WEEE, fridges, batteries, fluorescent tubes, etc.). GRR wishes to accept small amounts of such materials since they are generated by customers in the commercial and industrial sector. It is not intended to accept industrial hazardous wastes.

A.1.4 Raw and Ancillary Materials

The following materials will be used on-site to facilitate the operation of the facility. An approximation is given of the amount of materials to be used at the facility on an annual basis.

Resource	Usage per annum
Electricity	Approx. 400,000 units (Kwh)
Water	Between 35 m^3 and 45 m^3 per day (14, 600 m3/ annum)
Fuel:	
Road Diesel	550,000L
Green Marked Diesel	26,000L
Engine Oil	3,000L
Detergent	2,000L

All fuels and the fuel storage tank will be kept in a secure bunded area.

A.1.5 Site Plant, Methods, Processes and Operating Procedures

Site Plant:
The proposed Sustainable Resource Recovery Facility will comprise the following components:

- The redevelopment of an existing light industrial site (4.5 ha in size) to incorporate a new 4,909 m^2 warehouse recovery facility, a two storey office block, a traffic control centre, entrance and exit weighbridges and security control barriers.

- The development will retain all existing buildings on the site including the existing offices, garages/workshops, security tower, ESB substation and paint workshop forming part of the planning application and future on-site development.

- The proposed development will significantly modify and improve the existing site layout. The site entrance will be widened and altered in order to improve sightlines and turning movements. The surface water drainage will be upgraded on-site and will also include an underground tank for the storage and re-use of rainwater.

- A pedestrian entrance will be put in place along the southern boundary fence adjacent to the new office development. This will ensure that pedestrians/staff can enter the site separately to heavy goods vehicles (HGV's) and staff cars.

- A number of green building systems will be put in place including a small wind turbine and solar panels to provide office power. Rainwater will be collected and used for washing and cleaning purposes.

The proposed site will be thoroughly landscaped with trees, ivy, flowerbeds and planting, which will significantly enhance the visual appearance of the site.

Plant Equipment
The final configurations of plant equipment to be used at the facility has not been decided upon at this time. However, a list of typical equipment expected to be used at such a facility is listed below.

Equipment to be used in the plant will generally comprise:

- 2 x hydraulic excavators fitted with a grab
- 2 x balers
- 1 x Trommel
- 2 x Loading shovels
- 1 x Compactor
- 1 x Shredder
- 2 x Tractor Unit
- 5 x Forklifts for lifting baled waste
- 3 x Skip Lorries
- 4 x Articulated Trucks
- 2 x Tail lifts
- 3 x Roll on Roll off Trucks
- 3 x Trailers for transport of waste
- 1 x Road Sweeper for cleaning and maintenance of hardstanding and access areas
- Elevated conveyor belt

- Elevated picking lines for materials segregation
- Odour control equipment
- Dust control equipment
- Mobile bunds/bunded storage tanks for waste vegetable oil.

Balers

A baler which is suited for use with all types of paper and board, commercial and industrial waste, plastics and PET will be required. A baler with low noise pumps is the preferred option. These balers can process up to 35 tonnes per hour, depending on the specification of the machine and the waste material. Bales can be wired either vertically, horizontally or a combination of both using a various number of wires. Refer to technical specification as attached.

Trommel

A trommel will also be required at this facility. These machines usually have throughput capacity for a very wide range of materials, wider than the range of wastes due to be accepted at this facility. Depending on the waste material, these machines can process up to 200 tonnes per hour. Refer to technical specification as attached.

Shredder

Shredding technologies are improving constantly and a state-of-the-art shredder is envisaged for this facility which generates a minimum of dust and produces very low noise. It will be capable of shredding a wide range of materials from paper, cardboard, tetra-pak and organic waste to wood and depending on the material can process up to 50 tonnes per hour These machines come in two main types: diesel-powered and electricity-powered. At present, the electricity-powered machine is the preferred option as it reduced the need for large volumes of fuel to be stored on-site. Refer to technical specification as attached.

Odour and Dust Control System

A dust control system will be installed at the facility to tackle problems with dust should the need arise. The system will be employed at the principal waste delivery and processing areas, where dust and odours may be generated. Typically the odour/dust control system it is a water-based system (which contains a component designed to destroy any pathogens in the water supply fuelling the system) in the operation of which the dust particles are encapsulated using special surfactants which absorb the dust and removed from the atmosphere. The substances used in such a system are safe.

The proposed facility will also incorporate fast-action doors to prevent the escape of dust and odours.

Processes and Operational Procedures

A full description of the Processes and Operational Procedures to be carried out and adhered to at the facility will be discussed below.

Waste Acceptance

The facility will function twenty four hours a day, seven days a week. Staff members operating in the traffic control cabin will log all waste loads arriving at the site. The following information will be recorded for the site records:

- Description of the waste including waste types, composition, form and relevant EWC codes etc.
- The origin of the waste including all customer details.
- The weight of the waste load.

This information will be collated and inputted into a site database which will be relevant for environmental reporting and inspections by the EPA etc.

All waste loads arriving to the site will be tipped inside the main facility building and inspected prior to processing being undertaken. If staff members are satisfied that the load is not contaminated the material will be processed as required. Any loads considered to be suspect will be removed to a quarantine bay for further inspection by staff who will arrange for the load to be returned to the customer if they are not satisfied. Similar controls will be put on all recyclables/residues leaving the site.

Waste Processing

The main function of the recycling facility is to sort, separate and process all of the waste arriving to the site. The warehouse building will house all of the waste operations and processes on-site with various waste streams processed in different parts of the building. The main waste types to be accepted on-site will be mixed commercial and industrial waste and recyclables.

Smaller quantities of organic waste, glass, wood, metal, and waste electrical and electronic equipment are also to be accepted. All of the waste streams will be handled inside the facility to eliminate the potential of nuisances on-site such as odour, windblown litter, birds, vermin and leachate generation.

Waste loads delivered to the facility will be tipped onto a main tipping floor area and moved internally using a large mechanical grab. The moveable grab is operated and controlled by an operative working from the machine cabin.

Unit Operations for Processing of Waste Streams

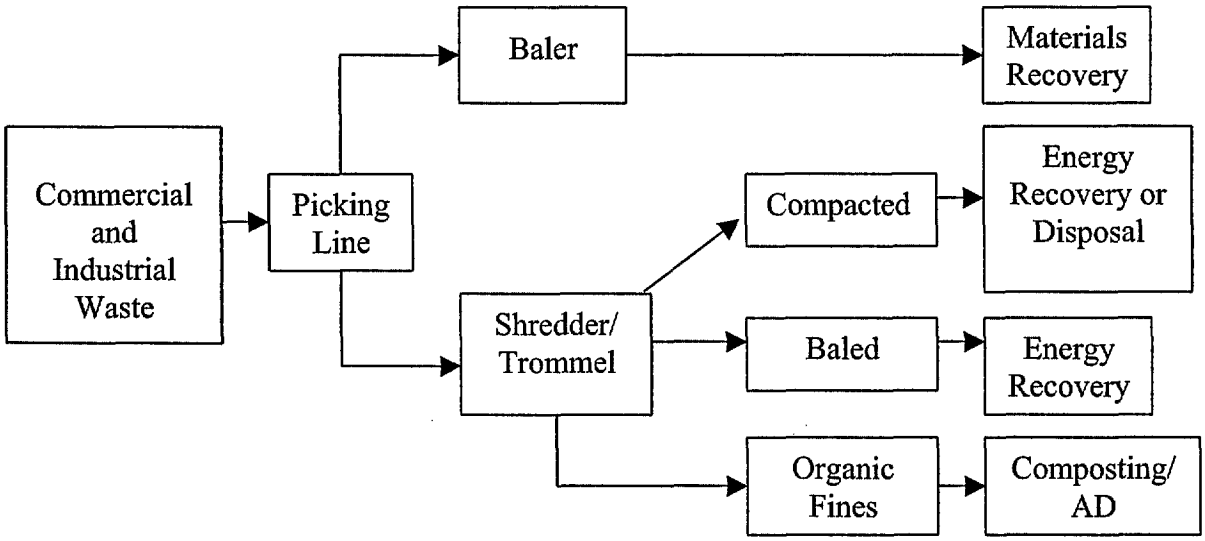
The main streams for processing/baling before recovery and recycling are:

- Mixed commercial and industrial waste including recyclables and organics
- Smaller waste streams including glass, plastics, wood and metal.
- Construction and demolition waste.
- WEEE and household hazardous waste.
- Storage and conversion of waste vegetable oil into biodiesel.

Mixed Commercial and Industrial Waste

This waste stream requires a higher level of processing in order to separate out the various types of materials. After tipping, the material will be moved onto a conveyor belt using the mechanical grab. The belt will carry the material past a picking line from which dry packaging material will be picked by manual operatives and dropped into a storage bay. This material will be moved internally and baled with the separated waste. The remaining material (which may include organic material) will continue along the belt to the mechanical shredder. The shredder will cut up the material and feed it into the trommel machine. This machine is made up a large screen which will separate out the finer organic particles from the residual mixed waste. The residual mixed waste will be moved from the trommel to a second baler or waste compactor. The second baler will again compact the waste into rectangular bales which will be wrapped in a plastic film to ensure the bales remain intact. The waste compactor will compact and load the waste directly into a waste trailer. These bales will be stored in the facility and sent on a daily basis to a reprocessor manufacturing fuel for energy recovery facilities.

The separated organic fraction of the waste will be fed from the trommel into a parked trailer in the covered annex building. After filling the trailer the material will be moved off-site and further processed at a compost facility.

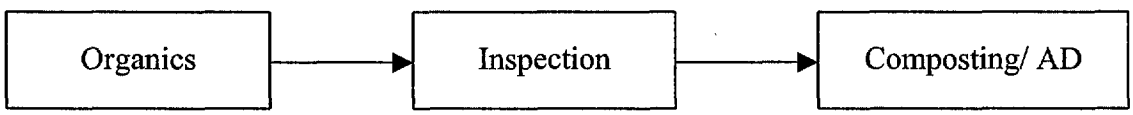


Mixed Commercial and Industrial Waste: Dry recyclables

Dry recyclables delivered to the site will require very little additional processing. The waste will be tipped onto the floor from where the grab will pick up the waste and drop it onto a conveyor belt (some waste will arrive as smaller bales which will be offloaded and opened). The belt will feed the material into a waste baler which will compact the material into rectangular bales. The bales will be wire wrapped to keep them together and then moved using a forklift to the back of the building for storage. The bales will be collected and shipped off-site for recovery.

Mixed Commercial and Industrial Waste: Organics

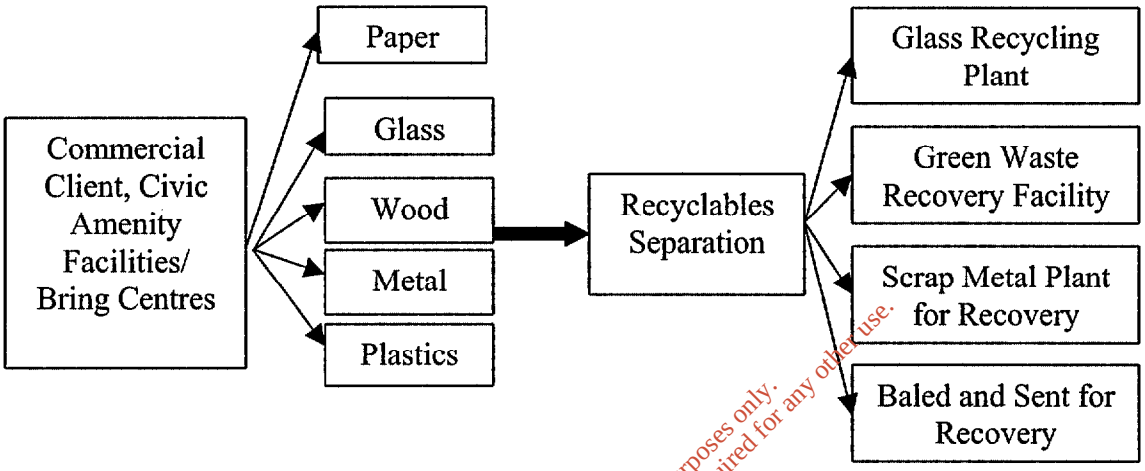
Organics will be inspected on arrival at the facility. The organics will then be loaded onto a container and sent on a daily basis to a composting or anaerobic digestion plant for recovery. If the container remains overnight at the facility it will be covered over and removed the following day.



Additional Waste Streams

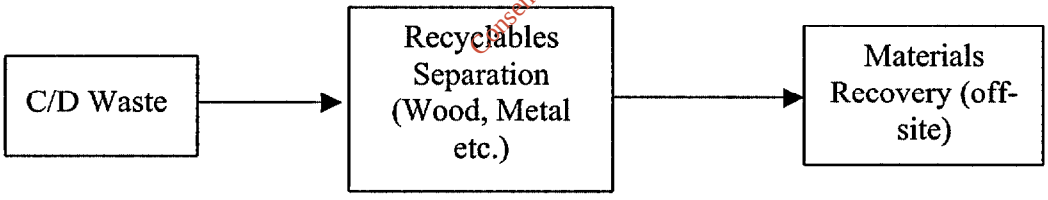
Smaller quantities of glass, wood, plastics, metal, construction and demolition waste (C&D), household hazardous wastes and waste electronic and electrical equipment (WEEE) will also be accepted at the facility. These materials are generally source separated and after off-loading will be moved into separate storage bays within the facility. The materials will be stored for a period and removed off-site for recovery when a significant quantity of material has built up in the facility, refer to **Drawing DG0014, in Appendix A** for location of the bays. The following summarises the likely recovery options for the various waste streams:

- Glass will be collected, stored and transferred to a glass recycling plant for recovery.
- Wood will be separated, stored and transferred to a green waste facility for recovery.
- Metal will be separated stored in the facility and transferred to a scrap metal plant for recovery.
- Certain grades of paper and plastic will also be separated out from the general mixed waste quantities on-site and when substantial quantities have been collected the plastic will be baled and made available for recovery.



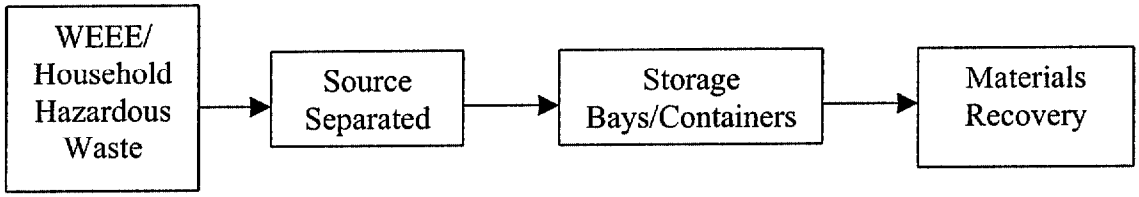
Construction and Demolition Waste

C&D waste will be accepted at the site and will be stored within the facility. Metals, wood, plastics, cardboard and any other recyclable materials will be removed (using a grab, or manually) from the waste prior to storage of the remaining inert material which will be sent off-site to a licensed recovery plant.



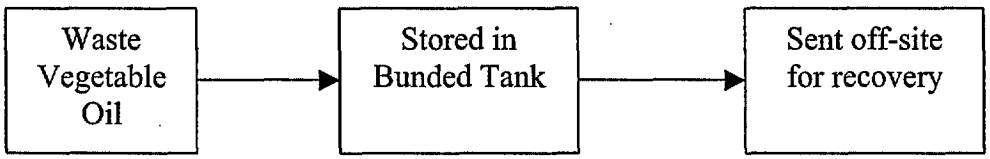
WEEE/Hazardous Waste

Similarly small quantities of WEEE will be accepted at the site. Initially it is intended to store WEE until sufficient quantities are available to make a full load for export to authorized recovery facilities. In the future, the plastic and metal material may be stripped off and recovered separately with the residual components exported abroad for recovery. If this is to be implemented, GRR will supply further details and agree arrangements in advance with the Agency. Smaller quantities of household wastes e.g. batteries, fluorescent tubes, fridges will also be accepted at the site, stored and made available for recovery.



Storage of Waste Vegetable Oil (WVO)/ Conversion to Biodiesel

Waste vegetable oil will be accepted at the facility where it will be stored in a 40,000l tank prior to being sent off site for recovery. The tank will be stored in a bunded area capable of holding 110% of the maximum capacity of the storage tank. In the initial operation, only storage is required. Proposed storage is detailed in **DG0014 Appendix A.** The equipment for processing has not yet been specified. GRR will finalise details in consultation with the Agency, and will seek agreement before commencing any conversion process or use of recovered oil.



A.1.6 Determination of Compliance with Section 40(4) of the Act

These issues relate to compliance with emission standards, avoidance of environmental pollution, use of BATNEEC and BAT, previous offences and convictions, technical competence and site management and financial provisions available from GRR. Each of these issues are individually summarised below.

(a) Compliance with Emission Standards

GRR will comply with all emission limits and standards set down in the Waste licence when issued by the Environmental Protection Agency.

(b) Avoidance of Environmental Pollution

GRR have to the best of their ability and knowledge, and by employing Best Available Technology Not Entailing Excessive Costs (BATNEEC) and Best Available Technologies (BAT), designed the facility to function in a manner, which will best prevent pollution of the environment. The facility is a state of the art sustainable resource recovery facility. GRR will construct, refurbish and manage its surroundings in a manner that will reduce the associated environmental impacts and be sympathetic with the external surroundings. Some design features of the proposed facility to avoid environmental pollution or nuisances include:

- By addressing the issue of energy efficiency in our buildings, we will contribute to the reduction of greenhouse gas emissions in line with national and international agreements.
- The facility will be situated in an appropriate location which is zoned for light industrial use.
- The recovery facility will be large enough to house all internal waste operations and to eliminate the potential of nuisances on-site such as odour, windblown litter, birds, vermin and leachate generation.
- Fast acting roller doors will be used to keep all waste tippings indoors.
- All fuels will be stored in bunded areas to prevent pollution of surface and ground water.
- An interceptor will be installed at the point of discharge of surface water to the river Camac.
- A silt trap and interceptor will be installed before the point of discharge of wastewater from wash bay to foul sewer.
- Waste vegetable oil will be stored in a tank housed in a bunded area.
- Hazardous waste will be stored within bunded areas or dedicated self-bunded proprietary containers
- Two way traffic control to ensure the flow of traffic and prevent air pollution.
- An odour and dust control spray system will be in place in the recovery facility to suppress potential dust and odour emissions.

(c) Best Available Technology Not Entailing Excessive Costs (BATNEEC) and Best Available Technologies (BAT)

The facility will employ BATNEEC and BAT principles as appropriate to reduce emissions from the proposed facility as far as is practicable including compliance in accordance with the EPA Waste Licence conditions when issued. GRR are committed to further research and development into new environmental technologies and the introduction of pioneering projects to ensure improved and continuous sustainability of the proposed resource recovery facility.

(d) Previous Offences and Convictions

The applicant, GRR and none of its employees have ever been convicted of offences against the Waste Management Act 1996.

e) Technical Competence and Site Management

GRR is a leading Irish recycling company with over 30 years experience in the waste management industry and in providing a nationwide service to its customers. GRR will operate the facility in accordance with the conditions set down in the EPA Waste Licence when granted by the agency. The table below details the experience and qualifications of management of GRR.

Name	Position	Duties and Responsibilities	Experience/Qualifications
Brian Buckley	Director	Overall management of site	10 years experience & FAS Waste course
Michael Buckley	Director	Overall management of site	10 years experience & FAS Waste course
Eugene Doyle	General Manager	Management of site operations	15 years experience
Olivier Gaillot	Environmental & Quality Manager	EPA licence compliance, Health & Safety, Environmental Management - ISO9000, ISO14001	10 years experience & FAS Waste course
Lucy Fagan	Traffic Manager	Management of drivers, weighbridge& weigh sheets	Over 5 years experience in service/ fleet management FAS Waste course
Angie Clissold	Logistic Manager	Management of waste operatives, cleaning staff, Quality Control of incoming and out coming loads	10 years experience in waste management industry
Moira O'Riordan	Administration Manager	Office Administration	10 years experience
Chris Roe	Maintenance Manager	Maintenance & Management of fitters, welders	10 years experience

(f) Financial Provisions

GRR conduct their affairs in a professional and exemplary manner and have sufficient funds to own and operate the facility. Financial provisions may be required for decommissioning, aftercare and environmental pollution incidents. GRR are fully aware of their responsibilities in this matter and are committed to providing the necessary finances should the need arise. GRR has attached a letter from their bank who will act as a referee to their sound financial standings (Attachment L2).

A.1.7 Nature and Impacts of Emissions at the facility

The emissions from the facility are: dust, noise discharge to foul sewer, and surface water discharges. Each of these individual emissions is considered in the Application Form and supporting EIS Attachments. The position with regard to each of the above emissions is summarised below:

Dust

Dry periods of weather can lead to the generation of dust. Dust is expected to be generated during the construction phase of the proposed development. During the operational phase, dust emissions are not expected to be a problem, as waste deliveries will mainly consist of dry solid material, packaging etc. and all recovery and baling activities will take place indoors. The facility may also accept small quantities of construction and demolition waste which has the potential to generate dust although these activities will take place in doors.

Noise

When considering a development of this nature, the potential noise impacts on the surrounding environment must be considered for each of two distinct stages; the short-term impact of the construction phase and the longer term impact of the operational phase.

- Construction Noise

The construction phase will involve the use of a variety of equipment including excavators, breakers, lifting equipment, dumper trucks, compressors and generators. There will be vehicular movements to and from the site that will, out of necessity, make use of existing roads. All of these construction activities have the potential to generate noise and vibration.

Therefore in order to minimise the impact on nearby sensitive locations, it is usual to limit the times of day and the week during which it is permissible to carry out construction work that could create high levels of noise. These are normally set down by the local authority and are typically 08:00 to 18:00 hours Monday to Friday, 09:00 to 13:00 hours on Saturday and none on Sunday or bank / public holidays.

Higher noise levels are generally more acceptable during the construction phase than the operational phase, as these works are temporary in nature. Furthermore, if construction noise does not exceed the existing ambient noise climate (LAeq) by more than 10dB, it is unlikely to cause complaints.

- Operational Noise

Once operational, the main sources of noise impact associated with the development will be additional vehicles on the existing road system, vehicle movements within the site and noise from the operation of the site.

Waste Recovery Facility

The operation of the waste transfer facility will involve the delivery, sorting, baling and storing of waste materials. Each on-site process has the potential for noise generation. The combined noise level from all sources operating within the facility has been assessed assuming all machinery is operating simultaneously for 100% of the time. In order to ensure that noise levels from the operation of the facility do not significantly impact the nearest residential properties, reference has been made to BS4142, 1997 '*Method for rating industrial noise affecting mixed residential and industrial areas'*. It is proposed that the specific noise from combined operating equipment do not increase existing background noise levels at the nearest noise sensitive locations by more than 5dB(A).

Therefore if operating noise from the facility does not exceed 54dB LAeq during the day time period and 48dB LAeq during the night time period at the nearest residences, the operational noise impact will be of marginal significance. Careful design of the facility and the use of noise control techniques will keep noise emissions to a minimum.

Discharge to Foul Sewer

Wastewater will be discharged to foul sewer. The wastewater discharges will basically consist of wash waters from truck washings. A silt trap and oil interceptor will be in place before the point of discharge of the wash-bay to foul sewer to prevent discharges with a high suspended solids or BOD and COD loadings.

Surface Water Discharges

Surface water discharges will be made into the public storm water drainage network on Crag Avenue which drains to the River Camac. In order to prevent or reduce the potential risk of contamination of water quality in adjacent watercourses a number of steps will be incorporated into the design and construction phase as well as the operational phase of the facility. The main operational warehouse will not release any leachate since waste is predominately dry waste. Waste handling will be carried out internally on impermeable surfaces. Any spills will be collected by the on-site suction sweeper and disposed of off-site. There are no surface water or foul water drains in the areas where waste will be managed.

The existing storm water drainage system on the site is sufficient in its capacity to efficiently collect precipitation falling on the site during flood events. A Petrol/oil interceptor will be installed to ensure only clean uncontaminated surface waters will be discharged to the public surface water network. In addition measures to attenuate storm flows will be installed to meet the requirements of the Planning Authority (either using an attenuation tank or permeable paving on site roads and parking)

A.1.8 Monitoring Arrangements

Proposed monitoring for dust, foul water, noise and surface water is given in the table below.

Parameter	Frequency of Monitoring
Dust	Three times a year
Foul Water	According to stipulations by the EPA
Noise	Annually
Surface Water	Quarterly

A.1.9 Off Site Treatment of Waste

All waste to be sent off site to authorised facilities for recovery purposes. Waste will be transported by and sent to reputable waste contractors who are in possession of waste collection permits. All facilities used will be authorised and details will be provided to the Agency as required.

A.1.10 Emergency Procedures

Emergency procedures will be followed in the event of an emergency situation arising on the site. An emergency situation would involve:

(a) fire on the site

(b) a spill of fuel or other contaminants
(c) a serious accident
(d) an explosion or discovery of a suspicious item etc.

The appointed Safety Supervisor for the site or representative shall activate the required Emergency Response Procedures at the time of the incident. Emergency response procedures for such incidences will be detailed in the Environmental Management Plan which will be forwarded to the agency within 12 months of operation.

A.1.11 Decommissioning and Aftercare Management

Decommissioning
Any hazardous or non-hazardous waste stored on-site will be removed from the site and recovered through the usual channels in the event of decommissioning of any operation.

All plant machinery and vehicles will be removed from site if the site and depot operation is decommissioned.

Waste recovery activities will continue to be required to meet our national recycling and recovery targets in the foreseeable future and as such there is no time limit for closure of the facility at present. In any event the facility could easily be converted into commercial and light industrial units in keeping with the land use of the area.

Aftercare Management
All emissions will continue to be monitored after decommissioning until such a time that GRR and the agency are content that the facility has been fully decommissioned and there is no potential for the release of further emissions into the environment.