APPENDIX B

GLOSSARY

Ambient Noise

Totally encompassing sound in a given situation at a given time usually composed of a sound from many sources near and far.

Backaround noise level

The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval,T measured using time weighting F, and quoted to the nearest whole number of decibels.

Day:
0800 hrs to 2200 hrs

Night:
2200 hrs to 0800 hrs

Decibel (dB)

The unit **of** sound pressure level, calculated as a logarithm of the intensity of sound. 0 dB is the threshold of hearing, 140 dB is the threshold of pain. A change of 1 dB is detectable only under laboratory conditions. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound.

dB(A)

Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sound of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with peoples assessment of loudness.

Hertz (Hz)

Unit of frequency (pitch) of a sound.

Impulsive Noise

A noise which is of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background.

1/3 Octave band analysis

Frequency analysis of sound such that the frequency spectrum is sub divided into bands of one third of an octave each. An octave is taken to be the frequency interval, the upper limit of which is twice the lower limit (in Hertz).

$L(A)_{eq}$

Equivalent Continuous A-weighted Sound Level. The continuous steady noise level, which would have the same total A-weighted acoustic energy as the real fluctuating noise measured over the same period of time.

$L(A)_{10}$

The noise level that is equaled or exceeded for 10% of th measurement period.

$L(A)_{90}$

The noise level that is equaled or exceeded for 90% of the measurement period.

Noise

Unwanted sound. Any sound which has the potential to cause disturbance, discomfort or psychological stress to a subject exposed to it, or any sound which has the potential to cause actual physiological harm to a subject exposed to it or physical damage to any structure exposed to it, is known as noise.

Noise Sensitive Receptor

A noise sensitive receptor is regarded as any dwelling house, hotel or hostel, health building, educational establishment, places of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence **of** noise at nuisance levels.

Ratina level L_{ArTr}

The specific noise level plus any adjustment for the characteristic features of the noise.

Residual Noise

The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.

Sound Power

The energy output from a source. It is measured in Watts (W).

Specific Noise source

The noise source under investigation for assessing the likelihood of complaints.

Tone

A noise with a narrow frequency composition.

APPENDIX C

Certificate of Calibration

Cirrus Research plc

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	Acoustic Calibrator
Model Number	CR:513A
Serial Number	032884

Calibration Procedure

The acoustic calibrator detailed above has been calibrated to the published data as described in the operating manual. The procedures and techniques used to follow the recommendations of IEC standard Electroacoustics - Sound Calibrators IEC 60942:1997 and BS EN 60942:1998. The calibrator's main output is 94.00 dB (1 Pa) and this was set within the 0.01 dB resolution of the test system, i.e. one hundredth of a decibel. Numbers in {parenthesis} refer to the paragraph in IEC 60942.

Calibration Traceability

The calibrator above was calibrated against the calibration laboratory standards held at Hunmanby UK YO14 0PH. These are traceable to UK national standards {A.0.6}. The standards are:

Microphone Type	B&K4192	Serial Number	1920791	Calibration Ref.	S 5170
Pistonphone Type	B&K4220	Serial Number	613843	Calibration Ref.	S 5169

Calibration Climatic Conditions

These climatic test conditions were all maintained within the permitted limits of IEC 60942:1997.

Temperature	{B.3.2}	Permitted band 15°C to 25°C
Humidity	{B.3.2}	Permitted bank 30% to 90% RH
Static Pressure	{B.3.2}	Permitted band 85 kPa to 105 kPa
Ambient Noise Level	{B.3.3.6}	Max permitted level 64 dB(Z)

Measurement Results

The figures below are the Calibration Laboratory test limits for this model calibrator and have a smaller tolerance than those permitted in IEC 60942.

94 dB Output	93.96	dB	Permitted band 93.95 to 94.05 dB
104 dB Output	103.92	dB	Permitted band 103.80 to 104.30 dB
Frequency	1006.0	Hz	Permitted band 990 Hz to 1010 Hz

Uncertainty

With an uncertainty coefficient k=2, i.e. a 95% confidence level, the uncertainty of each measurement is:

94 dB Output	± 0.13 dB	104 dB Output	± 0.14 dB
Frequency	± 0.1 Hz	Level Stability	± 0.04 dB

Calibrated By

Calibration Date 10 December 2004

Calibration Certificate Number 130534

This Calibration Certificate is valid for 12 months from the date above.

Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH
Telephone 01723 891655 Fax 01723 891742

Certificate of Calibration

Cirrus Research plc

Equipment Details

Instrument Manufacturer	Cirrus Research plc
Instrument Type	Sound Level Meter
Model Number	CR:831A
Serial Number	B16438FF

Calibration Procedure

The instrument detailed above has been calibrated to the published test and calibration data as detailed in the instrument handbook, using the techniques recommended in the latest revisions of the International Standards IEC 61672-1:2002, IEC 60651:1979, IEC 60804:2001, IEC 61260:1995, IEC 60942:1997, IEC 61252:1993, ANSI S1.4-1983 and ANSI S1.43-1997 where applicable.

Sound Level Meters: All Calibration procedures were carried out by substituting the microphone capsule with a suitable electrical signal, apart from the final acoustic calibration.

Calibration Traceability

The equipment detailed above was calibrated against the calibration laboratory standards held by Cirrus Research plc. which are traceable to the appropriate National Standards.

The Cirrus Research plc calibration laboratory standards are:

Microphone Type	B&K4192	Serial Number	1920791	Calibration Ref.	S 5170
Pistonphone Type	B&K4220	Serial Number	613843	Calibration Ref.	S 5169

Calibrated By	Kwl R
Calibration Date	0 December 2004
Calibration Certificate Number	30533

This Calibration Certificate is valid for 12 months from the date above.

Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH
Telephone 01723 891655 Fax 01723 891742

APPENDIX D

EIS, Non Technical Summary

1. General

This non-technical summary is provided as required by Article 6 of the European Communities (Environmental Impact Assessment) Regulations, 1998 (S.I. No. 351/1998) which amends Article 25 of the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349/1989).

Greenstar Limited operates a domestic, commercial and industrial waste collection and recycling business at Ramstown, Gorey, Co. Wexford. The facility has planning permission to operate a waste transfer station since 1995. Significant changes are now necessary to allow the company to expand its recycling processes and to improve the environmental performance and the overall efficiency of operations at the site.

2. Description and characteristics of the development

The facility currently handles household, commercial, industrial, and construction and demoiition waste as described above. All wastes handled are non-hazardous in nature. Recycling at the facility comprises recovery of paper, wood, cardboard, metal, plastic and construction and demolition materials. There is one picking lines for the recovery of construction and demolition waste. This picking line can also be used for the recovery of other waste types. Any non-recyclable waste is bulked up on the premises and transferred to landfill in covered trailers. Greenstar also provide a service for the collection of dry recyclables from householders and the Company hopes to expand this service in the region.

The existing facility consists of one main building dedicated to waste handling which also houses the office areas, canteen and changing rooms. The site also contains a weighbridge, a weighbridge cabin, toilets, foul water storage tanks, percolation area, recycled materials storage bays and a fuel storage area.

The facility currently handles approximately 16,500 tonnes per annum. The opening hours at the facility are from 8.00a.m. to 5.00 p.m. Monday to Friday and 8.00a.m. to 1:00p.m. on Saturdays. It is proposed to extend the opening hours to 7:30am to 6:30pm Monday to Friday and from 8:00am to 2:00pm on Saturdays. The Waste Licence Application was accompanied by an EIS which included a proposal to increase the current licensed tonnage to 30,000 tonnes per annum over five years. The proposed changes to the facility include a proposal to construct a new building which will cover the entire site ensuring all activities take place indoors and the provision of a proprietary wastewater treatment plant.

3. *Data necessary to identify and assess the main effects which the development is likely to have on the environment*

The data necessary relates to the site development characteristics and the existing environment in which the development has been situated as follows:

Site Statistics and Development Characteristics

Although strictly speaking, site statistics are not an aspect of the environment per se, they form the database upon which most of the calculations related to impacts on the environment are based. The site statistics include site area, building size, hours of operation and traffic generation.

Climate

Climatological data for a number of stations in County Wexford relating to rainfall, wind and evapotranspiration was compiled as a baseline for evaluating the development. The annual rainfall at the site was estimated at 877mm/annum and the prevailing wind was determined to be from the west and southwest.

Air Quality

Dust measurements were made at three monitoring stations, two of which were previously monitored and a new third location. All dust results were recorded below the EPA recommended Dust Deposition Levels. Historically the handling of construction and demolition (C&D) waste had been an additional source of dust on site but the proposed enclosure of C&D waste handling inside the proposed new building and the provision of a dust suppression spray system inside the building will minimise the risk of future dust emissions from this activity. It is also proposed to install a wheelwash at the facility.

Noise Environment

Baseline noise levels were recorded at boundary locations on site and at the nearest sensitive receptors. Noise assessment was carried out during daytime operations at the site. Background noise levels in the surrounding area are influenced by a combination of site activities, passing road traffic and neighbouring activities.

Geology and Soils

The site is underlain by the Campile Formation, which forms the top of the Duncannon Group: Lower Palaeozoics. The overlying soil consists of glacial drift of sandy, gravelly clays. Previous investigations within the Ramstown area recorded deposits of clayey material ranging in thickness from 9.5m to 20.5m.

Groundwater

The groundwater flow direction in the bedrock is most likely in an easterly direction towards the Banoge River The site is underlain by rocks of the Campile Formation of the Duncannon Group which is considered to be a major aquifer

A groundwater sample collected from the on-site well recorded groundwater with elevated levels of manganese, sodium, chloride, conductivity and to a lesser extent sulphate. There was little evidence of organic contamination as indicated by the low levels of ammonia, nitrite, nitrate, phosphate, TON and a relatively high concentration of dissolved oxygen.

Surface Water

The site is located in an industrial area therefore surface water from roofs and paved areas of the site currently runs-off to constructed storm drains. All non-roof surface water passes through 2 (No.) petrol interceptors prior to discharge to a percolation area. It proposed to roof in the entire site therefore all surface water run-off will be in the form of clean roof water.

Flora and Fauna

The site is not covered by any designations of nature conservation interest. There are no natural or semi-natural habitats on site.

Human Beings/Local Population

The site is located in an industrial area, which is zoned *"To provide for Industrial Uses"* in the Gorey Local Area Plan 2002. Therefore the predominant land use in the vicinity of the site is industrial. An urban residential area is located 200m *to* the northeast.

Traffic and Road Network

A traffic survey carried out at the site indicated that the existing junction, site entrance, and circulation areas work well with the existing traffic volume. The site is convenient *to* the N11, thus providing good access to the National Roads network.

Landscape

The existing recycling centre is located within an extensive area of industrial development and therefore has low impact on the landscape environment. The site boundary comprises concrete block walls fitted with corrugated sheeting. The proposed building will house and screen from view any operations, waste storage etc. The building itself will be constructed of

materials and colours to blend in with the existing industrial nature of the adjacent Gorey business park and will not have a significant impact on the environment

Cultural Heritage

An appraisal of the cultural heritage was undertaken, detailing relevant aspects of local history and providing an archaeological assessment of the site and its environs. The study concluded that historical industrial development had removed or disturbed any areas on the site where archaeological remains could have survived. Nothing of archaeological significance was noted in the field assessment. There will be no impact on archaeology from the proposed development.

Material Assets

The material assets of the local area comprise other industrial premises, agriculture, housing some distance away together with public infrastructure including roads, a railway and overhead electric wires. The N11 is dominated by heavy commercial traffic. There are no tourist sites of note in the vicinity of the development.

4. Likely significant environmental effects and measures envisaged to avoid, reduce or remedy them

Climate

No significant adverse impact upon the climate is predicted as a result of the operation of the facility.

Air Quality

No adverse effects on air quality from aerosols or decomposition gases are predicted. Further dust control measures will be put in place at the facility including the construction of a new building to entirely cover the facility and the installation of a dust suppression spray system. This will further reduce potential dust emissions from the site. It is not envisaged that there will be any significant odours from the facility. Odour reducing/masking agents can be added to the dust suppression system if required to reduce any impacts from odours. A complaints file will be maintained on site and odour complaints recorded, investigated and remedied.

Noise

The proposed expansion of the Recycling Centre is likely to increase the number of waste haulage vehicles and associated noise. Additional noise from daytime traffic will be insignificant in terms of existing heavy industrial traffic on the N11. All on-site operations will

be totally enclosed by the new building which will reduce noise emissions. Other mitigation measures will include using modern plant and equipment, maintaining/servicing plant and equipment and switching off or throttling back plant when not in use.

Geology and Soils

The concrete floors and drainage systems in the existing and new buildings and yards at the site will contain all liquids and prevent any contaminants from the waste materials migrating into the underlying clay and no impact on soil quality is predicted. This boulder clay provides a very good barrier between the development and the bedrock and no impacts from the development are predicted.

Groundwater

The vulnerability of the bedrock aquifer is moderate. All rainwater run-off from the upgraded site will be in the form of clean roof water. Foul water generated within the site from toilets/canteen etc. will be treated on site in a wastewater treatment system and discharged to the percolation area. Any leachate generated within the processing building (from floor wash down etc.) will be directed to the contained underground storage tanks and tankered *off* site to an appropriate wastewater treatment plant as and when required. The risk of groundwater pollution will be reduced by the proposed development and therefore the net impact of the development is considered to be positive in groundwater terms.

Surface Water

The proposed roofing of the entire site, by the construction of the new building, is considered as a positive impact in terms of surface water quality. All rain falling on the site will run *off* the roofs to the storm water system and will consist of clean rainfall. No additional mitigation measures are considered necessary.

Flora and Fauna

Pest Control measures are in place on site for the control of vermin. The proposed roofing of the entire site will mitigate for any potential impacts on water quality in the Banoge River and its tributaries. With these mitigation measures in place no negative impact is anticipated on flora or fauna in the vicinity of the development.

Human Beings/Local Population

The proposed expansion is not expected to have a negative impact on the residents living in the region. The construction of the new building will have, a positive effect on dust, noise and odour control in the surrounding area. The expansion of the facility will lead to an increase in

employment locally With appropriate emissions-related mitigation measures in place no adverse significant impact is anticipated to human beings

Traffic and Road Network

The proposed increase in traffic associated with the expansion of the Greenstar facility will be easily absorbed by the existing capacity of the N11 and the adjacent national road network No adverse impact on the surrounding road network or road users is predicted from the proposed expansion of the Greenstar recycling centre

Landscape

The proposed development is visually in keeping with the surrounding industrial land use. The development has no conflict with the County Wexford Development Plan or the Gorey Local Area Plan. No negative visual or landscape impact is anticipated.

Cultural Heritage

The nature of pre-existing industrial development has rendered the survival of archaeological remains highly unlikely. There will be no discernible impact on the archaeological or historical resource and no mitigation measures are recommended.

Material Assets

No negative impact is predicted on the material assets of the Ramstown or Gorey areas.

Interactions

A number of potential impacts resulting from interactions between environmental media were identified. Mitigation measures for these potential impacts are proposed in specific Sections of the EIS (e.g. surface. water, air, noise etc.). Impacts from interactions of environmental media at the site are considered low or insignificant.

5. Effects of the Development due to use of Natural Resources

No natural resources, other than groundwater, are used directly to operate the facility. Fossil fuels are used to power vehicles and plant. Electricity is used which is derived from the burning of fossil fuels by the ESB. The overall effect of the development on natural resources is considered insignificant. Since wastes handled by the facility are produced regardless of the development some other similar operation would still be required. The recycling/recovery of wastes will replace a similar amount of raw materials that otherwise would be produced.

6. Effects due to Emissions

The effects of emissions from the facility are addressed in Section 3 of the EIS. This includes the short, medium and long term effects, and the permanent, temporary, positive and negative effects of any environmental emissions.

7. Forecasting Methods Used to assess any Effects on the Environment

Professional judgment based on site reconnaissance, desk studies and calculations were used to assess effects of the proposed development on the environment.

8. Alternatives

The alternatives available to the operator are addressed in Section 1 of the EIS. These include alternative locations, alternative processes and the do-nothing alternative. In practical terms the expansion of an existing facility is favourable to the installation of a new facility. The location of the existing centre adjacent to an industrial estate with good access to the national road network is considered a very favourable location for a waste management centre. Greenstar Limited are attempting to improve the recycling infrastructure at the site to maximise the volumes of material recycled and minimise landfilling, as required by National and EU Policy. The do-nothing alternative is considered less favourable than the present situation.

9. Difficulties encountered in compiling specified information

No difficulties were encountered