

**W0222-01  
Greenclean  
Article 14(2)(B)(ii) rec.27 April 2005  
Original**

White  
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Green

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Hydrogeology  
Contaminated Land  
Management Systems  
Waste Management.  
Health & Safety  
Geographic Information Systems

Date: April 25<sup>th</sup> 2006

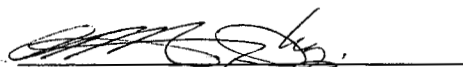
**RE: Waste Licence Application 222-1 (Greenclean, Blakes Cross, Lusk, Co. Dublin)**

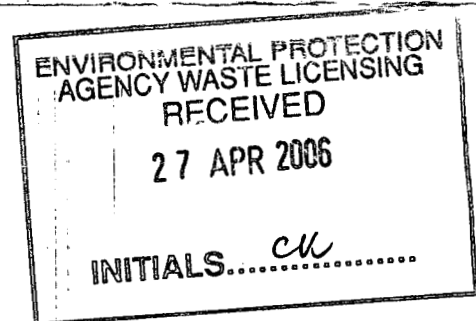
Dear Sir/Madam,

Please find enclosed three copies of the Article 12 *Compliance Information* for Waste Licence REG. No. 222-1 Greenclean, Blakes Cross, Lusk, Co. Dublin, along with 16 copies on CD in PDF version.

If you have any questions please do not hesitate to contact us.

Sincerely

  
Natasha Murphy  
Environmental Scientist



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thinking beyond construction

## ARTICLE 12 COMPLIANCE INFORMATION

REG. NO. 222-1

### GREENCLEAN WASTE MANAGEMENT WASTE RECYCLING CENTRE,

Cold Water  
Blake Cross  
Lusk  
Co. Dublin

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Prepared by  
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**GREENCLEAN WASTE MANAGEMENT  
WASTE RECYCLING CENTRE,  
Cold Winters  
Blakes Cross  
Lusk  
Co. Dublin**

**ARTICLE 12 COMPLIANCE INFORMATION**

**REG. NO. 222-1**

**March 2006**

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Reference: <b>CE05010/GREENCLEAN</b>				
<b>Issue</b>		<b>Prepared by</b>	<b>Prepared by</b>	<b>Verified by</b>
V1	March 2006			
V2	-			
V3	-			
V4	-	Natasha Murphy	Peter Barry	Donal Marron
V5	-	<b>Environmental Scientist</b>	<b>Environmental Scientist</b>	<b>Project Director</b>
<i>File Reference: C002195/Reports</i>				
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**Greenclean Waste Management****Cold Winters****Blakes Cross****Lusk****Co. Dublin****ARTICLE 12 COMPLIANCE INFORMATION****REG. NO. 222-1****ARTICLE 12 COMPLIANCE INFORMATION**

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**ARTICLE 12****B7 Types of Waste Activity and Tonnage**

Complete Table 3.3.2 Proposed Waste Types and Quantities (Section 3.3.2 Proposed Waste Types and Quantities, EIS) by including reference to the relevant European Waste Catalogue codes as presented by Commission Decision 2000/532/EC of 3 May 2000.

**Table 3.3.2 Proposed Waste Types, Quantities and EWC Codes**

<b>WASTE TYPE</b>	<b>TONNES PER ANNUM</b>	<b>EWC Code</b>
Domestic Skip Waste	3,656.1	170904
Commercial Skip Waste	14,530.1	150106
Commercial Roll On/Off	19,920.5	150106
Commercial Rear End Loader	14,904.5	150106
Construction Skip	15,404.1	170904
Construction Roll on/off	7,795.6	170904
Cardboard	2,424.4	150101
Steel	142.5	170405
Plastic	133	150102
Paper	665	150101
Timber	3,296.5	150103
Earth	2,052	170504
Other	575.7	170904
Domestic (municipal type)	9,500	200301
Total	95,000	

**D1 & D2 Infrastructure & Operations**

- Section 3.1.11 Sewerage and Surface water drainage infrastructure states 'the treatment system is designed to cater for a minimum of 50 staff (minimum 4,000 Litre/day...)' while Section 3.5.3 Sewage Effluent states 'Treated effluent passing through the percolation area (maximum 4,000 litres/day...)' Clarify the quantities the proposed treatment system will cater for.

The proposed treatment system is designed to cater for 50 No. staff each generating 80 l/day of effluent during operational hours. This gives an overall volume of 4,000 l/day 5.5 days a week. Very little or no effluent will be generated on Saturday afternoons or Sundays.

**2. Section 3.1.7 Fuel Storage state that waste oil storage tank will be constructed and used for the storage of waste oil from truck maintenance and any waste oil that inadvertently arrives on site. Provide details of how such waste oil will be managed.**

It is possible that some waste oil will arrive on site in the middle of larger loads (in trucks or skips). If the waste oil is contained in a sealed container, the container will be brought over to the waste oil tank and manually poured into the tank. If any of these waste oil containers leak in transit prior to their arrival on site the waste load will be deemed hazardous and placed in the waste quarantine area prior to disposal off site at a appropriately licensed facility.

Waste oil from truck maintenance on site will be collected into a waste oil drum (say 25 litre capacity). The waste oil will be carried over to the Waste Oil tank and manually poured into the tank.

When the waste oil tank is full the oil will be loaded into a road going tanker for delivery to an oil recycling facility such as Atlas Oil Ltd. located in Portlaoise, Co. Laois.

**3. Show the location of the 'acco' drainage system on drawing no 023045-300 Main drainage Layout**

The revised drawing 023045-300 (rev. A) *Main Drainage Layout* shows the location of the acco drain.

**4. Provide further details on the operation of the water recycling wheel wash bay and quantify the amount of waster utilised and discharged by it on a daily basis**

Greenclean intend to use a modern wheelwash (*Moby Dick Combiwash Dragon*) and details are provided in Appendix 1. This will have the facility to recycle the wash water. The water is allowed to settle after each use and the settled solids are removed from the system by a scraper into a designated tank or container. This material will be collected and processed in the C&D recycling facilities on site on a regular basis. Information from the manufacturers of the Moby Dick wheelwash indicate that perhaps c. 4 litres of water per truck are carried from the wheelwash on the trucks (on the wheels, rims and underbody) and this amount of water is topped up in the wheelwash system by a permanent connection to the water supply system (mains supply). Assuming that approximately c.136 vehicles pass through the wheelwash per day (maximum figure) then the wheelwash will use approximately c. 544 litres per day. Water is not discharged from the wheel wash system on a continuous basis. The manufacturers indicate that there is no need to replace the water in the wheelwash as the settlement and silt removal system maintain clean water for truck washing. However, it is planned as a contingency to replace the entire water volume in the wheelwash on a

monthly basis. This will entail discharging the water to the silt trap, oil interceptor and attenuation tanks on site for treatment prior to outfall to the Ballough stream.

### E1 Emission to Atmosphere

**A dust monitoring result of 258 mg/m<sup>2</sup>/day was recorded for dust monitoring location DM1 and while it was within the recommended deposition limit of 350 mg/m<sup>2</sup>/day, the level was noticeable elevation and no interpretation was provided. Provide repeat monitoring results for the dust deposition and provide a full interpretation of these results for dust monitoring location DM1 and a further dust monitoring location on the western boundary wall**

On-site dust monitoring at Coldwinters was undertaken at 2 locations DM1 and DM4 between January and April 2006. Total dust deposition was measured at the site using Bergerhoff Gauges as specified in the German Engineering Institute VDI 2119 document entitled "Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)". The dust gauges were set up so that the sample containers were approximately 2 m above ground level and located a safe distance away from trees and hedges. The samples were analysed by Geotesting Ltd Laboratory, Killcullen Co .Kildare. The results of the dust monitoring are as follows:

**Table 1 - Total Dust Monitoring Results - Greenclean Site January to February 2006**

Monitoring Period 32 days	DM1	DM4
From 21/01/06 to 21/02/06	223 mg/m <sup>2</sup> /day	Dust jar broken
From 06/03/06 to 04/04/06	n/a	278.7 mg/m <sup>2</sup> /day

There are several possible sources of particulates/dust in this industrial area including the open agricultural land and the other industrial units within the industrial park. Clearly the N1 road will also be a source of dust in the area. Since dust movement is dependent upon wind direction, wind data for Dublin Airport was examined. Available Met Eireann data indicated that the wind direction was predominantly from the west to the south quadrant. The wind direction at Coldwinters would be similar to this.

Although within the recommended 350 mg/m<sup>2</sup>/day limit, the dust deposition levels at DM 1 would be considered elevated. DM 1 was located on a palisade perimeter fence adjacent to the N1 road. This is a busy road and the dust levels are likely attributable to dust from the road being made airborne by passing traffic. All waste handling activities are undertaken indoors preventing dust escaping to the ambient atmosphere.

Dust monitoring was undertaken at another location along the western boundary. The First dust jar located at DM4 was vandalized and broken. A second dust jar was placed out in a secure manner on the 3<sup>rd</sup> of March 2006. The results for D4 were within the recommended limit of 350 mg/m<sup>2</sup>/day.

The results from DM1 and DM4 situated along the N1 indicated elevated levels of dust deposition in this area of the site although the dust levels remain below the guidance levels of 350 mg/m<sup>2</sup>/day.

## E2 Emissions to Surface Water

**Bacteriological test results for total coliforms and faecal coliforms undertaken at SW1 and SW2 are recorded in Appendix 2.6.1. A total coliform count of 6270 and 22,820 cfu/ml and a faecal coliform count of 308 and 727 cfu/ml were recorded for SW1 and SW2 respectively. Total colony counts are similarly in exceedence at SW2. Provide a full interpretation of these bacteriological test results undertaken at SW1 and SW 2**

The surface water results provided in Appendix 2.6.1 show good quality water in the Ballough stream both upstream (SW1) and downstream (SW2 and SW3) of the site. The elevated levels of bacteriological results found at all monitoring stations (SW1 to SW3) are not unusual in a river that serves a rural hinterland.

The chemical results recorded similar water quality at all three sampling stations thus indicating no impact of the facility on the river. If there was an outfall or impact from the site it is considered that it would have been reflected in the organic and inorganic results.

The fact that the bacteriological results are higher (coliforms approximately 3.6 times higher) at SW2 than SW1 is not in our view conclusive that there is an impact from the site causing these increased levels for the following reasons.

- i) The results further downstream at SW3 are more or less similar to the levels at SW1.
- ii) There are no known or visible discharges from the site that would cause an increase in bacteriological levels.
- iii) The levels are not sufficiently different to indicate a significant impact. When one considers that coliforms in raw sewage number some  $1 \times 10^6$  per 100ml the recorded values of 6,000 and 22,000 are not significantly different. While it is accepted that those at SW2 are higher this could have resulted from the timing and/or sample location. In a river serving a rural catchment it is often the case where cattle and other farm and wild animals have access to the rivers and cause a degree of contamination. The concentration of the contamination from such sources will not necessarily be consistent over time and space within the river particularly in parts of the river close to the source. Therefore, a higher level of contamination could be recorded in a river at one side than at the other side or at one depth as against another depth or at one moment in time as against another moment in time. Therefore, it is quite possible to obtain different coliform results from a river depending on the location, time and depth of sampling and proximity to the source of contamination. However, the key



point may be that the quality should not alter radically or significantly in such a scenario and it is possible that this is the case here. While the coliform results were higher at SW2 than at SW1 they were not radically different and there was no significant difference at SW3. In addition there was no significant difference in quality in terms of the organic and inorganic results at the three sampling stations.

#### E4 Emissions to Groundwater

**1. Section 4.5.1 Sources of Contamination/Mitigation measures. Provide the capacity of the underground sumps located just outside of the warehouse. Show the location of these sumps on drawing no. 023045-300 Main Drainage Layout. Provide an indication of the amount of leachate generated per year.**

The revised drawing 023045-500 Floor Plan of Main Warehouse shows the locations of the sumps and associated contained underground storage.

i) There are four sumps located outside the main building as shown on Drawing 023045-500. The sumps provide access points to the underground liquid storage for the buildings. There are four underground storage areas within the buildings each connecting to a sump manhole outside the buildings. Each area of underground storage is made up of four linear drainage ducts which connect to a main underfloor duct and the sump. The capacity of each area is estimated at 25.8m<sup>3</sup> giving an overall total of 103.2 m<sup>3</sup> for the buildings.

ii) The Main Drainage Layout showing the locations of the sumps can be found on the updated drawing no. 023045-500

iii) It is considered that there will be little or no leachate generated at the facility. All waste will be treated internally in the main processing building with no access for rain to the waste. On rare occasions some skips may be brought to the site that contain wet waste and leachate. The bulk of this will be absorbed by the waste in the skip or by other dry wastes in the processing building. However, some may drain off the floor to the underground collection system. It is not possible to accurately predict this volume of leachate, however, it is considered to be a very low or negligible amount.

It is proposed that the internal floor of the building will be washed down and cleaned periodically. This will comprise sweeping the area and then washing with a power hose. This will generate soiled water which will drain to the underground collection system. It is not possible to accurately predict the volumes of water required for this process, however, it is estimated that some 5m<sup>3</sup> will be required for each floor wash exercise (this is based on a notional usage of 2 l/m<sup>2</sup> of floor). If this is carried out six times per year then the overall annual volume of soiled water/leachate would amount to some 30 m<sup>3</sup> per year. The soiled water and leachate will be contained in the underground storage system and

pumped from the access sump on a regular basis or when required. The liquid will be exported off site to an appropriate waste water treatment plant for treatment and disposal.

2. It is stated on Drawing no. 023045-300 Main Drainage Layout that the new biocycle Sewage Treatment Plant will cater for 30 persons, however section 4.5.1 of the EIS Sources of Contamination/Mitigation measures stated ' there may be up to 50 employees working on site...' please clarify.

As stated above, the Biocycle wastewater treatment system is designed to cater for 50 No. staff (c. 4,000 l/day).

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## E5 Noise Emissions

1. Provide the noise monitoring results in the form of a 1/3 – octave band analysis frequency noise spectrum.

Table 1- Analysis of 1/3 Octave Frequency Bar Graphs

Location	Tones Detected at:	Possible Sources
NP 1	5 kHz and 8 kHz	Machinery noise from within transfer station
NP 2	50kHz , 2.5kHz/ 12.5kHz	Traffic on N1
NP 3	1.6kHz	Machinery noise from within transfer station. Background traffic noise
NP 4	No tones detected	
NP 5	250kHz, 5kHz and 12.5kHz	Traffic on N1
NP 6	No tones	
NP 7	630Hz and 10kHz	Traffic, reversing alarm, engine noise form adjacent factory

All noise graphs can be found in Appendix 2

2. Section 4.3.2.1 of the EIS Construction phase makes reference to Figures 3.1.1 which has been omitted from the application. Please provide a copy of Figure 3.1.1

Please find attached Figure 3.1.1 Site Layout

## G1 Resource Use and Energy Efficiency

Table G1 containing data relating to the projected raw materials/energy requirements for the proposed facility is unclear. Please provide this data in the Table G1 format provided in Annex 1 of the Waste Licence Application Form. Additional advice on completing this section is provided in the Waste Licensing Application Guidance Note.

The projected materials and energy requirements are provided in Table G.1 below. The actual usage of these materials will be confirmed over the course of the operation and will be reported in the AERs to be provided to the EPA on an annual basis.

**Table G.1 Projected Materials and Energy Requirements**

Utilities Requirements - Quantities					
Tons per Annum		25000	50000	75000	90000
Electricity	Units	4000000	7500000	11000000	14500000
Diesel	Litres	49020	98039	147059	1961
Oils Hydraulic	Litres	333	667	958	1250
Oils Engine	Litres	389	778	1111	1333
Water Cu.M.	Cu. M.	600	1200	1800	2400

**H1 Waste Types and Quantities – Existing and Proposed**

Complete Table H.1. (a) providing an estimation of the quantity of waste likely to be handled in relation to each class of activity applied for.

Waste Management Act 3rd Schedule (Disposal) Activities		Waste Management Act 4th Schedule (Recovery) Activities	
Class of Activity Applied For	Quantity (tpa)	Class of Activity Applied For	Quantity (tpa)
Class 1		Class 1	
Class 2		Class 2	44,700
Class 3		Class 3	1,800
Class 4		Class 4	28,500
Class 5		Class 5	
Class 6		Class 6	
Class 7		Class 7	
Class 8		Class 8	
Class 9		Class 9	
Class 10		Class 10	
Class 11	20,000	Class 11	
Class 12	20,000	Class 12	
Class 13	20,000	Class 13	75,000 tpa

**I12 Assessment of Impact on receiving Surface Water**

**Section 4.6.3 of the EIS Mitigation Measures states any leaks occurring during the loading/unloading of diesel/oils will be collected into the 'acco' drain which drains to the Klargerter Oil interceptor. Provide details of how such waste oil will be managed.**

The Acco collection drain drains to the Klargerter oil interceptor. The oil interceptor will be checked on a weekly basis or more frequently if required. When it is observed that there is an accumulation of oil in the interceptor a specialist contractor will be employed to pump out the oil from the surface of the interceptor into a sealed road tanker. The contractor will be required to hold appropriate collection permits and the waste oil will be transported to a licensed facility to treat/dispose of the oil.

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## **Non Technical Summary**

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## Non Technical Summary

As required by Article 12 (1) (q) of the Waste Management (Licensing) Regulations, 2000 a non technical summary is provided below which contains information on the matters listed in article 12(1)(e) to (p).

### 1. Nature of the Facility

#### **This section relates to Article 12(1)(e)**

Greenclean Waste Management Ltd. was granted planning permission (Planning Register No. F03A/0710) and a waste permit by Fingal County Council to operate a Recycling Centre at Coldwinters, Blakes Cross, Lusk, Co. Dublin (Waste Permit Reference: WPT 43). The company presently process some 14,500 tonnes/annum of non-hazardous commercial, industrial, household, construction and demolition wastes.

Greenclean intend to expand its business and operations and has applied to the Environmental Protection Agency (EPA) for a licence to handle 95,000 tonnes at the Coldwinters facility. The company will extend their property to the east to include an additional 1.21 ha to facilitate the increase in waste throughput at the site.

The facility consists of a materials recovery building dedicated to the mechanical and manual segregation of skip waste, an administration building which houses offices, canteen, storage and toilets. The site also contains a weighbridge, a weighbridge office, ESB substation and fuel storage areas. It is proposed to construct a new truck maintenance workshop along the southern boundary of the site, additional offices to the east of the existing offices, a wheelwash to the east of the weighbridge, a bridge over the Ballough stream and asphalt on the newly acquired lands to the east of the stream along with other minor alterations to the existing site.

The opening hours at the facility are from 8.00a.m. to 6.00 p.m. Monday to Friday and from 8.00 am to 2.00pm Saturday to the receiving of waste. The site will be open for an extra hour in the morning and two hours in the evening to prepare the site for operations and to complete processing of waste and tidy up in the evenings. This Waste Licence Application details a proposal to increase the current permitted tonnage from 14,500 tonnes per annum to 95,000 tonnes per annum.

The site is accessed from the N1 (recently downgraded to the R132 since the opening of the M1 motorway). Surrounding activity is a mixture of industrial/commercial developments, agriculture and residential developments.

The facility design, operation and management is fully described at Section 3 of the Main Text of the EIS which accompanied the original Waste Licence Application. In regards to this report dealing with Article 12 Compliance Information, all updates drawings and figures are attached.

## 2. Classes of Activity

### **This section relates to Article 12(1)(f)**

In accordance with the Third and Fourth Schedules of the Waste Management Act, 1996 (WMA, 1996) the following classes of activity will be carried out on the site:

#### Third Schedule-Waste Disposal Activities

- "11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule."
- "12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule."
- "13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this schedule, other than temporary storage, pending collection, on the premises where such waste is produced."

#### Fourth Schedule-Waste Recovery Activities

- "2. Recycling or reclamation of organic substances which are not used as solvent (including composting and other biological transformation processes". (Principal activity).
- "3. Recycling or reclamation of metals and metal compounds."
- "4. Recycling or reclamation of other inorganic materials."
- "13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this schedule, other then temporary storage, pending collection, on the premises where such waste is produced."



### 3. Quantity and Nature of the Waste to be Disposed

#### **This section relates to Article 12(1)(g)**

The Greenclean facility is currently permitted to handle 14,500 tonnes per annum of non-hazardous waste. It is proposed to increase the amount of waste handled to 95,000 t/a.

### 4. Raw and Ancillary Materials, Substances, Preparations used on the Site

#### **This section relates to Article 12(1)(h)**

The main raw materials to be used on site are diesel, water and electricity. Minor amounts of engine oil and hydraulic oil will be used in the day-to-day operation of the facility.

### 5. Plant Operating Procedures

#### **This section relates to Article 12(1)(i)**

The facility currently operates from 8:00 am to 6:00 pm Monday to Friday and from 8.00 am to 2.00 pm Saturday. The Company employs approximately 55 full time staff including drivers. Plant machinery to be used at the facility includes 1 (no.) grab, 1 (no.) loading shovel, 1 (No.) trommel, starscreen, 1 (No.) shredder, a compactor, overband magnet, 1 (No.) windshifter, conveyors and picking station.

Waste processing operations will be conducted mechanically and manually within the main warehouse. Skip waste from commercial premises and construction and demolition sites will be shredded and segregated by means of an overband magnet, trommel and windshifter. Individual waste fractions will be stored in individual bays prior to transportation to markets.

The site will be operated and monitored in accordance with conditions issued by the EPA and specified in the Waste Licence. Regular environmental monitoring will be carried out and an annual status report will be prepared and submitted to the EPA.

### 6. Emissions

#### **This section relates to Article 12(1)(k)**

The potential emissions from the facility are divided into emissions to air, groundwater, surface water and noise emissions.

### **Emissions to Air**

Air emissions include dust and potentially small emissions of odours.

### **Emissions to Groundwater**

Groundwater emissions include treated wastewater effluent from the Biocycle treatment plant via the percolation area.

### **Emissions to Surface Water**

Surface water emissions include rainfall run-off from the roofs, yards, paved and unpaved areas of the site.

### **Noise Emissions**

Noise emissions include those generated by the on-site plant and equipment and traffic generated by the facility.

## **7. Assessment of the Effects of Emissions on the Environment**

### **This section relates to Article 12(1)(1)**

The impacts on groundwater, surface water, air and noise at the facility were seen as potential negative impacts of the development and mitigation measures for each of these issues are proposed. It is predicted that there will be no significant adverse effects from the development after mitigation measures are in place.

## **8. Information related to Section 40(4) (a) to (d) of the WMA, 1996**

### **This section relates to Article 12(1)(j)**

#### **8.1 Compliance with Emissions**

##### **Dust**

There are no National or EU standards for dust deposition. By law the facility will be required to be in compliance with Air Pollution Act, 1987. All dust levels measured on site, including a 4<sup>th</sup> location, were below the EPA recommendation of 350 mg/m<sup>2</sup>/day. Dust emissions are not expected to pose a problem at the facility as all waste processed at the facility will be handled in the main warehouse with dust suppression systems and it is proposed to monitor dust emissions from the facility three times per year, twice in Summer and once in Winter.

### **Odours**

There will be no harmful aerosols generated at the facility. It is considered that due to the minor quantities of domestic waste to be processed at the facility that no significant odours will be generated. All waste will be processed within a maximum 48 hours (typically within 12 hours) and waste will not have the opportunity to generate decomposition gases. Therefore it is not deemed necessary to formally monitor odours at the facility. Odours will be perceived on an ongoing basis by site staff and the site manager and a complaints register will be maintained on site. Any odours perceived or complaints recorded will be acted upon immediately and controlled. This can be done by exporting the offending waste immediately off site and/or by use of industrial odour reducing agents in the dust control system.

### **Noise**

The EPA currently stipulate a day-time guideline for  $L_{Aeq}$  of 55 dB(A) and a night-time guideline for  $L_{Aeq}$  of 45 dB(A) at sensitive locations. Mitigation measures for negative impacts of the development are proposed in Section 4.3 of the EIS and include processing all waste inside the main warehouse, using and regularly servicing modern equipment and switching off or throttling back unused equipment. Noise will be monitored at least once per year at the facility and additionally if specified in the waste licence.

### **Water**

As detailed in the EIS the risk to the groundwater posed by the activities at the site are considered insignificant and no groundwater monitoring is proposed. The site is located in an industrial area therefore surface water from paved areas of the site will discharge to man made storm drains. All non-roof surface water will pass through a silt trap and klargester class 1 full retention oil interceptor prior to discharge to the storm water attenuation tanks. Roof drainage will drain directly to the attenuation tanks. The attenuation tanks will incorporate a hydrobrake which will regulate flow to the Ballough stream and mitigate any potential for flooding in the stream. It is proposed to monitor the surface water discharge from the facility in addition to upstream and downstream monitoring locations on the Ballough stream.

## **8.2 Environmental Pollution**

The design and operating practices that ensures that environmental pollution is avoided are listed below.

### **Risk to Waters is avoided by:**

- All hydrocarbon tanks will be double contained and loading/unloading areas for these will be enclosed by acco drains.

- Only clean roof water will discharge directly to the attenuation tanks.
- Surface water run off from all hardstanding areas will be directed to the attenuation tanks via a silt trap and oil interceptor. All rainfall run-off will be directed to the storm water attenuation tanks for flow regulation prior to discharge to the Ballough stream.
- All waste will be processed in a covered building with concrete floors.
- All hardstandings are concreted or constructed of asphalt.
- All foul water from toilets and canteen facilities will be directed to the Biocycle wastewater treatment tank and discharged to the percolation area located in the northwestern corner of the site. The percolation area was designed in accordance with the Biocycle Agreement certificate and EPA guidelines.
- All foul water from the wheelwash and acco drains will be directed to the Klargestor oil interceptor.

**Risk to the Atmosphere is avoided by:**

- Due to the nature of waste to be handled at the facility there will be little decomposition gases or odours generated at the facility.
- Dust will be controlled by handling all waste indoors, use of dust suppression systems, the wheelwash and regular sweeping of the open yard.

**Risk to Land, Soil, Plants or Animals is avoided by:**

- Risk to land and soil beneath the site is avoided by the same controls that avoid risk to Waters as described above.
- Risk to plants and animals is avoided by the location of the development removed from areas of special ecological importance. The flora and fauna in the vicinity of the site are not considered sensitive to the site activities.

**Nuisance through Noise, Odours or Litter is avoided by:**

- All wastes will be handled in a contained building and all vehicles carrying these wastes will be covered.
- Daily litter patrols will be carried out at the site.
- All hardstanding areas within the facility will be concreted or asphalted.

- The facility will handle only minor quantities of putrescible waste and all waste will be processed within 12 hours (maximum 48 hours), therefore there will be no significant odour and decomposition gas emissions.
- No liquid waste or sludges will be handled at the facility and hence there will be no aerosol emissions from the site.

These pollution control measures will also have the effect of reducing the nuisance of dust emissions from the site.

**Adverse effects on the countryside or places of interest are avoided by:**

- Operating the site with adequate environmental controls.

**8.3 - Best Available Techniques (BAT)**

The principle of employing BAT is being applied at the Greenclean facility in respect to emissions as follows.

Greenclean has, and will, employ modern management practices and continue to commit financial resources in order to control all nuisance emissions and ensure protection of the environment. The existing management practices include ensuring that all plant and equipment are fully serviced and operational, transporting waste within covered vehicles, regularly cleaning site surfaces and regularly patrolling for litter.

The existing and proposed equipment on site such as picking lines, shredder, loading shovels, baler, compactor, recycling plant and weighbridge are examples of the best available technology for such facilities.

Specialist consultants have and will be retained as required to monitor potential nuisances and all relevant environmental media set out by the EPA. The consultants will inform the company on a regular basis of improvements in pollution abatement or other relevant technology. The costs of the facility and adhering to the modern management practices will be financed from Greenclean's annual revenues or short term bank loans.

#### 8.4 Fit and Proper Person

Greenclean Waste Management Ltd. or the company directors have never been convicted of any offences under the waste management act.

Greenclean Waste Management Ltd. are a leading Waste Management company currently operating in Ireland. The company employ c. 55 employees at their waste management facility at Coldwinters, Blakes Cross, Lusk, Co. Dublin. The company have operated a waste collection and recycling business for many years and previously operated a Recycling Centre under waste permit at St. Annes, Cloghran, Co. Dublin. The company presently operate the most up to date recycling plant in the country incorporating trommel, star screen, windshifter, magnets, non-ferrous removal, hand picking stations, compacting, baling etc. The company have demonstrated their technical competence and site management through their continued involvement in the waste industry, the quality of their plant technology and processes and the testament of their clients whom they have served over the years.

The management team is composed of experienced personnel who have spent many years in this sector of the waste industry. The facilities manager will be responsible for all environmental aspects of the operation and in particular compliance with the waste license. He will be assisted by an environmental technician whose duties will include compilation of environmental data and meeting the requirements of the waste license. The facilities manager and/or the environmental technician will complete the FAS course for waste facility management.

The company have operated their facility at Coldwinters in full compliance with waste permit WPT 43.

In light of these facts, the applicant is deemed a fit and proper person to hold a licence.

Financial commitments will be required to cover development, operation, aftercare management and restoration of the site. Greenclean is in a sound financial position and with the projected operating revenues and bank loans will be able to finance these elements. Environmental pollution or closure due to bankruptcy will be financed by insurance policies or bonds.

## 9. Monitoring and Sampling Points

**This section relates to Article 12(1)(m)**

The proposed monitoring is as follows:

Dust -three times a year (twice in Summer and once in Winter)

Noise -annually

Surface Water Discharge -quarterly

## 10. Off-site Treatment or Disposal of Wastes

**This section relates to Article 12(1)(n)**

The proposed destination of wastes from the facility is detailed in Section 1 of the EIS where current markets available to Greenclean are presented. Details of all future markets that may be secured by the Company will be furnished to the Agency. Any residual wastes that cannot be recycled will be disposed of at licensed landfill sites.

## 11. Emergency Procedures to prevent Unexpected Emissions

**This section relates to Article 12(1)(o)**

Emergency response procedures for preventing unexpected emissions are detailed in Section 3.8 of the EIS. These cover procedures for unexpected oil spills, fire and equipment breakdown.

## 12. Closure, Restoration and Aftercare of the Site

**This section relates to article 12(l)(p)**

Operations at the facility will have an open ended life span. In the event of the closure of the facility a closure plan will be developed as outlined in Section 3.7 of the EIS.

## Figure 3.1.1

### Site Layout

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Corduff

Teagasc

House

House

House

Greenhouse

House

Traffic Count

Greenhouse

Greenhouse

Garden Nursery

Eastern Health Board Residential Unit

N1

Recycling Centre

Proposed Parking/Skip Storage Area

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Ballobish Stream

Coldwinters

House

House

Dublin

Williams Freight

Lusk

Traffic Count

House

Greenhouses

Petrol Station

**LEGEND**

— Site Boundary

This drawing is not to scale. No measurements are to be taken from this drawing

Greenclean Waste Management Ltd.  
Site Layout

Figure No. 3.1.1

Job No. CE05010

Date. Apr. 2006

Finalised By -



09(10)

## **Appendix 1**

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# MobyDick Dragon

Int. pat pending

The Wheelwashing System for lighter soiling of the truck wheels!



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**Description of operation:**

The MobyDick Dragon is a compact, efficient Wheelwashing System for operation on construction sites and landfills and for recycling, aggregate and industrial works. It is suitable for permanent or mobile applications and can be used everywhere, where the degree of truck wheel soiling is not too heavy or where there are dust control issues.

- Ready for operation in 2 hours
- Wash area 330 cm = 1 complete tire revolution
- Integrated water recycling



The approaching truck starts the wash cycle automatically via a photo sensor.



The wheels are washed intensively both from the sides and underneath as the truck drives slowly through.



The wash water flows across the "wings" of the Dragon back into the recycling tank where it is treated ready for the next truck.

# MobyDick Dragon

Ready for operation in 2 hours:



**00:00 hours**  
Digging out the pit for the recycling tank.



**00:40 hours**  
Setting down the recycling tank.



**00:55 hours**  
Backfilling around the recycling tank

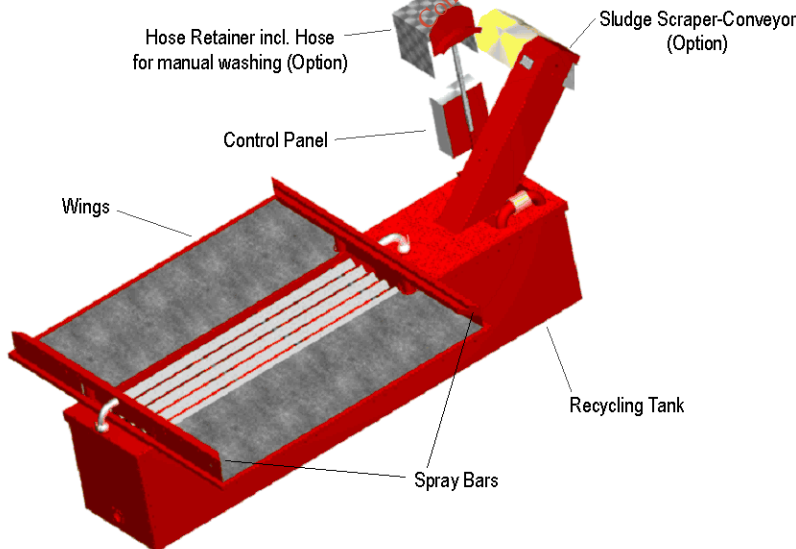
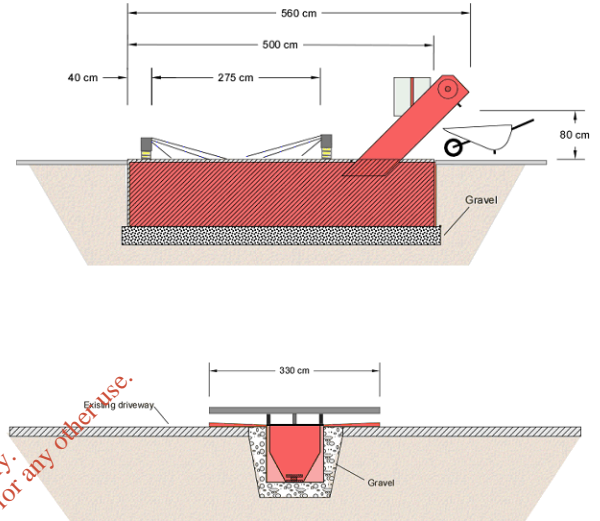
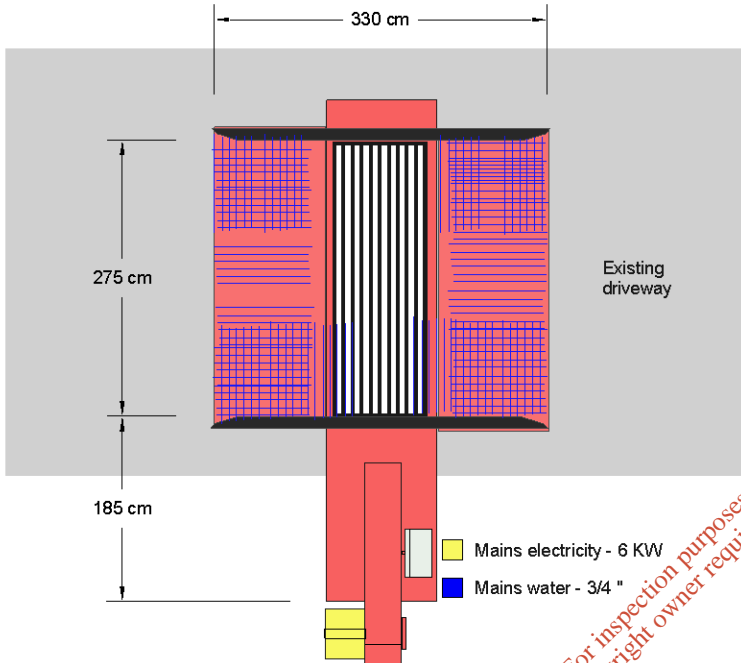


**01:20 hours**  
Fitting the wings and spray bars. Connecting the power and water



**02:00 hours**  
Washing the 1<sup>st</sup> truck!

## Assembly Plan:



**Weight:**  
without SC ca 2'500 Kg  
with SC ca 2'700 Kg

**Transport Dimensions:**  
580 x 245 x 110 cm

**Connected Load:**  
without SC 5,5 kW  
with SC 6 kW

**Spray-Performance:**  
1'600 lt per Minute

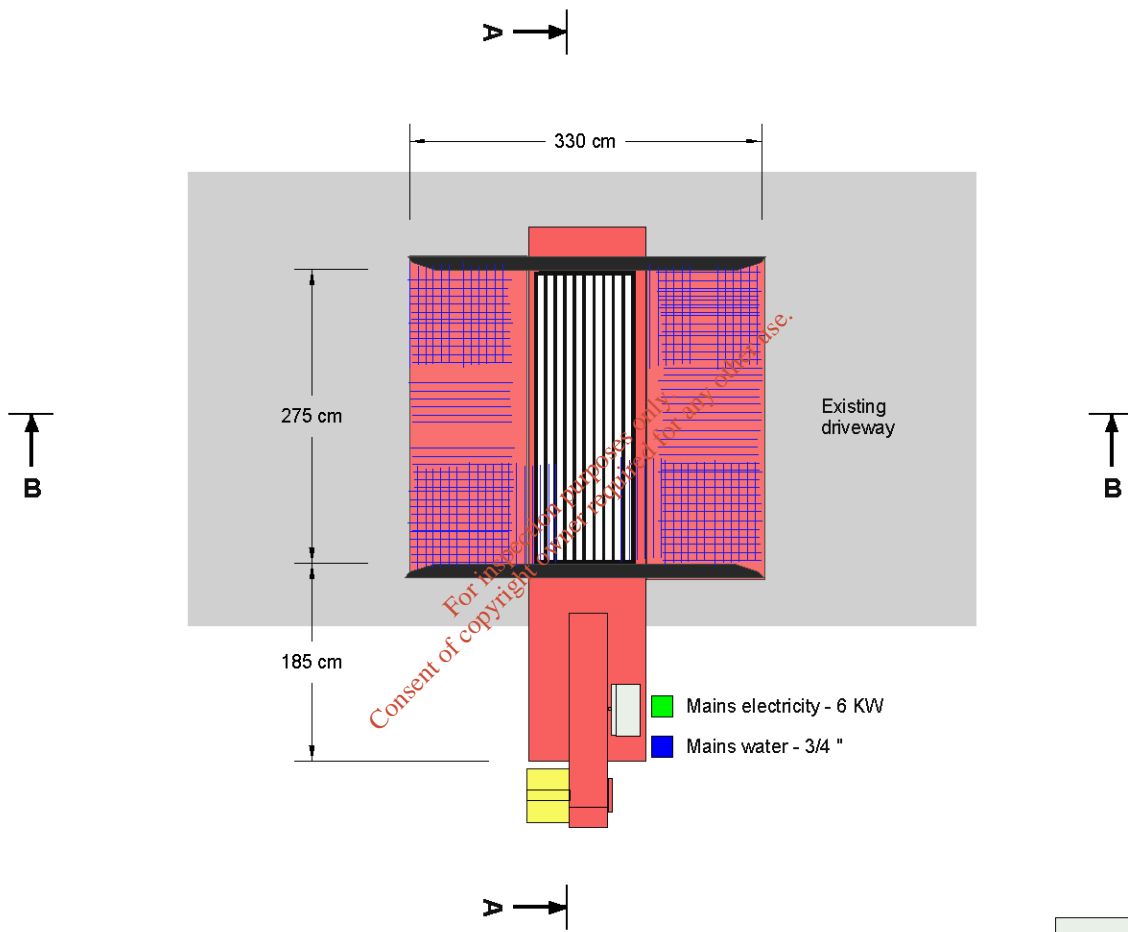
(SC = Scraper-Conveyor)



## FRUTIGER



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Telefon +41 52 234 11 11  
Telefax +41 52 234 11 00  
E-Mail info@frutiger.ch  
Web [www.mobydick.com](http://www.mobydick.com)

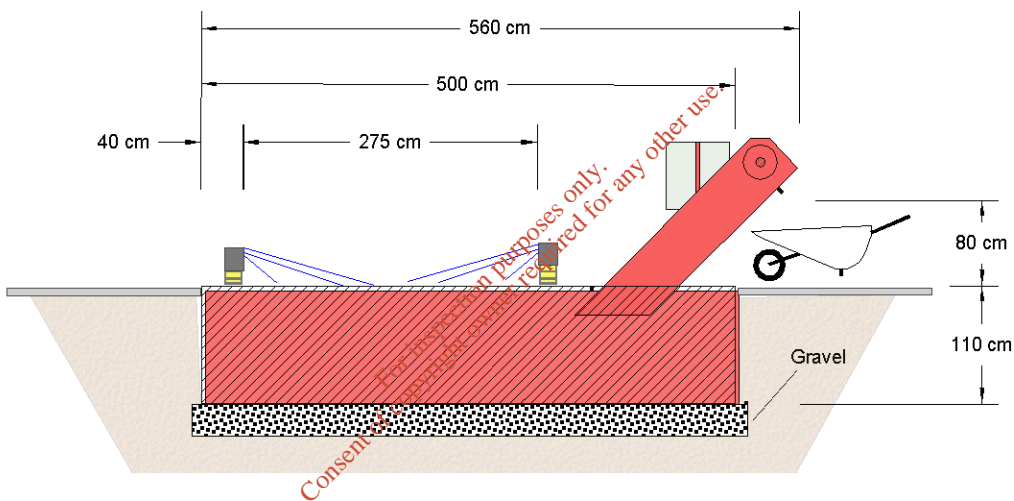
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PLAN VIEW



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V 1.0	MW	1/3
<b>MobyDick Dragon</b>		
Assembly Plan		
		
www.mobydick.com		

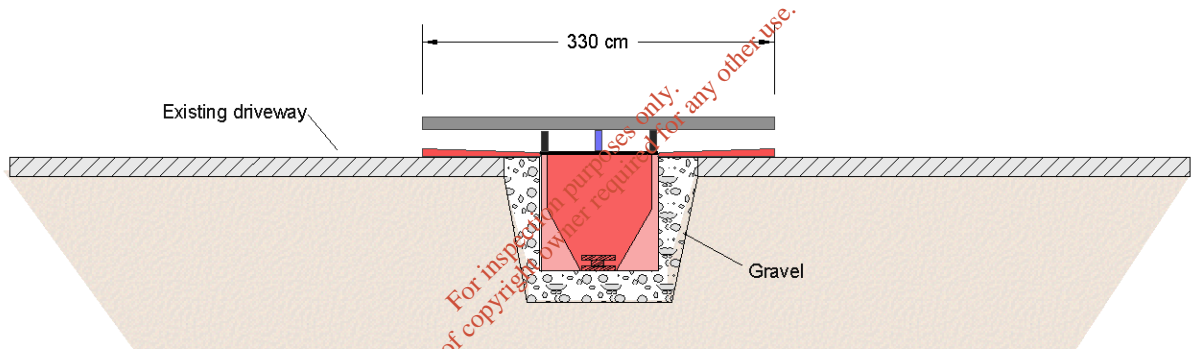


**SECTION A - A**

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V 1.0	MW	2/3
<b>MobyDick Dragon</b>		
Assembly Plan		
		







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SECTION B - B

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	V 1.0	MW	3/3
<b>MobyDick Dragon</b>			
Assembly Plan			
			

## **Appendix 2**

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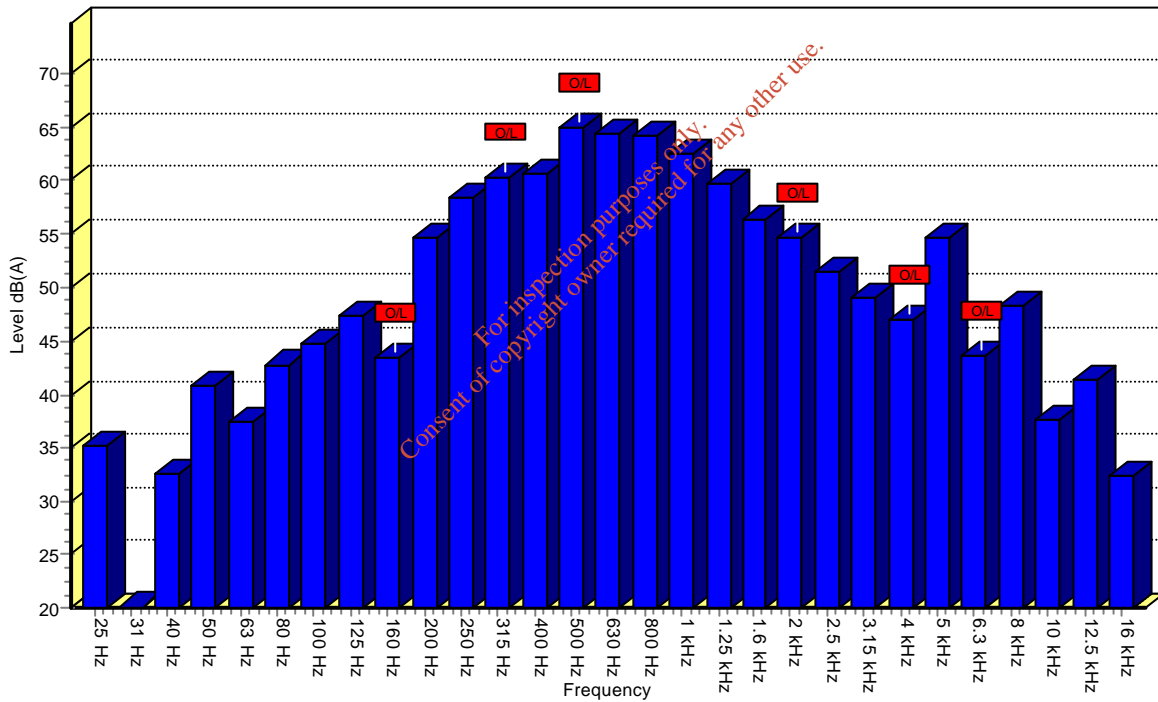
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Date: 28/02/06 Time: 10:35:15

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	35.2	20.2	32.6	40.8	37.4	42.7	44.7	47.4	43.4 <sup>^</sup>	54.7	58.3
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	60.4 <sup>^</sup>	60.6	64.9 <sup>^</sup>	64.4	64.1	62.6	59.7	56.3	54.7 <sup>^</sup>	51.5	49.0
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCEq	LZeq	
Level (dB)	46.9 <sup>^</sup>	54.6	43.7 <sup>^</sup>	48.3	37.7	41.4	32.3	69.6	78.8	80.5	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 1 - 1/3 Octave Frequency Analysis

Printed: 28/02/06 17:24:50

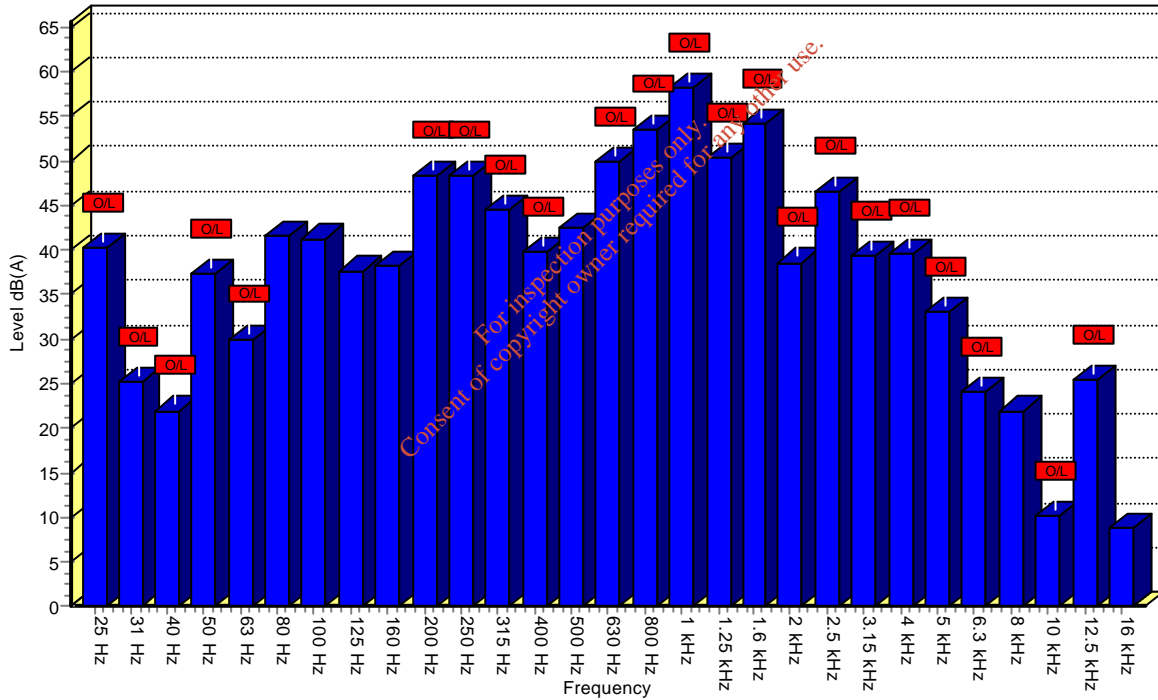
# Noise Measurement Report

Date: 28/02/06 Time: 10:22:26

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	40.2 <sup>^</sup>	25.2 <sup>^</sup>	22.0 <sup>^</sup>	37.3 <sup>^</sup>	30.1 <sup>^</sup>	41.5	41.3	37.6	38.2	48.4 <sup>^</sup>	48.4 <sup>^</sup>
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	44.6 <sup>^</sup>	39.8 <sup>^</sup>	42.6	49.8 <sup>^</sup>	53.6 <sup>^</sup>	58.3 <sup>^</sup>	50.3 <sup>^</sup>	54.1 <sup>^</sup>	38.6 <sup>^</sup>	46.5 <sup>^</sup>	39.2 <sup>^</sup>
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCEq	LZeq	
Level (dB)	39.7 <sup>^</sup>	32.9 <sup>^</sup>	24.2 <sup>^</sup>	21.9	10.1 <sup>^</sup>	25.3 <sup>^</sup>	8.8	58.2	72.8	86.0 <sup>^</sup>	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 2 - 1/3 Octave Frequency Analysis

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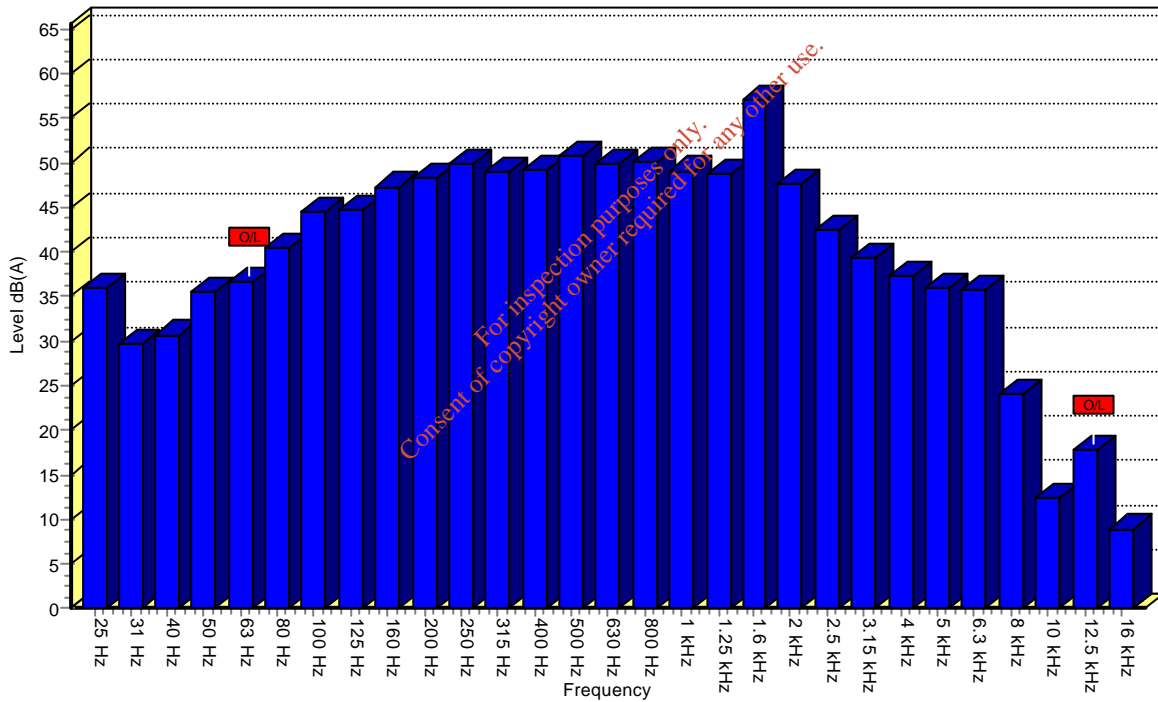
# Noise Measurement Report

Date: 28/02/06 Time: 10:29:21

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	35.9	29.6	30.8	35.5	36.6 <sup>^</sup>	40.5	44.5	44.8	47.4	48.4	49.9
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	49.0	49.3	50.7	49.9	50.1	49.1	48.8	57.1	47.6	42.5	39.3
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCeq	LZeq	
Level (dB)	37.3	36.0	35.7	24.1	12.3	17.8 <sup>^</sup>	8.9	57.7	73.3	78.2	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 3 - 1/3 Octave Frequency Analysis

Printed: 28/02/06 17:23:54

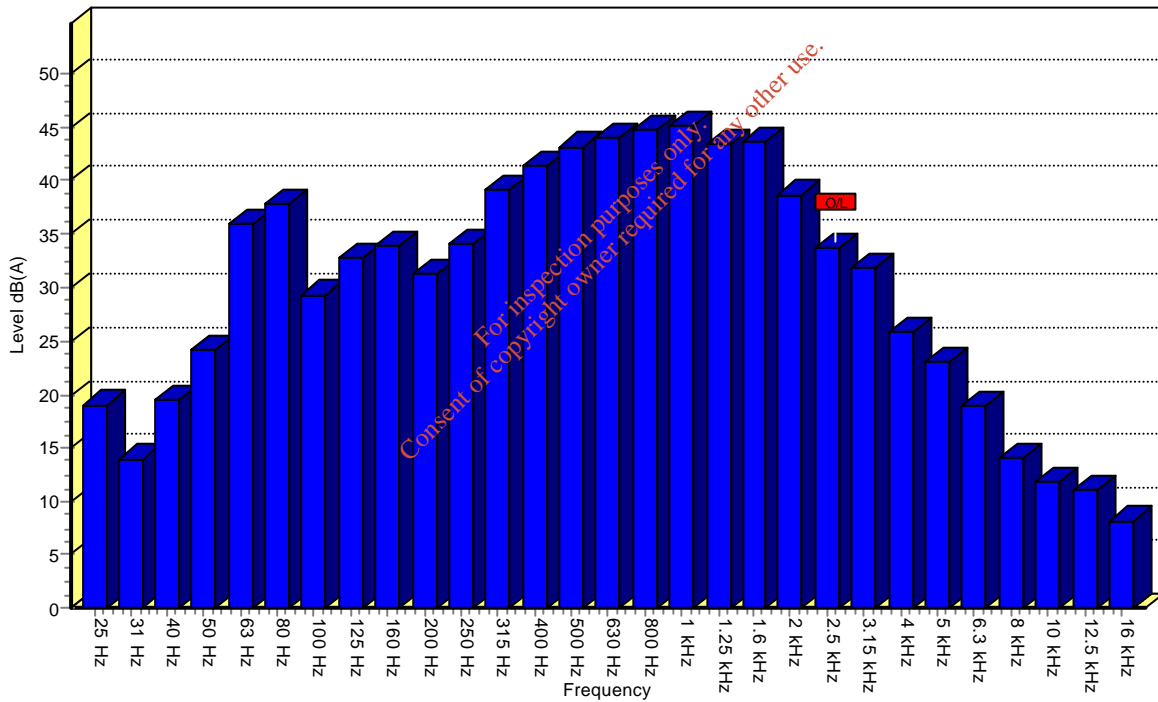
# Noise Measurement Report

Date: 28/02/06 Time: 10:09:36

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	19.1	14.0	19.6	24.2	36.0	37.8	29.3	32.8	33.9	31.3	34.1
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	39.1	41.4	43.1	44.0	44.8	45.1	43.5	43.7	38.7	33.8 <sup>^</sup>	31.9
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCeq	LZeq	
Level (dB)	25.9	23.0	18.8	14.2	11.9	11.2	8.1	54.6	63.9	68.4	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 4 - 1/3 Octave Frequency Analysis

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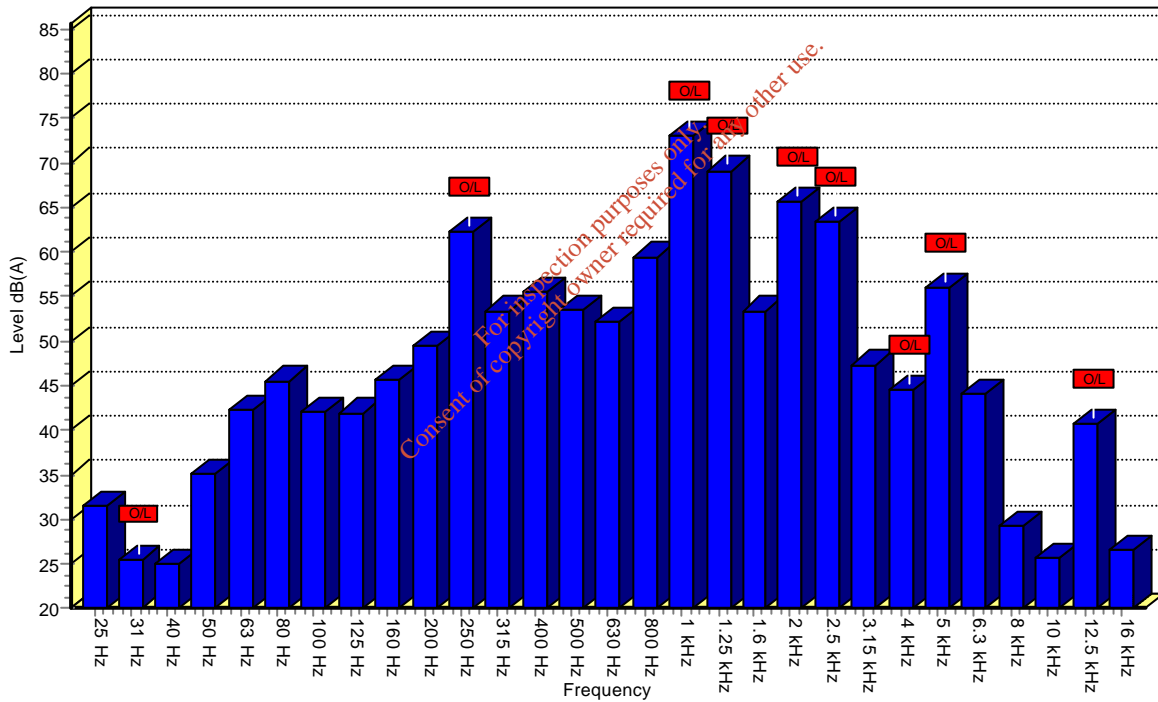
# Noise Measurement Report

Date: 28/02/06 Time: 10:01:47

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	31.4	25.6 <sup>^</sup>	24.9	35.2	42.4	45.5	42.2	42.0	45.7	49.5	62.3 <sup>^</sup>
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	53.5	55.5	53.5	52.2	59.5	72.9 <sup>^</sup>	69.1 <sup>^</sup>	53.4	65.5 <sup>^</sup>	63.3 <sup>^</sup>	47.3
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCEq	LZeq	
Level (dB)	44.5 <sup>^</sup>	55.8 <sup>^</sup>	44.0	29.2	25.6	40.7 <sup>^</sup>	26.6	71.8 <sup>^</sup>	78.0	74.0	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 5 - 1/3 Octave Frequency Analysis

Printed: 28/02/06 17:20:42

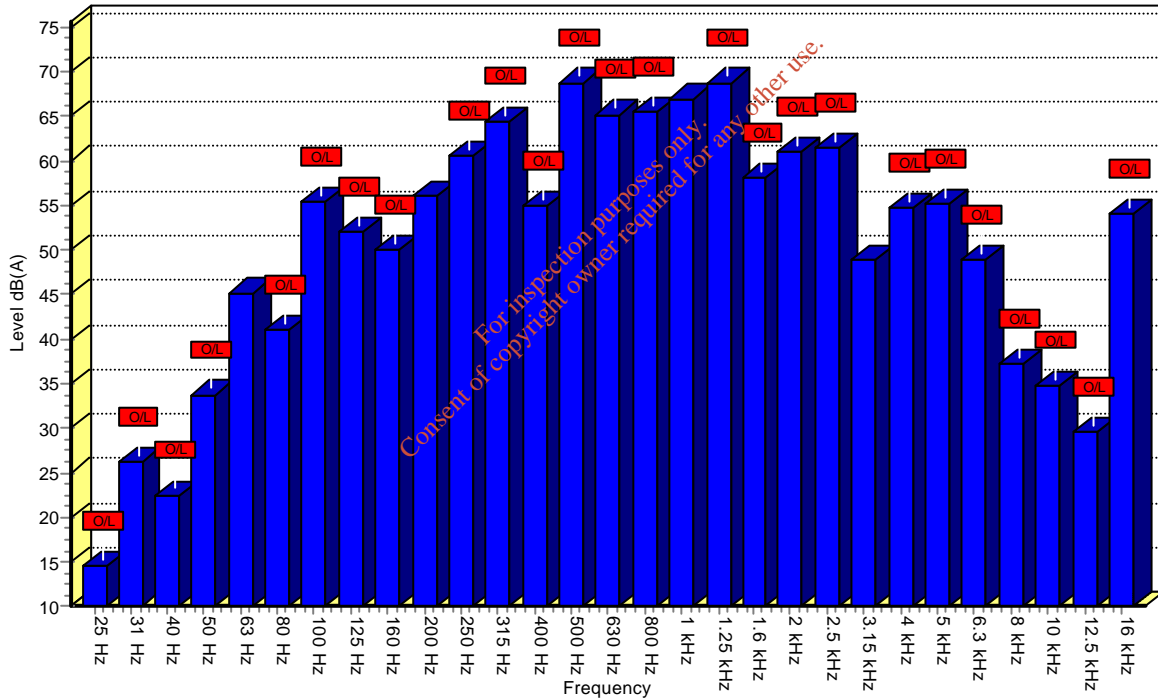
# Noise Measurement Report

Date: 28/02/06 Time: 09:51:54

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	14.5^	26.2^	22.5^	33.7^	45.1	41.1^	55.3^	51.9^	50.1^	56.0	60.5^
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	64.4^	55.0^	68.7^	65.1^	65.6^	67.0	68.7^	58.1^	61.1^	61.4^	48.9
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCEq	LZeq	
Level (dB)	54.6^	55.2^	49.0^	37.1^	34.9^	29.7^	54.2^	71.3	76.7^	84.3^	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

^ indicates overload



Notes: NP 6 - 1/3 Octave Frequency Analysis

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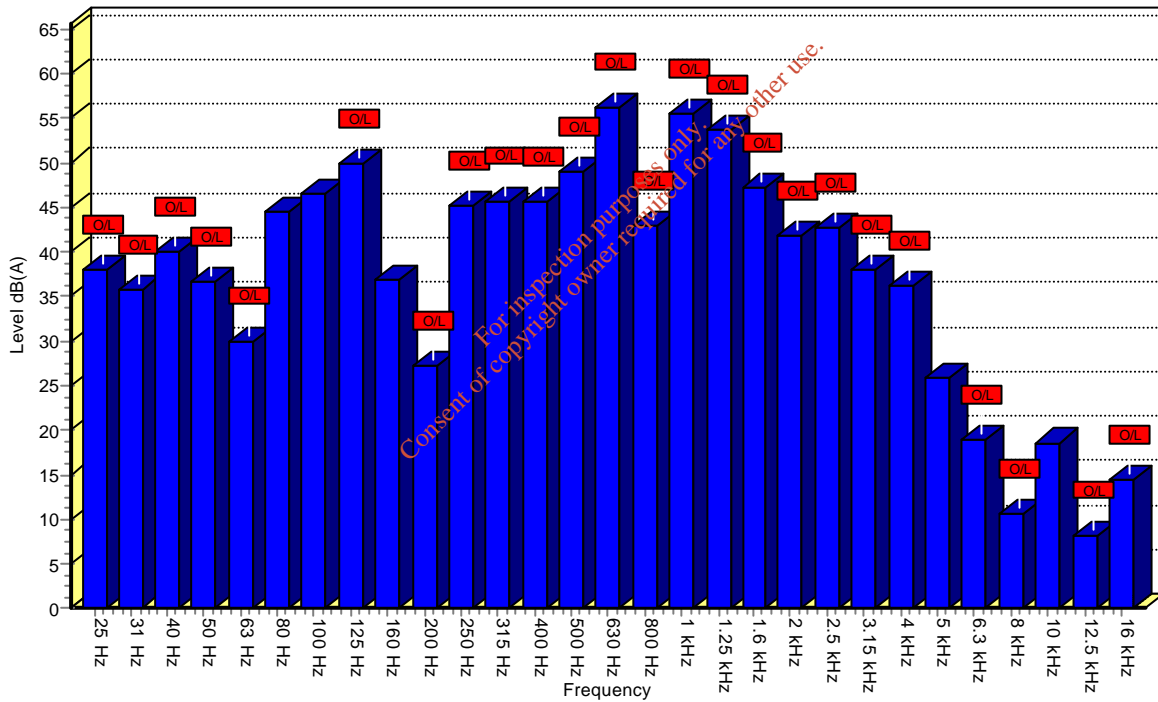
# Noise Measurement Report

Date: 28/02/06 Time: 10:43:14

Run Time: 00:04:48  
 Range: 30-90 dB  
 Spectrum 'A' weighted

Measurement	25 Hz	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz
Level (dB)	38.0 <sup>^</sup>	35.7 <sup>^</sup>	40.0 <sup>^</sup>	36.5 <sup>^</sup>	29.9 <sup>^</sup>	44.4	46.5	49.9 <sup>^</sup>	36.8	27.2 <sup>^</sup>	45.2 <sup>^</sup>
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz
Level (dB)	45.7 <sup>^</sup>	45.5 <sup>^</sup>	49.0 <sup>^</sup>	56.3 <sup>^</sup>	42.8 <sup>^</sup>	55.5 <sup>^</sup>	53.8 <sup>^</sup>	47.1 <sup>^</sup>	41.7 <sup>^</sup>	42.6 <sup>^</sup>	38.0 <sup>^</sup>
Duration (s)	9	9	9	9	9	9	9	9	9	9	9
Measurement	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	LAeq	LCEq	LZeq	
Level (dB)	36.3 <sup>^</sup>	25.9	19.0 <sup>^</sup>	10.4 <sup>^</sup>	18.6	8.2 <sup>^</sup>	14.5 <sup>^</sup>	56.8	71.6	79.8	
Duration (s)	9	9	9	9	9	9	9	9	9	9	

<sup>^</sup> indicates overload



Notes: NP 7 - 1/3 Octave Frequency Analysis

Printed: 28/02/06 17:25:32

# Engineer Drawings

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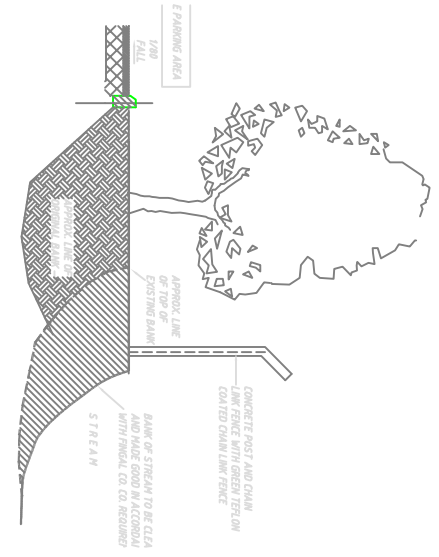
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Project: PROPOSED RECYCLING FACILITY AT BLAKES CROSS, LUSK, CO. DUBLIN.  
Client: MAIN DRAINAGE LAYOUT



April 2006 - Issued for Waste Licence Application

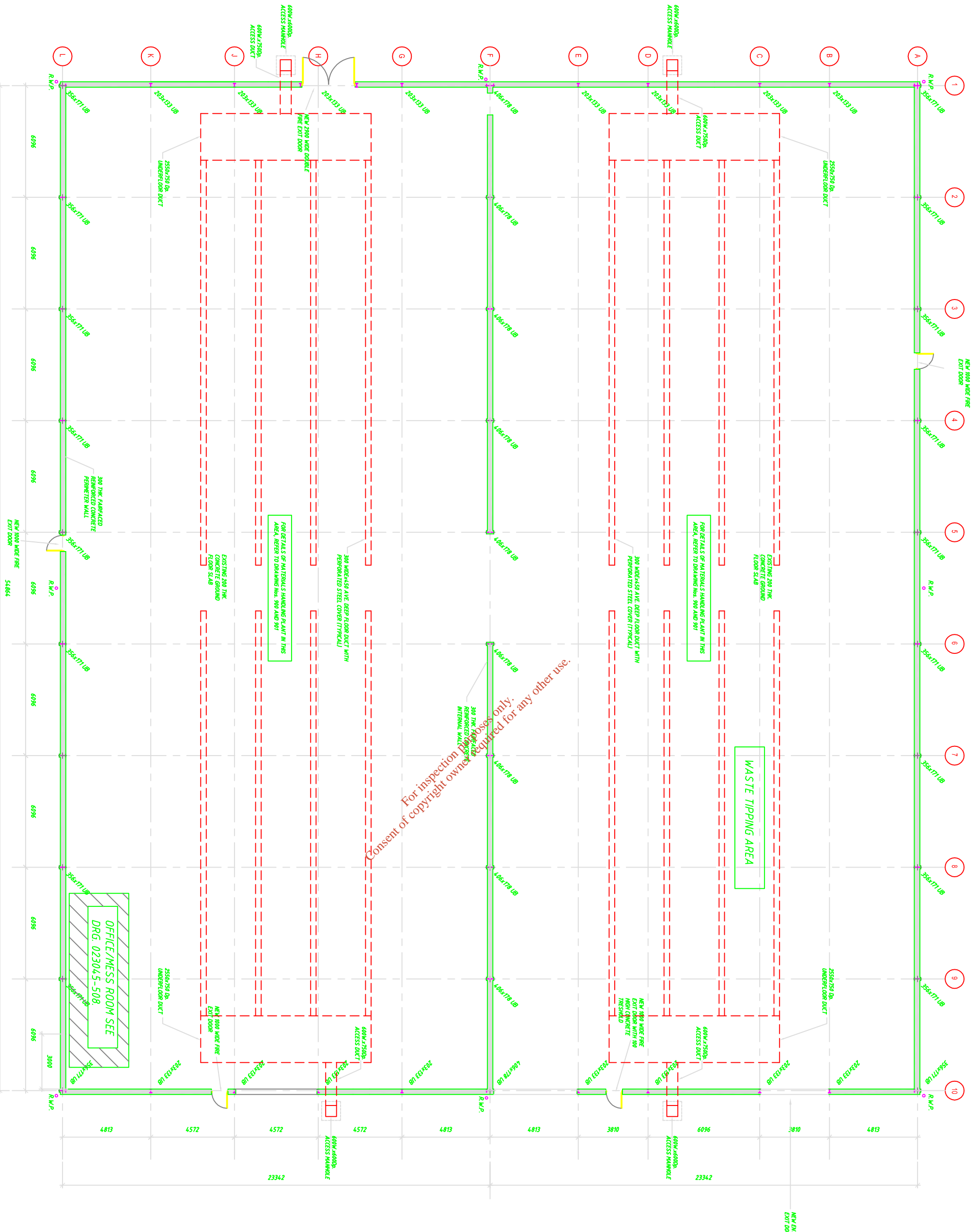
SECTION 1-1  
SCALE 1:50



NOTES:  
DRAWING TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS & ENGINEERS DRAWINGS & SPECIFICATION.  
2. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.

rev.	date	description	by	chkd
D	06/04/06	ADD DRAWN ASPECT AT WORKSHOP	DM	DM
C	22/09/05	REVISED AND IMPROVED	DM	DM
B	20/10/05	ATTENUATION TANK SIZE REVISED	DM	DM
A	19/09/05	ATTENUATION DETAILS REVISED & WORKSHOP ASPECT	DM	DM
rev.	12/09/05	ISSUED FOR REGISTRATION	DM	DM

client: INTERNATIONAL PLANT HIRE LTD.  
scale: 1:500/1:250  
dwg. no.: 023045-300  
file ref: 023045-300



**GROUND FLOOR PLAN**

SCALE 1:100

Project: PROPOSED RECYCLING FACILITY AT BLAKES CROSS, LUSK, CO. DUBLIN.  
 Drawing Title: FLOOR PLAN OF MAIN WAREHOUSE

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Rev.	Date	Description	Issued For	By	Checked
F	07/04/08	FLOOR DUCTS ALTERED		RL DU	RL DU
E	15/06/03	WIPES MOVED		RL DU	RL DU
D	13/06/03	WIPES MOVED		RL DU	RL DU
C	27/04/03	RECESSED AND UPHELD		RL DU	RL DU
B	14/03/03	ENTRY/EXIT DOOR MOVED		RL DU	RL DU
A	03/10/02	GENERAL REVISIONS		RL DU	RL DU
Rev.	Date	Description	Issued For	By	Checked
Client	08/07/02	ISSUED FOR INFORMATION		RL DU	RL DU

Scale: 1:100  
 Date: 02/30/04-500  
 Client: ORENKLEMY WASTE MANAGEMENT LTD.  
 Project No: 023045-500  
 Scale: F

NOTES:  
 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS & ENGINEERS DRAWINGS & SPECIFICATION.  
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