



**ANNUAL ENVIRONMENTAL REPORT – 2008**

**GAIRDINI (TRADING AS MUNSTER JOINERY)  
LACKA CROSS, BALLYDESMOND, COUNTY CORK**

**IPPC LICENCE REFERENCE NO.: P0639-02**

**ORIGINAL**

**PREPARED BY:**

**KINGDOM ENVIRONMENTAL SERVICES**

**FOR**

**GAIRDINI,  
LACKA CROSS,  
LACKANASTOOKA,  
BALLYDESMOND,  
MALLOW,  
CO. CORK**

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**REVISION CONTROL TABLE**

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**Client:** Gairdini (training as Munster Joinery)

**Keywords:** IPPC Licence, Annual Environmental Report (AER), environmental monitoring

**Abstract:** Kingdom Environmental Services has prepared an Annual Environmental Report for Gairdini (trading as Munster Joinery) in compliance with IPPC licence Register number P0639-02- *Schedule D*.

The report covers the annual reporting period 2008.

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# 1. INTRODUCTION

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The Environmental Protection Agency issued Gairdini an Integrated Pollution Prevention Control Licence (Register No P0639-02) on 29 June 2007 for its facility located at Lacka Cross, Ballydesmond, Co. Cork. The licence was issued for the:

*“The use of coating materials in the processes with a capacity to use at least 10 tonnes per year of organic solvents not included in Class 12.2.1”*

This report addresses Condition 11.8 of the IPPC licence for the facility. This condition states that:

- *The licensee shall submit to the Agency, by the 31<sup>st</sup> March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in Schedule D: Annual Environmental Report of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.*

This report addresses the items listed in Schedule D – Annual Environmental Report Content, of the IPPC licence (P0639-02). This AER covers the reporting period from 1<sup>st</sup> January 2008 up to 31<sup>st</sup> December 2008.

This report has been prepared by Kingdom Environmental Services for Gairdini.

## 1.1 Site Description and Activities

The site is a large installation (circa. 54 acres in total) located approximately 3 km south of Ballydesmond, Mallow, Co. Cork along the R577 in the townland of Lackanastooka. On the western side of the site, the River Blackwater flows south, generally following the route of the R577. Building area comprises of approximately 15 acres of the site while an area of carpark, roadway and storage areas make up the remaining 39 acres.

The site is divided into three parcels of land separated by the north-south regional road R577 and the east-west county road. A timber storage compound and a carpark are found to the west of the R577 while factory buildings and offices are located to the east of the R577 and north of the county road.

To the south of the county road is the facilities wastewater treatment plant which has recently been upgraded. The remainder of the site consists of factory buildings, outfitters building, chemical store and a recycling area. There is nose to kerb car parking along the county road.

## 1.2 Activities

Munster Joinery was established in 1973 and is based at Lacka Cross, Lackanastooka, Ballydesmond, Mallow, Co. Cork. Through progressive growth, it is currently Ireland's largest and leading energy saving window and door manufacturer. A complete range of hardwood, softwood, uPVC, steel and aluminum doors and windows are manufactured at the Ballydesmond facility.

The activities carried out at each area are described in the subsections below.

### 1.2.1 Aluminum Windows and Doors Process Area

Aluminum frame enclosing glass panels are used to manufacture aluminum windows and doors. Following the delivery of aluminum profiles to the site, they are cut to the required lengths and using mechanical connections they are formed into aluminum doors and window frames.

Once the frames are completed, the prefabricated glass panels from the Glass Panel Manufacturing Department are installed along with any required fittings. The completed windows and doors are then sent to the dispatch department where they will be shipped to the site.

### 1.2.2 Glass Process Area

Large sheets of clear glass are delivered to the site for the manufacture of window and door panels. Some glass sheets are then toughened by a process of exposing it to a very high temperature. The glass is processed into single glazed panels, double glazed panels and decorated with Qualage (an imitation lead decoration).

The double glazed glass panels (both clear and decorated), are mounted on aluminium frames and are filled with Argon gas. The panels are then ready for installation.

### 1.2.3 Hardwood –Teak Windows and Doors Process Area

Hardwood frames and glass panels are used to manufacture hardwood windows and doors. Once delivered to the site, the hardwood ingots are stored in the timber storage yards. When required the timber is collected and stacked prior to the drying process. In order to remove the internal moisture in the timber, the timber is placed in kilns for a period of approximately one month. Following the drying process, the timber is cut and formed into the required lengths for the windows and doors. The cut and formed timber is then assembled into the window frames, doorframes and door panels. A teak-stain spray booth is used to give the frames and panels their required colour. Once the frames are completed, the prefabricated glass panels from the Glass Panel Manufacturing Department are installed with any required fittings. The completed windows and doors are then sent to the dispatch department where they will be shipped to the offsite to the construction site.

### 1.2.4 Plastic Doors Process Area

Plastic doors are manufactured from a foam sheet between two plastic door panels using an aluminium or u.P.V.C. frame as a support. Once delivered to the site, the foam sheets are sprayed with adhesive and then glued between two plastic door panels. A certain number of doors then have panels removed to allow for the installation of glass windows. The doors are then fitted into aluminium or u.P.V.C. frames and the glass panels from the Glass Panel Manufacturing Department are installed along with any required fittings. The completed doors are then sent to the dispatch department for shipment offsite to the construction site.

### 1.2.5 u.P.V.C. Windows and Doors Process Area

u.P.V.C. windows and doors are manufactured by enclosing glass panels in a u.P.V.C. frame. The u.P.V.C. profiles are either manufactured on-site or delivered directly to the site. In order to manufacture u.P.V.C. profiles on-site, a u.P.V.C. powder must be heated and then extruded into the required profile. This process is carried out in the Extrusion Building.

Both the purchased and manufactured profiles are then formed into window and doorframes in the Frame Manufacturing Building. The profiles are altered to the required lengths and using mechanical connectors, they are assembled to form the u.PVC door and window frames.

The frames are then fitted with the prefabricated glass panels from the Glass Panel Manufacturing Department along with any required fittings. The completed u.P.V.C. windows and doors are then sent to the dispatch department for shipment offsite to the construction site.

### 1.2.6 Softwood –Pine Windows and Doors Process Area

Softwood frames and glass panels are used to manufacture softwood windows and doors. Once delivered to the site, the softwood ingots are stored in the timber storage shed. When required, the timber is cut and formed into the required length and shape for the windows and doors.

The cut and formed timber is then assembled into window frames, doorframes and door panels.

They are then transferred to the softwood processing plant for treatment. The treatment process is a Protim 418V Prevac system. It is a three component system composing of a treatment vessel, an operational storage vessel (OSV), and a bulk storage vessel (BSV) where preservative deliveries are discharged. The BSV is used to top up the OSV prior to each treatment. The wood is placed into treatment vessels where it is impregnated with a wood preservative -Protim 418V.

It is then stacked in a dryer for approximately 48 hrs to remove any internal moisture. Once the treatment process is complete the prefabricated glass panels from the Glass Panel Manufacturing Department are installed with the required fittings. The completed windows and doors are then sent to the dispatch department for shipment offsite to the construction site.

### 1.2.7 Steel Doors Process Area

Steel door sheets are cut to the required length and formed into the required shape for door panels. The door panels are then attached to wooden frames and foam is injected into the frame. A certain number of doors then have panels removed to allow for the installation of glass panels. The glass panels from the Glass Panel Manufacturing Department are then installed and any required fittings are made. The completed doors are then sent to the dispatch department where they will be shipped offsite to the construction site.

### 1.2.8 Wastewater Treatment Process Area

The newly upgraded wastewater treatment plant carries out tertiary treatment of the effluent prior to discharge to the river. It consists of two balancing/holding tanks. Waste water from the facility is pumped into these tanks. The wastewater goes from the balancing tanks to two aerator tanks. These aerator tanks are designed as a rotor, equipped with pipes. A microorganism film develops on these pipes. These pipes are open in a section and therefore as they rotate around they collect waste water as well as air when it emerges from the water. During the downward rotation of the pipes back into the water, the air is trapped and forced into the microorganism film and supplies the microorganisms with oxygen. This rotation also allows for the complete mixing of the aerator tank.

The waste water goes from the aerator tanks to the clarifier tank where heavier particles settle out and final treated effluent flows over the weir. The heavier particles which contain a high number of microorganisms are taken from the bottom of the clarifier to the sludge holding tank. Some of this sludge is sent back to the aerator tank to ensure maximum number of microorganisms and the rest of the sludge is taken offsite by a specialised waste contractor.

### 1.2.9 Combined Heat and Power Plant Process

The CHP consists of a furnace, steam boiler and electrical plant, control and store rooms. A steam turbine, electrical generator, and ancillary infrastructure is currently being installed in the facility.

When sawdust and woodchips are produced onsite they are extracted and deposited in two concrete bunkers behind the CHP. The sawdust is stored here prior to being used to fuel the grate furnace. The furnace has an automatic fuel feed regulator and a stepwise air supply. This generates steam in the boiler which has a maximum output of 12 MW.

This steam first passes through a pre-heating chamber, followed by an economiser and lastly, a



steam super heater. The resultant steam is used to heat the site. After the installation of the steam turbine, any surplus steam will be used to generate electricity. This reduces Munster Joinery's overall dependency on the National Grid for electricity. The expected output from the steam turbine is a maximum of 3 MW.

Combustion gases that are produced and emitted from the boiler, pass via a multi-cyclone and an electrostatic precipitator, prior to the discharge to the atmosphere. Bottom Ash from this system is collected and is used on land as fertiliser.

#### 1.2.10 Ancillary Infrastructure

In addition, there are offices, welfare facilities etc. located at the site which include:

- Administration offices
- Car parking areas
- Timber storage areas
- ESB and Munster Joinery sub station and generator compound
- Dispatch building
- Raw material storage and paint storage buildings
- Recycling building
- Water treatment buildings
- Water storage and fire water storage tanks
- Diesel fill tanks for trucks and forklifts

## 1.3 Environmental Management

### Key Personnel Qualifications

The relevant qualifications of the key personnel involved in the environmental management of the facility are outlined below.

<b>Name &amp; Title</b>	<b>Qualifications/Experience</b>
Mr. Brendan Scollard <i>Production and Installation Manager</i>	Mr. Brendan Scollard has thirty years experience in the wood processing industry. He is experienced in the co-ordination and management of development, production and installation activities at Munster Joinery.
Mr. Tim O’Leary <i>Environmental Management Representative</i>	Mr. Tim O’Leary has twenty-five years experience in the wood processing industry and is experienced in the management of process areas within Munster Joinery.
Ms. Fiona O’Sullivan <i>Kingdom Environmental Services</i>  <i>Deputy Environmental Management Representative</i>	Ms. Fiona O’Sullivan has a BSc. in Environmental Science and a Diploma in Analytical Science. She has two and a half years experience in working in the environmental sector.  She is also Safepass and Manual Handling accredited and has a Certificate in Health & Safety.

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## 2. ENVIRONMENTAL MONITORING

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The IPPC Licence sets out the limits on emissions to air, water and noise from the installation. It sets out the conditions under which Gairdini will operate and manage its facility. A summary of the monitoring carried out, the frequency and the emission limit values are outlined below. All monitoring is conducted by suitably qualified personnel or appointed consultants.

### 2.1 Emissions to Surface Water

Surface water monitoring is carried out at four locations (SW1 to SW4) as shown on Drawing No. 558/M/2500/04 "Emission Points" (see Appendix 1). SW4 was found to be dry during each sampling inspection.

**Table 1**      *Emissions to Surface Water 1*

Parameter	Limit Value	Average SW 1 (WWTP)- Outlet	Annual Emissions at SW1
Units	mg/l	mg/l	kg/year
COD		38.51	0
BOD	20	5.5	0
Suspended Solids	20	13.05	0
Ammonia (as N)	3	2.64	9.26E-005
Total Phosphorus	2	1.69	4.83E-005
Total Dissolved Solids		251.55	0.01

**Table 2**      *Emissions to Surface Water 2 & 3*

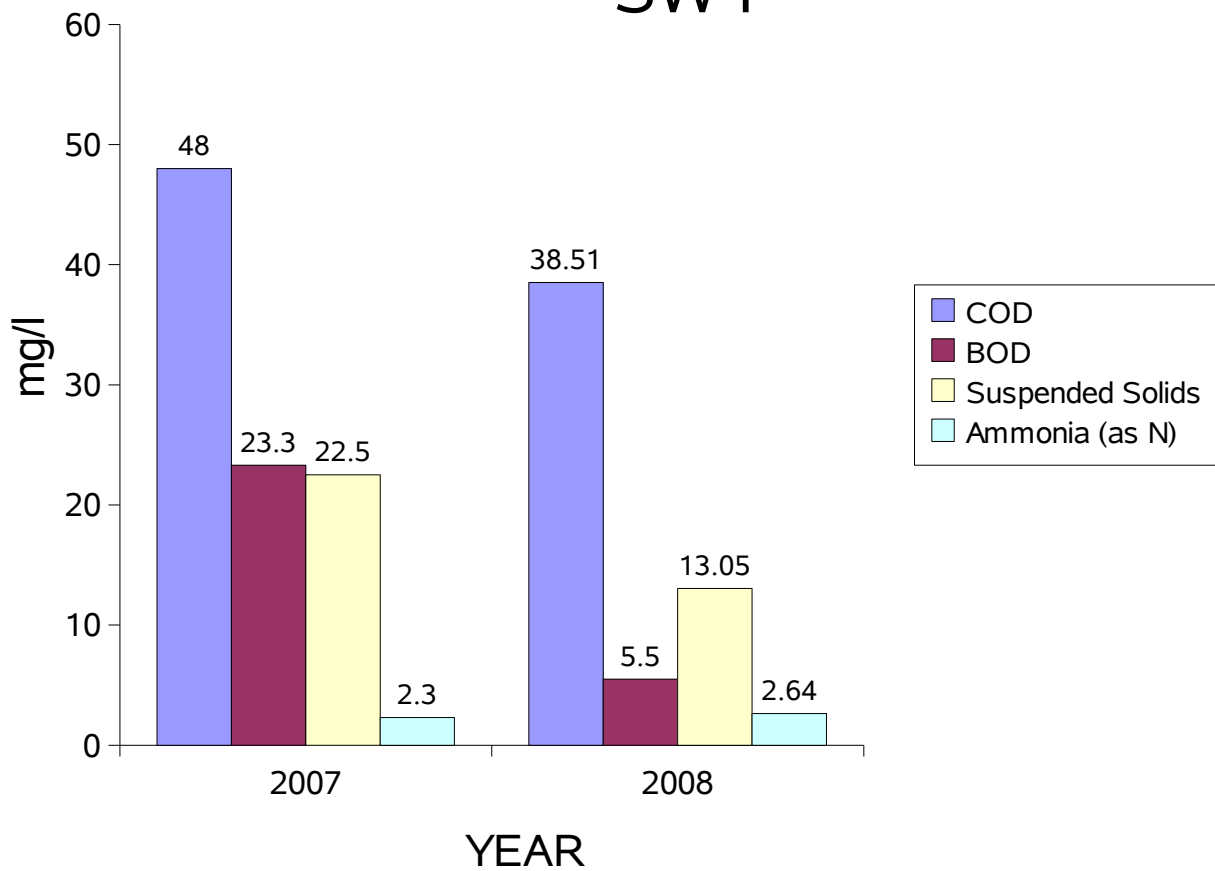
Parameter	Average SW 2- Outlet	Average SW 3- Outlet	Units
pH	7.4	7.7	pH units
Temp	N/A	15.1	(°C)
Suspended Solids	N/A	48.5	mg/l

### Interpretation of Results

The surface water results have been compared to limits as outlined in the IPPC Licence Register number P0639-02. These results relate to the sampling period from the start of January 2008 to the end of December 2008. This emission data is based upon the averaged daily and weekly analysis of SW1, SW2 and SW3. The average flow was also utilised for calculations on SW1

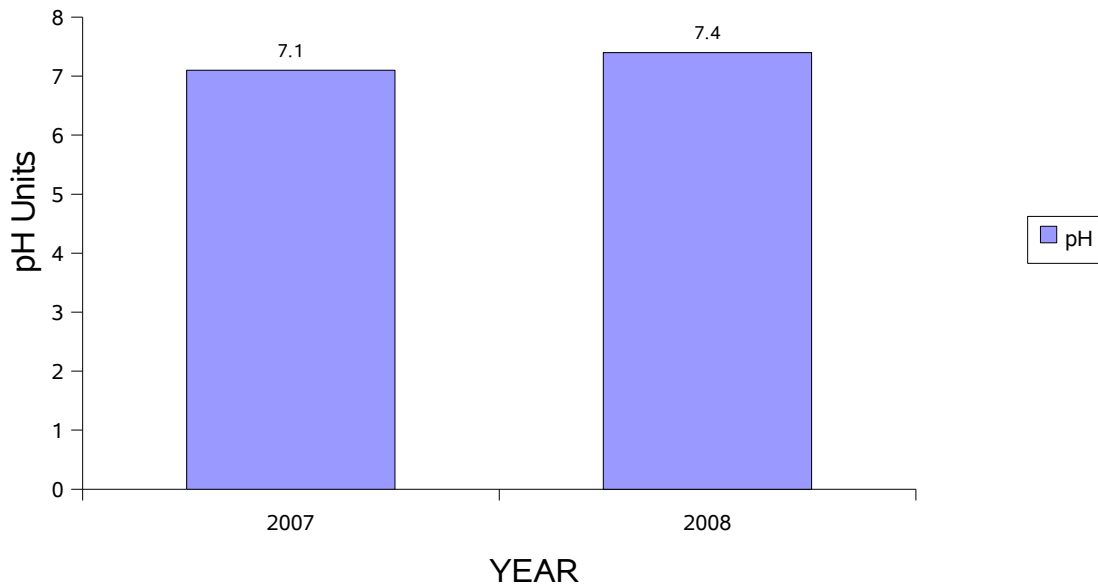
A summary of the obtained results for SW1 and SW2 & SW3 are presented in the following graphs.

# ANALYTICAL RESULTS SW1

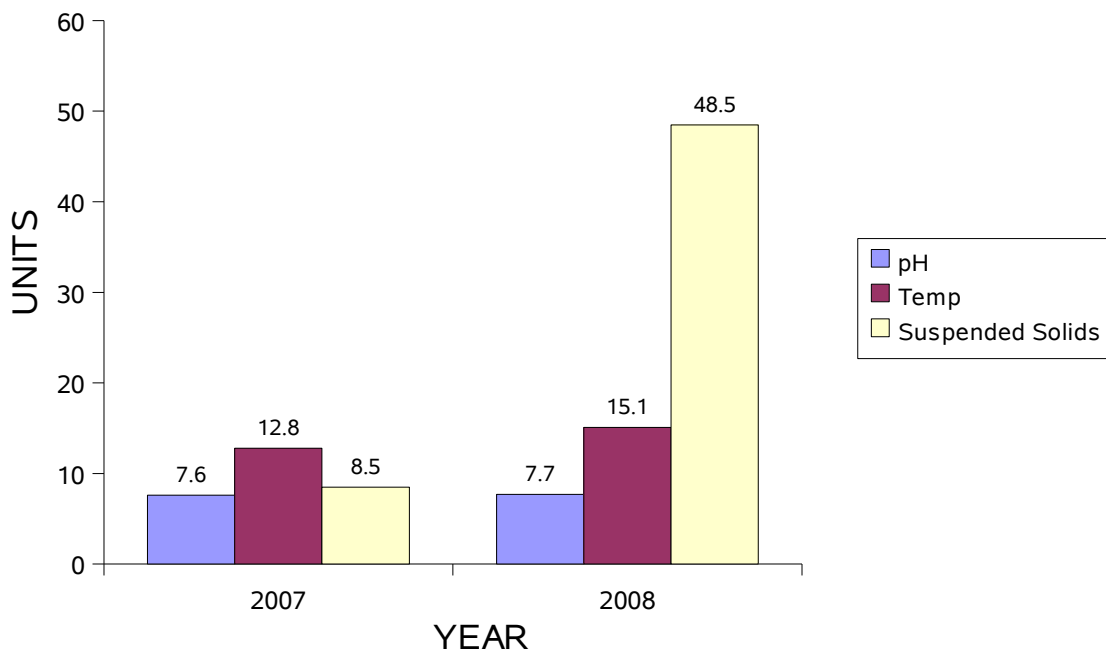


The recorded results for SW1 as shown in the graph indicate not only a great reduction in the results from the previous year but they are also in compliance with the water emission limit values, set out by the EPA in the IIPC Licence.

## ANALYTICAL RESULTS SW2 pH



## ANALYTICAL RESULTS SW3



The above graphs represents the obtained results for SW2 and SW3. A comparison is made between the two sampling years being 2007 and 2008.

It is noted that the results for suspended solids in SW3, as obtained from the averaged analysis of 2008 is higher than the results recorded in the monitoring period of 2007, this is believed to be due to climatic conditions.

## 2.2 Emissions to Atmosphere

As set out in the IPPC Licence Register number P0639-02 air monitoring is carried out at emission point A1-1. A1-1 is located at the combined heat and power plant, as shown on Drawing No. 558/M/2500/04 "Emission Points" (see Appendix 1). The monitoring results for 2008 are outlined in the table below. For a copy of the laboratory results see Appendix 2.

**Table 3 Emissions to Atmosphere**

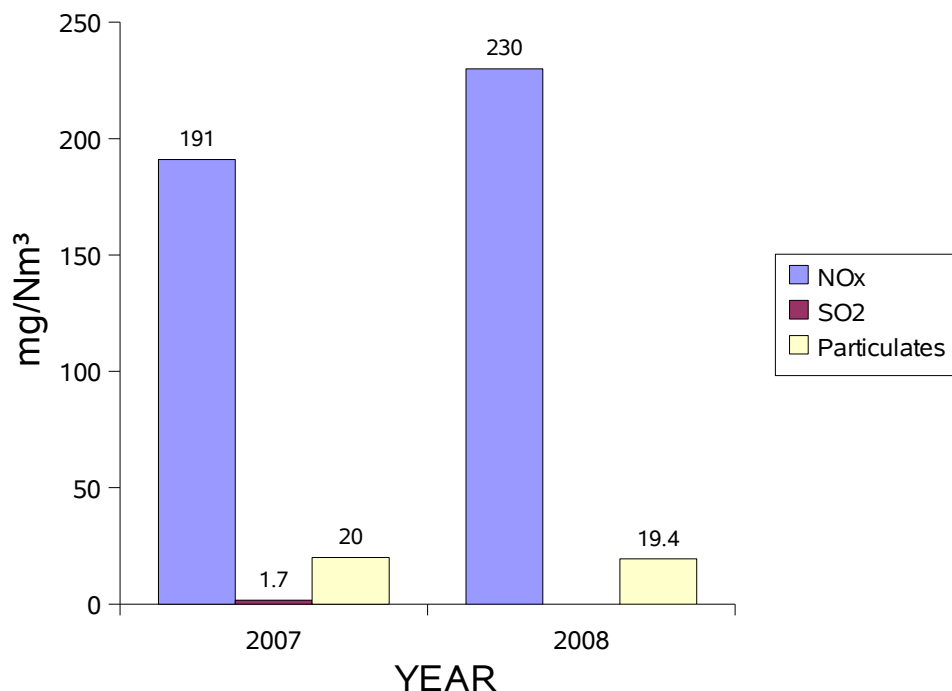
Parameter	Average Emission Concentration (mgN/m <sup>3</sup> )	Mass Emission Rate (Kg N/hr)	Mass Emission Rate (Kg N/yr)	Limit
NO <sub>x</sub>	230	3.54	31,010	250 mg/m <sup>3</sup>
SO <sub>2</sub>	<5	<0.08	<674.74	-
Particulates	19.4	0.30	2,628	20 mg/m <sup>3</sup>
Smoke	<1	<0.015	<134.94	-

### Interpretation of Results

The table of results provides information pertaining to the annual emissions to the atmosphere from the facility. The emission data is based upon the averaged monitoring data available for the facility. As noted from the results all licensed parameters detected are within the limits.

A comparison was made with last years monitoring period as displayed in the following graph.

### AIR MONITORING



## 2.3 Noise Emissions

Under condition 6.13 of the IPPC Licence Register number P0639-02 noise monitoring is carried out on annual basis, at 5 sensitive locations as shown on the Noise Monitoring Location Map (see Appendix 1).

**Table 4** *Noise Monitoring Data (A-Weighted)*

Period	Location	Start Time	Finish Time	$L_{Aeq}$	$L_{AF10}$	$L_{AF90}$	Wind Speed (m/s)
				dB(A)	dB(A)	dB(A)	Average
Day Time	N1	11:42	12:13	<b>62</b>	56	44	1
	N2	13:43	14:13	55	56	52	2
	N3	16:51	17:24	51	52	49	0.5
	N4	14:19	14:49	54	54	52	0.2
	N5	15:13	15:43	43	46	38	0.2
Night Time	N1	22:49	23:19	<b>48</b>	42	39	0.2
	N2	01:19	01:53	35	37	33	0.2
	N3	22:04	22:37	40	40	32	0.2
	N4	00:37	01:09	42	40	36	0.6
	N5	23:49	00:20	34	32	29	0.2

### Interpretation of Results

Results from noise sensitive locations N2, N3, N4 and N5 show compliance with the daytime and the night time noise emission limit of 55 dB(A)  $L_{Aeq}$  (30 minutes) and 45 dB(A)  $L_{Aeq}$  (30 minutes) respectively.

At the noise sensitive locations N1, noise levels were above the daytime and night time noise emission limits. Elevated levels during both the daytime and night time was due to vehicular noise as the noise sensitive location is situated on the R577 regional road. Onsite noise sources were audible at this location however, the background noise level ( $L_{AF90}$ ) of 44 dB(A) during the day time and 39 dB(A) during the night time is more representative of the onsite noise sources at this location.

Low frequency tonal noise was detected to the east of the facility at N2 and to the west of the facility at N3 however, this tonal noise was not clearly audible by the human ear. As the tone was not clearly audible, the tones are not considered a nuisance level, in accordance with Schedule B of the IPPC Licence.

Overall, the noise levels at the noise sensitive locations are in compliance with the noise emission limits values set out by the Environmental Protection Agency in the IPPC Licence.

## 2.4 Waste Management

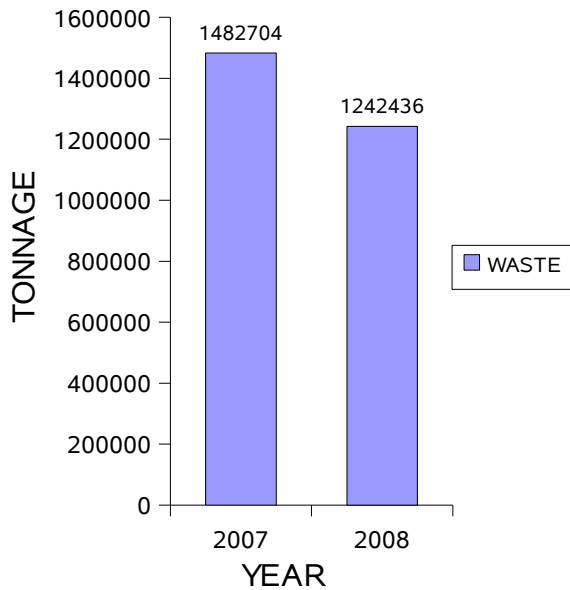
The waste management record for the facility is outlined in the following table.

**Table 5** *Waste Transfer Offsite 2008*

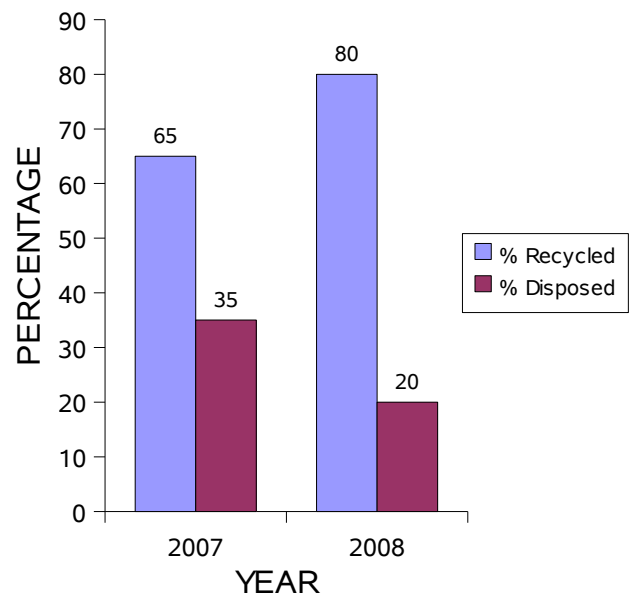
Waste Stream	EWC Code	Annual (Tonnage)	Recycled/ Disposed	Recovered / Disposal Codes
CARDBOARD	150101	138382.69	Recycled	R3
PAPER	200101	46525.98	Recycled	R3
PVC PROFILE	191204	625489.77	Recycled	R5
SWARF	191204	61493	Recycled	R5
PLASTIC WRAP	150102	45662.53	Recycled	R5
PP ROPE	150102	7579.36	Recycled	R5
GENERAL WASTE	200307	241763.9	Disposed	D1
METAL	200140	72007.28	Recycled	R4
WOOD CUTOFFS	03 01 05	960	Recycled	R1
ASH	10 01 01/10 01 03	83.64	Recycled	R10
SLUDGE	07 04 12	77.06	Disposed	D2
GLASS	16 01 20	1741.72	Recycled	R5
BONDEX	80111	5.21	Recycled	R3
WATER-BASED PAINT	80111	642.4	Disposed	D9
WHITE SPIRITS	80121	0.62	Disposed	D10
SEALANT	80409	8.36	Disposed	D10
HYDRAULIC OIL	130113	9.89	Disposed	D10
ADHESIVES	80409	2.26	Disposed	D10
THINNERS/PRIMER	200127	0.4	Recycled	R3
PROTIM	30205	2.45	Disposed	D10
DIESEL	130701	0.2	Disposed	D10
DESSICANT GRANULES	160303	0.3	Disposed	D10
CLEANING FLUID	160508	3.72	Disposed	D10
QUALAGE SCREEN WASH	160305	0.7	Disposed	D10
<b>Total</b>		<b>1242436</b>		
<b>% Recycled</b>		<b>80%</b>		
<b>% Disposed</b>		<b>20%</b>		



## TOTAL WASTE



## WASTE MANAGEMENT



The figures given above outline the trend in recovery of recyclables for the period January 2008 to December 2008.

Only 20% of the total amount of waste is disposed of off site. These figures are compared to the obtained figures in 2007. The above graphs indicate a 15% reduction in the amount of waste been disposed of off site

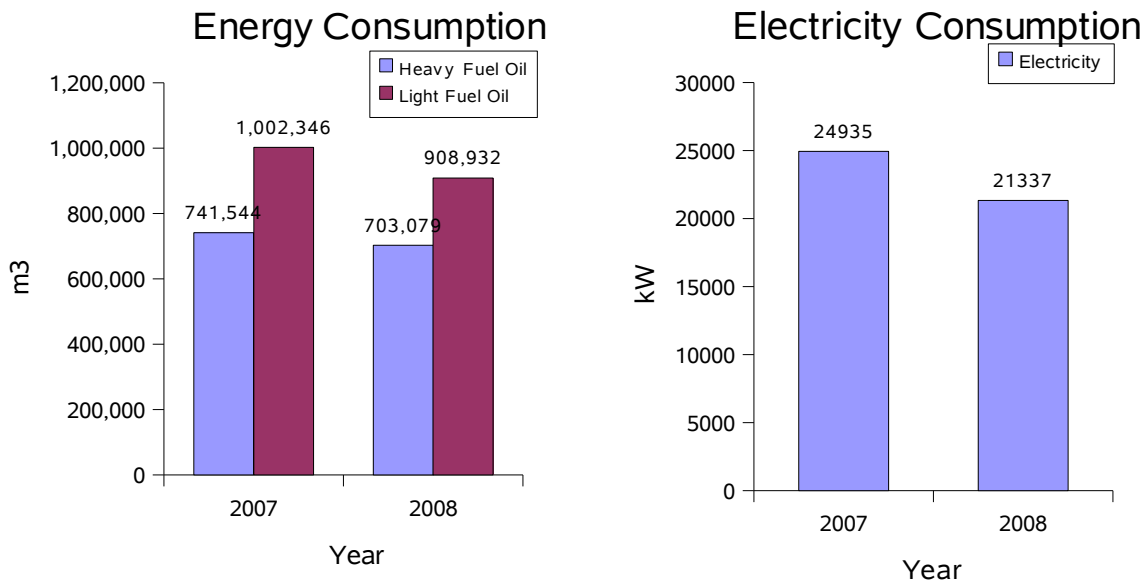
Names and addresses of waste recoverers and disposers are included in the electronic form submitted to the EPA.

## 2.5 Resource Consumption Summary

The following tables represents the figures of resource consumption for 2008:

**Table 6** *Energy Consumption 2008*

Energy Consumption	Units	Sulphur Content	2008 Total	2007 Total
Heavy Fuel Oil	m <sup>3</sup>	1000 ppm	703,079	741,544
Light Fuel Oil	m <sup>3</sup>	50 ppm	908,932	1,002,346
Natural gas	m <sup>3</sup>	-	N/A	N/A
Electricity	kW/hr	-		24935
Coal etc.	Kg	-	N/A	N/A



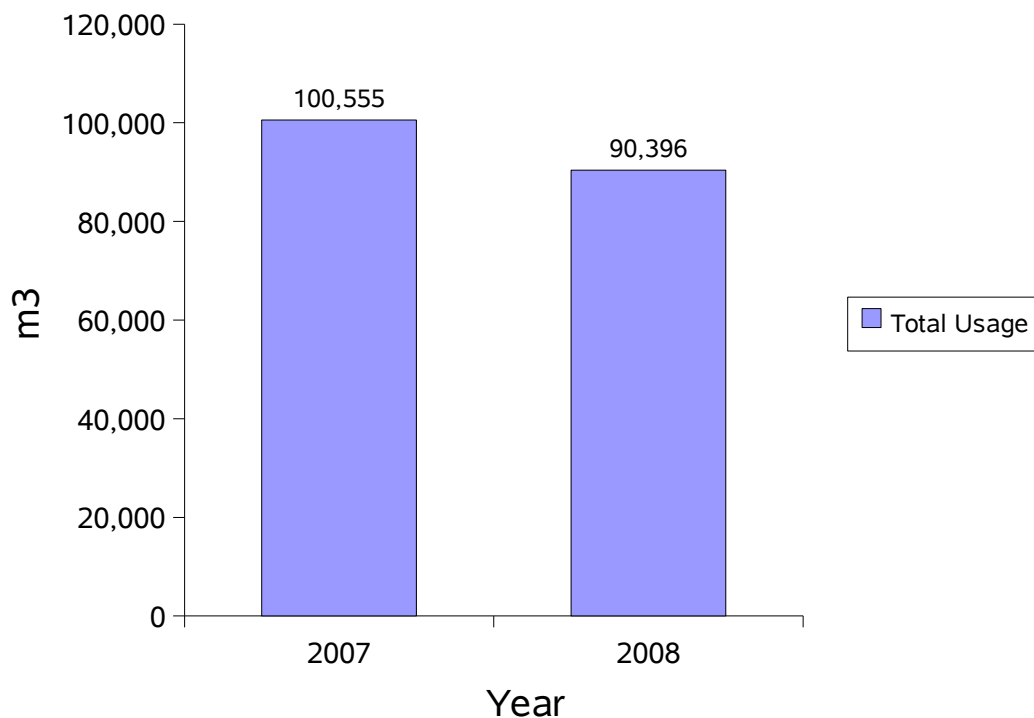
The facility has been very active in improving energy efficiency for some time. As portrayed by the table and graph the calculated figures for heavy and light fuel oil and electricity have improved in comparison to 2007 and this continues to be an ongoing progression.

**Table 7 Water Consumption 2008**

The amount of water usage in 2008 is portrayed in the following table and compared to the 2007 figures which is displayed in the graph.

Water Consumption	Units	2008 Total	2007 Total
On-site Groundwater use	m <sup>3</sup>	90396	100555
On-site surface water use	m <sup>3</sup>	N/A	N/A
Municipal Water	m <sup>3</sup>	N/A	N/A

### On-Site Groundwater usage



As observed from the above table and graph the water consumption for 2008 is reduced by 10% compared to the 2007 figure. This reduction is an on going progress as set out in the schedule of objectives and targets.

\* NOTE:

It is noted that a mistake was made in the calculation of the 2007 figure whilst preparing the 2007 AER. The total on-site groundwater usage for 2007 was recorded as 58410 m<sup>3</sup> instead of 100555 m<sup>3</sup>

## 2.6 Environmental Complaints and Incidents Summary

The Environmental Management Representative (EMR) ensures that all internal/external complaints regarding environmental practices is received and documented in a register which is located in the EMRs office.

Records of site incidents are also kept in file and located in the EMRS office.

Two complaints were received and six incidents occurred throughout 2008

### Complaints:

Compliant received on 5-02-2008 in relation to tidy up at boundary fence and repair hole in wall.

#### Remediation measures put in place

All waste materials belonging to Munster Joinery along the boundary ditch was removed. The down pipe from the roof was repaired and the discharge was diverted into surface drain. The two holes in the laminating and extrusion building were covered in order to ensure that they are not visually intrusive.

Compliant received on 3-10-2008 with reference to intermittent noise from the facility.

#### Remediation measures put in place

It was discovered that there were steel fabricators working on site at the time of compliant, they were doing this work to reduce the noise levels from the extrusion PVC building. To complete this work some cutting equipment and welders were used. We kept the time spent on the project to a minimum.

### Incidents :

Four incidents were discharge exceedences which occurred on the following dates:

- 23-04-08 elevated levels of ammonia
- 09-06-08 elevated levels of ammonia
- 08-07-08 elevated levels of ammonia
- 12-08-08 elevated levelsof ammonia

#### Actions taken

- External consultant was contracted to review the Waste Water Treatment Plant (WWTP) capabilities to achieve emission limit values.
- Discharges to the river were temporarily suspended.
- Sludge management was improved.
- Introduction of additional water to the WWTP as a temporary measure.
- Introduction of super bugs to the plant and plant modifications were completed.

### Incident

Occurred on 28-05-2008 in relation to pH meter malfunction.

### Actions taken

Response engineering were informed and came on site to resolve the problem.

### Incident

Occurred on 11-08-2008 a malfunction of the flow meter at the waste water plant occurred.

### Actions taken

- Response engineering were informed and came on site to resolve the problem.

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## **3. MANAGEMENT OF ACTIVITY**

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### **3.1 Introduction**

Under condition 2.2 an Environmental Management System (EMS) was established within six months of been granted the licence. This was forwarded to the agency in December 2007. The EMS includes the schedule of Objectives and Targets, Environmental Management Programme and Specific Procedure. This EMS will be maintained and completed in 2008. The EMS will be updated on annual basis.

### **3.2 Schedule of Environmental Objectives and Targets**

As required a schedule of objectives and targets was prepared. The schedule includes time frames for the achievement of set targets. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

**Table 8**      *Schedule of Objectives and Targets*

<b>Objective No.</b>	<b>Objective</b>	<b>Target</b>
1	Increase energy efficiency and reduce energy use at the facility. To become more self-sufficient and increase the security of supply to the facility.	To increase energy efficiency and reduce energy usage at the facility.
		To become more self-sufficient by producing 70% of the facilities energy requirement by 2009.
2	Monitor water usage and devise a strategy to reduce, recycle and reuse water onsite.	To reduce water usage at the facility.
3	Reduce the volume of waste produced in the facility and examine the feasibility of increasing the efficiency of use of the raw materials.	Reduce the amount of waste paint sludge produced from the facility by 90% by December 2009.
		Reduce the amount of waste sludge been sent off site by December 2009.
4	Carry out an assessment of the surface water management system.	Achieve compliance with emission limit values for pH and flow discharges from the waste water treatment plant (WWTP) in accordance with Condition 4.3 of the IPPC licence.
		Achieve compliance with emission limit values for all other parameters analysed for in the waste water treatment plant discharge in accordance with Condition 4.3 of the IPPC licence.
		Carry out an assessment of significant emissions to the surface water management system.
5	Research and evaluate the technical and economic feasibility of controlling the discharge of dichloromethane from the lamination process at the facility.	This assessment was completed in March 2008.
		The objective is been revised taking into considerations the findings.
6	Monitor levels of both point and fugitive emissions from the facility.	This assessment was completed and included in the solvent management plan. This objective is been revised in the light of the findings.
		Reduce the volume of fugitive emissions from surface cleaning substances.
7	Investigate any leaks in over ground pipes.	Detect and repair/ replace any defective pipe works.
8	Install a new computerised stock control system.	The aim of the computerised stock control system is to be used as a measure in identifying the facilities compliance with the use of organic solvents in certain activities and installations.
		Ensuring the specific solvent consumption threshold is been adhered to.

### **3.3 Environmental Management Programme (EMP) Report**

The purpose of the EMP is to ensure that the Environmental Objectives and Targets is supported by a realistic programme which is implemented throughout the organization. An EMP defines tasks to be undertaken to achieve the Objectives and Targets. It also identifies the timeframe for the tasks to be completed.

#### **3.3.1 Environmental Management Programme – 2008**

The environmental management programme for 2008 is outlined in Table 9.

#### **3.3.2 Environmental Management Programme – Proposal for 2009**

The environmental management programme proposed for 2009 is outlined in Table 10.



**Table 9 Environmental Management Programme 2008**

No.	Objective	Target	Tasks	Progress during 2008
1	Examine the environmental risk, technical and economic feasibility of providing a catchment system to collect any leaks from flanges and valves from over ground pipes other than water pipes.	The feasibility assessment will be completed by February 2008 and this objective will be revised in view of the findings.	Identify on a drawing all over ground pipes in the facility which carry material other than water. Identify flanges and valves on the pipes	Completed
			Carry out risk, technical and economical feasibility for collection system.	Completed
			Review target and tasks taking into account assessment findings.	Currently in progress
2	Increase energy efficiency and reduce energy use at the facility. To become more self-sufficient and increase the security of supply to the facility.	To increase energy efficiency and reduce energy usage at the facility.	Carry out Energy Efficiency Audit of the facility	Completed
			Review target and tasks taking into account the audit findings.	Completed
			Complete assessment of the Extrusion process of the replacement of current lighting system lamps with 75% more energy saving lamps.	Completed
			Roll out the replacement of the lighting lamps to all other processes.	Ongoing
			Details final design and cost for the completion of the compressed air ring main.	Completed
			Install the compressed air ring main in the facility to reduce compressed air leaks.	Currently in progress
		To become more self-sufficient by producing 70 % of the facilities energy requirement by 2009.	Commission and operate the CHP plant to full capacity.	Ongoing
			Install, commission and operate to full capacity the steam turbine in conjunction with the CHP plant.	Steam turbine installed awaiting for full commission
			Install, commission and operate the wind turbines (2) to full capacity.	Dependent on EPA approval

3	Monitor levels of both point and fugitive emissions from the facility.	This assessment will be completed by March 2008 and this objective will be revised in the light of the findings.	Carry out monitoring assessment of all fugitive emissions at the facility.	Completed
			Research suitable abatement measures/controls for significant fugitive emissions.	Currently in progress
			Install/implement the necessary abatement measures/controls.	Completion date following research being carried out.
4	Monitor water usage and devise a strategy to reduce, recycle and reuse water onsite.	To reduce water usage at the facility.	Monitor water usage at the facility	Continuous
			Identify areas/opportunities where water usage can be reduced/reused/recycled.	In commencement
			Following this identification, the tasks for the implementation of these initiatives will be reviewed.	Completion date following review being carried out.
5	Reduce the volume of waste produced in the facility and examine the feasibility of increasing the efficiency of use of the raw materials.	Reduce the amount of waste paint sludge produced from the facility by 90% by December 2009	Obtain planning permission for a water based paint treatment building	Granted
			Construct the treatment building and install the treatment process.	Completed
			Commission the treatment process to ensure correct operation and a 90% reduction in waste.	Dependent on EPA approval
			Identify areas/opportunities where paint raw material efficiency can be increased	Identified
			Following this identification, the tasks for the implementation of these initiatives will be reviewed.	Currently being reviewed
		Find a recycling/reuse market for the waste plastic blow-off from the PVC pelleting machine.	Completed	
6	Carry out an assessment of the surface water management system.	Install oil and silt trap interceptors for storm water discharges from the site by June 2008.	Identify locations for installation of the interceptors. Carry out an assessment to size each interceptor.	Completed
			Install interceptors	Completed
		Provide bunding for all tanks containers and drums holding	Identify all areas in the facility that needs containment bunding.	Completed

		material that has the ability to enter the surface water environment by February 2008.	Locate supplier of suitable spill, trays, decks, pallets and order supply	Completed
			Install containment bunds in the process areas.	Completed
			Design bunding for areas needing specific bunding.	Completed
			Construct the designed bunding in these specific areas	Completed
		Achieve compliance with emission limit values for pH and flow discharges from the waste water treatment plant (WWTP) in accordance with Condition 4.3 of the IPPC license.	Carry out performance tests and final commissioning of the WWTP.	Completed
			Maintain operational control of the WWTP to control pH and flow discharges.	Ongoing
		Carry out an assessment of significant emissions to the surface water management system.	Assess surface water emissions from the reverse osmosis, water treatment and extrusion area, to determine their significance.	Completed
Review target and tasks taking into account the assessment findings.	Currently in progress			
7	Research and evaluate the technical and economic feasibility of controlling the discharge of dichloromethane from the lamination process at the facility.	This assessment will be completed by February 2008 and this objective will be revised taking into consideration the findings.	Carry out technical and economical feasibility assessment for the control of dichloromethane in the lamination process.	Completed
			Review target and tasks taking into account the assessment findings.	Currently being reviewed
8	Phase out the use of Bondex in the paint system	Phase out the use of Bondex in the paint system by March 2008.	Phase out the use of Bondex in the paint system by March 2008.	Completed

**Table 10 Environmental Management Programme proposed for 2009**

No	Objective	Target	Tasks	Estimated Completion Date
1	Increase energy efficiency and reduce use at the facility. To become more self-sufficient and increase the security of supply to the facility.	To increase energy efficiency and reduce energy usage at the facility.	Rollout the replacement of the lighting lamps to all other processes.	December 2012
		To become more self-sufficient by producing 70% of the facilities energy requirement by 2009.		
2	Monitor water usage and devise a strategy to reduce recycle and reuse water on site.	To reduce water usage at the facility.	Monitor water usage at the facility.	Continuous
			Identify areas/ opportunities where water usage can be reduced/ reused/ recycled.	December 2009
			Following this identification the tasks for the implementation of these initiatives will be reviewed.	Completion date following review being carried out.
3	Reduce the volume of waste produced in the facility and examine the feasibility of increasing the efficiency of use of the raw materials.	Reduce the amount of waste paint sludge produced from the facility by 90% by December 2009.	Commission the treatment process to ensure correct operation and a 90% reduction in waste.	Dependent on EPA approval
			Following this identification (raw material efficiency) the tasks for the implementation of these initiatives will be reviewed.	September 2009
		Reduce the amount of waste sludge sent off site by December 2009.	Construct the centrifuge dewatering plant.	June 2009
			Commission the dewatering process to ensure correct operation and reduction in waste sludge.	August 2009
4	Carry out an assessment of the surface water management system.	Achieve compliance with the emission limit values for pH and flow discharges from the waste water treatment plant (WWTP). In accordance with condition 4.3 of the IPPC licence.	Maintain operation control of the WWTP to control pH and flow discharges.	Continuous

		Achieve compliance with emission limit values for all other parameters analysed in the waste water treatment plant discharge in accordance with condition 4.3 of IPPC licence.	Maintain operation control of the WWTP to control all other monitoring parameters.	Continuous
		Carry out an assessment of significant emissions to the surface water management system.	Assess surface water emissions.	Continuous
5	Research and evaluate the technical and economic feasibility of controlling the discharge of dichloromethane from the lamination process at the facility.	This assessment has been completed in February 2008 and this objective is being reviewed taking into consideration the findings.	Review targets and tasks taking into account the technical and economical feasibility assessment findings.	Trials in progress completion date following review of trials being carried out.
6	Monitor levels of both point and fugitive emissions from the facility.	This assessment was completed by March 2008 and this objective is being revised in the light of the findings.	Research suitable abatement measures / controls for significant fugitive emissions.	April 2009
			Install/ implement the necessary abatement measures / controls.	Completion date following research being carried out.
7	Investigate any leaks in over ground pipes.	Following this investigation, the tasks for the implementation of these initiatives will be reviewed.	Detect and repair/ replace any defective pipe works.	August 2009
8	Install a new computerised stock control system.	The aim of the computerised stock control system is to be used as a measure of identifying the facilities compliance with the use of organic solvents.	Create a fresh database consisting of stock information.	March 2009

8		Allowing the purchasing department to see the same information of stores by displaying stock history.	Produce a site survey report. Configuration of software and installation of hardware devices.	May 2009
			Ensuring the specific solvent consumption is being reduced.	Ongoing

---

## 3.4 Pollutant Release and Transfer Register (PRTR)

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The E-PRTR Report outlines the releases so air, water and off- site transfers of wastes relevant to the Gairdini facility under the E-PRTR Regulations and ensures compliance with conditions 6.14 of Gairdini IPPC Licence. The report is based on environmental monitoring data collected in 2007 in compliance with IPPC Licence( Reference No: P0639-02).

See **Appendix 3** - European Pollution Release and Transfer Register.

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## **4. LICENCE SPECIFIC REPORTS**

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### **4.1 Energy Efficiency Audit Report Summary**

Condition 7.1 of the IPPC Licence states that a energy efficient audit of the facility should be undertaken within one year of the grant of the IPPC Licence. As the IPPC Licence was granted for Gairdini in June 2007, the energy efficient audit was completed and submitted to the Agency before June 2008.

### **4.2 Minimize Water Usage and Efficient use of Raw Materials**

Under Condition 7.3 and 7.4 of the IPPC Licence, opportunities for water reduction onsite should be identified and efficient use of raw materials should be examined. These assessments were incorporated into the Schedule of Objectives and Targets for 2008. As these assessments were not finalised they were included in the Schedule of Objectives and Targets for 2009 and these initiatives will be reported on, in the 2009 AER.

### **4.3 Environmental Liability Assessment**

Following discussions between Gairdini and our consultants Fehily Timoney & Co on the hydrogeological investigation report, the Environmental Liability Risk Assessment Report will be completed and thereafter the annual statement of Environmental Liabilities will be submitted to the agency.



## **4.4 Bund Testing and Inspection Report**

Under condition 6.9 of the IPPC Licence the licensee is required to carry out a bunding structure integrity test at least once every three years.

Fingleton White & Co. Ltd was retained to carry out the bund integrity testing in accordance with condition 6.9 of the IPPC Licence. The results of which were provided in last years AER.

## **4.5 Solvent Management Plan**

Under condition 6.16 of the IPPC licence, the licensee is required to maintain a Solvent Management Plan (SMP) for the site.

The substances to be included in the SMP shall be determined by reference to the definition of a solvent in Council Directive 1999/13/EC and shall be agreed by the Agency each year. The SMP shall be prepared in accordance with any relevant guidelines in Annex III of the Directive or as issued by the Agency and shall be submitted as part of the AER.

See **Appendix 5** for the Solvent Management Plan.

## APPENDIX 1

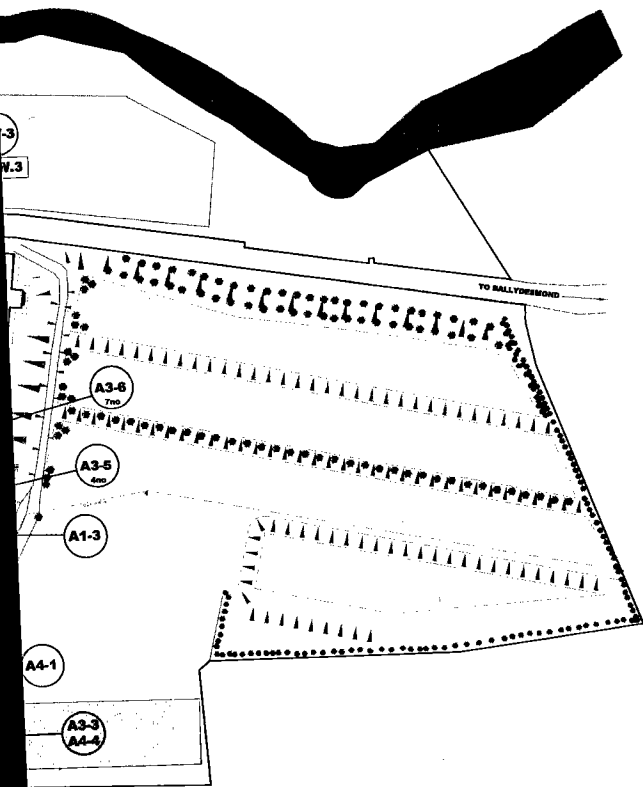
### Monitoring Location Maps



MAIN AND MINOR ATMOSPHERIC EMISSION POINTS:



EMISSION POINTS:	SAMPLE POINTS	EMISSION TYPE:	SOURCE:	CO-ORDINATES:
A1-1	AA1-1	Boiler Exhaust	CHP Boiler	E: 115773, N: 101146
A1-2		Boiler Exhaust	Vyncke Boiler	E: 115705, N: 101161
A1-3		Boiler Exhaust	Secondary Boiler	E: 115715, N: 101167
A1-4		Boiler Exhaust	Backup Boiler	E: 115654, N: 101039
A1-5		Boiler Exhaust	Standby Boiler	E: 115710, N: 101160
A1-6		Boiler Exhaust	Standby Boiler	E: 115720, N: 101161
A3-1		Generator Exhaust	Standby Diesel Generator	E: 115952, N: 100726
A3-2		Extraction Air	Vacum Filters on Sawdust Collection System	E: 115686, N: 101163
A3-3		Extraction Air	Vacum Filters on Sawdust Collection System	E: 115795, N: 101182
A3-4		Extraction Air	Vacum Filters on Sawdust Transfer System	E: 115650, N: 101044
A3-5		Extraction Air	Extraction Vents on Manual Spray Painting Booths	E: 115699, N: 101187
A3-6		Extraction Air	Extraction Vents on Auto Spray Painting Plant	E: 115684, N: 101167
A3-7		Extraction Air	Extraction Vents on Teak Spraying Booths	E: 115585, N: 100995
A3-8		Extraction Air	Extraction Vents on Teak Spraying Booths	E: 115654, N: 100975
A3-9		Water Vapour	Wood Drying Kilns Vents	E: 115660, N: 101109
A3-10		Water Vapour	Wood Drying Kilns Vents	E: 115696, N: 101125
A4-1		Steam / Water Vapour	CHP Boiler Safety Relief Vent	E: 115770, N: 101148
A4-2		LPG	LPG Storage Tank Safety Relief Vent	E: 115640, N: 100758
A4-3		Sawdust Particles	Vacum Filter Element Failure	E: 115686, N: 101163
A4-4		Sawdust Particles	Vacum Filter Element Failure	E: 115795, N: 101182
A4-5		Sawdust Particles	Vacum Filter Element Failure	E: 115650, N: 101044
A4-6		Sawdust Particles	Vacum Filter Element Failure	E: 115609, N: 100932
SW-1	ASW-1	Treated Waste Water	Waste Water Treatment Discharge	E: 115576, N: 100930
SW-2	ASW-2	Site Surface Water	Collected Site Surface Water	E: 115546, N: 101173
SW-3	ASW-3	Site Surface Water	Collected Site Surface Water	E: 115508, N: 100964
SW-4		Site Surface Water	Run-off Rain Water from Staff Car Park	E: 115508, N: 100964
SL-1		Treated Surface Water	Run-off Rain Water from Standby Generator Area	E: 115936, N: 100718



B	EMMISSION LOCATIONS UPDATED	HK	RQ	RK	26/02/07	26/02/07	26/02/07			
A	PRELIMINARY ISSUE	HK	RQ	RK	24/4/06	24/4/06	24/4/06			
ISSUE	REVISION	REV BY	A	B	C	D			ACAD	
<b>Fingleton White &amp; Co. Ltd</b> ENGINEERS & PROJECT MANAGERS Bridge Street Centre, Portlaoise, Co. Laois, Ireland.		<b>MUNSTER JOINERY</b> BALLYDESMOND, Co. CORK, IRELAND.								
PROJECT		APPROVALS								
MUNSTER JOINERY IPPC LICENCE		A	DRAWING OFFICE		D	CONSTRUCTION				
		B	DESIGN							
		C C & I								
TITLE		DATE:		DRAWN BY:						
EMISSION & MONITORING POINTS		26/02/07		HK						
		CHECKED:		ENGINEER:						
		RQ		ML						
SCALE		Drawing Number		Sheet		1				
1:2000/A2		558-M-2500-04		or		1				

## APPENDIX 2

### Air Emission Results



**Emissions To Atmosphere Report**

**October 2008**

**Gairdini**

**Lacka Cross, Lackanastooka, Ballydesmond, Mallow, Co Cork.**

**Licence Number: P0639-02  
Report Date: 14<sup>th</sup> October 2008**

**Report Number:  
3020-08-02  
Version 0**

**AXIS environmental services**  
40 Coolraine Heights, Old Cratloe Road, Limerick  
Phone: 061 324587 Mobile: 087 6367436  
Email: [info@axisenv.ie](mailto:info@axisenv.ie)

**Isokinetic Data for Boiler**

<b>Isokinetic sampling</b>					
Munster Joinery Boiler Emissions					
ET (hh:mm:ss)	Flow	q'Va	Volume Vgn	Volume Vdn	Deviation DI
00:15:00	24.674		0.1883	0	-0.24
00:15:00	27.965		0.2121	0	-1.82
<b>DUCT AND GAS SPECIFICATION</b>					
Circular section					
Diameter		m :	1.000		
Port		n° :	01		
Down stream		m :	1.80000		
Up stream		m :	7.50000		
Molecular weight		kg/kmol :	29.400		
Density		kg/m <sup>3</sup> :	1.312		
CO2		% :	5.500		
O2		% :	13.000		
Water vapor ratio	rw	:	0.119		
Ambient pressure		kPa :	98.24		
<b>SAMPLED VOLUMES</b>					
Dry at gas meter	Vg	m <sup>3</sup> :	0.4418		
Dry derived	Vdn	m <sup>3</sup> :	0.0000		
Dry std. condition	Vgn	m <sup>3</sup> :	0.4007		
Wet at measure plain	V'ga	m <sup>3</sup> :	0.7900		
Nozzle diameter		mm :	6.000		
Average flow	q'Va	l/min :	26.335		
Average flow	q'Vn	l/min :	13.357		
Average nozzle speed	v'N	m/s :	15.52		
Average duct speed	v'a	m/s :	15.69		
Total derived time	ETd	hh:mm:ss :	00:00:00		
Total elapsed time	ETt	hh:mm:ss :	00:30:00		
<b>ISOKINETIC CONDITION</b>					
ISO rate	v'N/v'a	:	0.99		
ISO deviation	DI	% :	-1.06		
<b>DUCT FLOW RATE</b>					
Moist actual	Q'Va	m <sup>3</sup> /h :	44339.9		
Moist standard	Q'Vn	m <sup>3</sup> /h :	22489.2		
Dry standard	QVn	m <sup>3</sup> /h :	15405. @ 11% O2		
<b>AVERAGE VALUES</b>					
Actual temperature	ta	°C :	241.63		
Gas meter temperature	tg	°C :	18.91		
Aux.1 temperature		°C :	300.00		
Aux.2 temperature		°C :	300.00		
Actual pressure		kPa :	96.830		
Press. diff. Pitot		Pa :	116.036		

## 1 Part 1: Executive Summary

### 1.1 Monitoring Objectives

Monitoring was carried out on a range of stacks at the installation as part of survey to determine the proportion of Total Organic Compounds emitted from stacks on site. In addition bi-annual monitoring was carried out on the main boiler.

TOC analysis was carried out by Flame Ionisation Detection over a 30 minute period. Flow rates, oxygen, temperature, pressure and moisture content of the emissions were determined at each point.

### 1.2 Special Monitoring Requirements

Communication was maintained with on site representatives to ensure all emission points were operating as normal during each monitoring period. Attention was paid to breaks, lunch and batch processes i.e. production dryers.

### 1.3 Summary of Methods

Substance	Standard Method	SOP
Total Organic Compounds	EN 13526	AXOP06
Flow Rates	EN 13284-1	AXOP01
Oxygen	ISO 12039	AXOP05
Moisture	EN 14790	AXOP16
Particulates	EN 13284-1	AXOP03



**1.7 Monitoring Results – A1-1**

This table presents atmospheric emissions from analysis undertaken on behalf of Gairdini. Gas was measured from sample positions downstream of any potential abatement systems.

Emission Point Reference: A1-1									
Substance to be Monitored	Emission Limit Value	Periodic Monitoring Result	Units Reference Conditions 273 K, 101.3 kPa 11% O <sub>2</sub> , Dry	Stack Flow Rate Nm <sup>3</sup> /Hr 273 K, 101.3 kPa 11% O <sub>2</sub> , Dry	Limit Nm <sup>3</sup> /Hr	Date of Sampling	Sampling Start/End Times	Method Reference	Operating Status
Particulates	20	19.4	mg/Nm <sup>3</sup>	15,405	27,020	07/10/2008	16:57 – 17:27	EN13284-1	Commissioning Status
NO <sub>x</sub>	250	230	mg/Nm <sup>3</sup>			07/10/2008	16:17-16:47	ISO12039	
SO <sub>2</sub>	-	<5	mg/Nm <sup>3</sup>			07/10/2008	16:17-16:47	BS6069	
Smoke	<1	<1	Ringlemann Shade			07/10/2008	16:17-16:47	Ringlemann Chart	
<b>Additional Information</b>									
See Appendix for Raw Data									

## APPENDIX 3

European Pollution Release and Transfer Register



**EUROPEAN POLLUTANT RELEASE  
& TRANSFER REGISTER**

**(E-PRTR)  
ORIGINAL**

<b>IPPC Licence Reg. No.</b>	<b>P0639-02</b>
--------------------------------------	-----------------

**Prepared for:**

Gairdini (trading as Munster Joinery)  
Lacka Cross  
Lackanastooka  
Ballydesmond  
Mallow  
Co. Cork

**Prepared by:**

Kingdom Environmental Services  
March 2009

**EUROPEAN POLLUTANT REALASE  
& TRANSFER REGISTER  
(E-PRTR)**

**FOR:  
GAIRDINI (TRADING AS MUNSTER JOINERY)**

**User is Responsible for Checking The Revision Status Of This Document**

<b>Rev. Mr.</b>	<b>Description of Changes</b>	<b>Prepared by:</b>	<b>Checked by:</b>	<b>Approved by:</b>	<b>Date:</b>
1	Issue to Client	Kingdom Environmental Services	FO'S	TO'L	March 2009

Client: Gairdini (trading as Munster Joinery)

Keywords European Pollutant Release and Transfer Register (E-PRTR),  
Mass Emissions, exceedence of thresholds.

Abstract Kingdom Environmental Services has prepared a European Pollutant Release and Transfer Register (E-PRTR), for the Gairdini (trading as Munster Joinery) facility at Lacka Cross, Lackanastooka, Ballydesmond, Mallow, Co. Cork. The report is based on data collected in 2008. The report was prepared to comply with condition 6.14 of the IPPC licence P0639-02.

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# 1. INTRODUCTION

---

Kingdom Environmental Services has prepared a European Pollutant Emission Register (EPER), on behalf of Gairdini (trading as Munster Joinery), for its facility at Lacka Cross, Lackanastooka, Ballydesmond, Mallow, Co. Cork. The report is based on environmental monitoring data collected in 2008 in compliance with IPPC Licence (reference No: P0639-02).

Munster Joinery was established in 1973 and through progressive growth, it is currently Ireland's largest and leading energy saving window and door manufacturer. A complete range of hardwood, softwood, uPVC, steel and aluminium doors and windows are manufactured at the Ballydesmond facility.

The site is a large installation (circa. 54 acres in total) located approximately 3 km south of Ballydesmond, Mallow, Co. Cork along the R577 in the townland of Lackanastooka. Figure 1 overleaf illustrates the location of the facility. On the western side of the site, the River Blackwater flows south, generally following the route of the R577. Building area comprises of approximately 15 acres of the site while an area of carpark, roadway and storage areas make up the remaining 39 acres.

Condition 6.14 of the IPPC Licence states that:

*“The licensee shall prepare and report a PRTR for the site. The substances and/or waste to be included in the PRTR shall be agreed by the Agency each year by reference to EC Regulation No.166/2006 concerning the establishment of the European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER”.*

As the 2007 PRTR was prepared in accordance with European Commission Guidance Document for the implementation of European PRTR, 31 May 2006, the same applies for the 2008 PRTR.

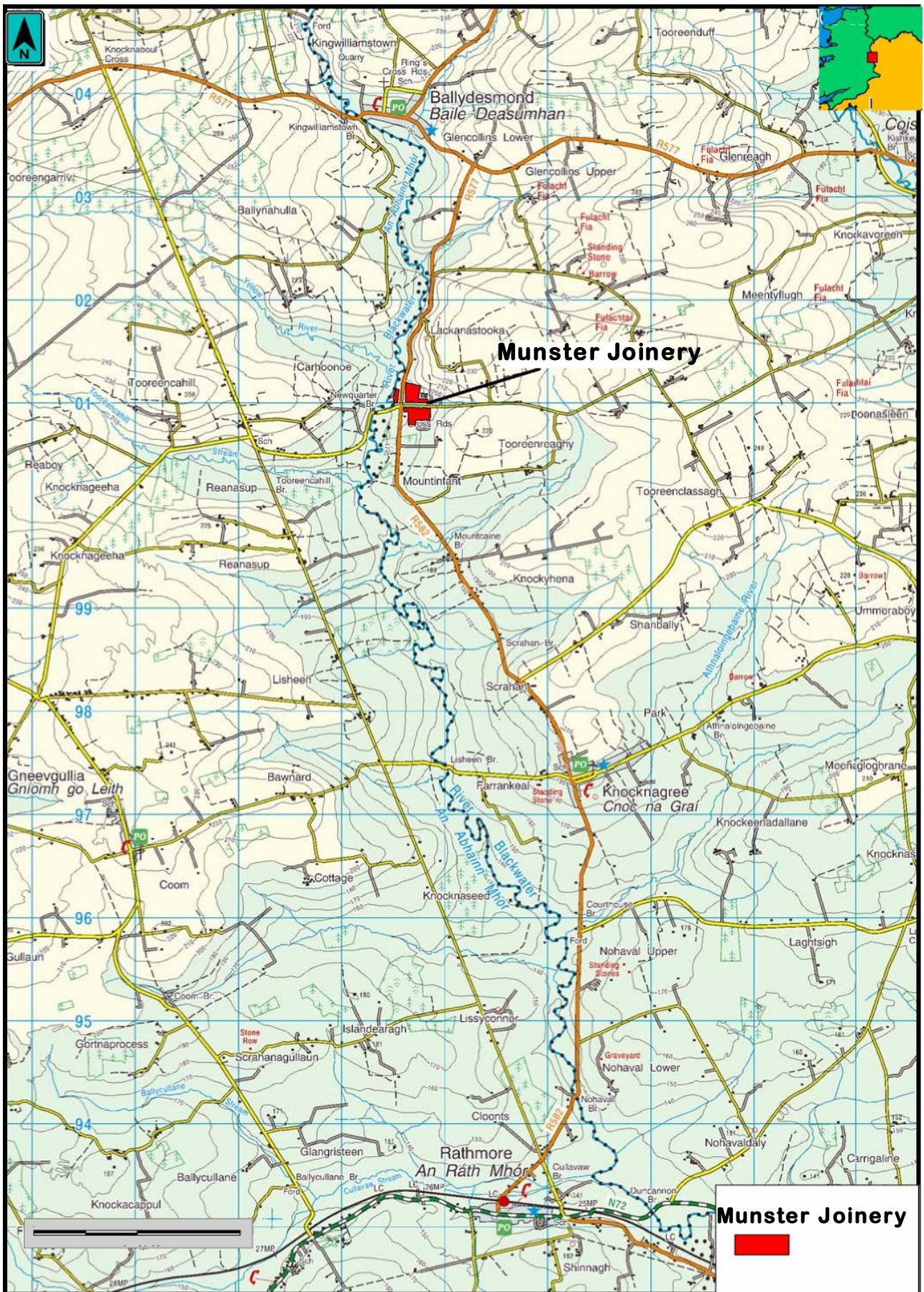


Figure 1



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## **2. EUROPEAN POLLUTANT EMISSION REGISTER (EPER)**

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The establishment of a European Pollution Release and Transfer Register (E-PRTR) is required under Regulation (EC) 166/2006 of the European Parliament. This Regulation amended Directives 91/689/EEC and 96/61/EC and was adopted in January 2006.

The E-PRTR succeeds the European Pollutant Emission Register (EPER) under which data was reported on for the years 2001 to 2004. The E-PRTR is a reporting system which aims to increase the availability of information to the general public on sources and amounts of emissions to air, water and land from European industry.

Operators of facilities that undertake one or more activities set out in Annex 1 of the EPRTR Regulations are obliged to report specific information where capacity thresholds set out in Annex II of the E-PRTR Regulation are exceeded. Specific information includes releases of pollutant to air, water, land and off-site transfers of waste as well as pollutants in wastewater.

Transfers of pollutants in wastewater off-site does not apply to this facility as all wastewater is treated onsite. Under the PRTR regulations, releases to land apply to disposal operations such as land treatment of oily sludge's and deep injection of saline solutions underground. Reporting of releases to land does not currently apply to Ireland.

This E-PRTR Report will report the specific information relevant to the Gairdini facility which is, releases to air, water and off-site transfer of wastes.

---

## 3. CLASSIFICATION OF ACTIVITIES

---

### 3.1. *IPPC Licence Activities*

The main activity carried out at the site, as outlined in IPPC licence P0639-02 is:

“the use of coating materials in processes with a capacity to use at least 10 tonnes per year of organic solvents not included in Class 12.2.1”.

### 3.2. *E-PRTR Regulation Activities*

Annex 1 of the E-PRTR Regulation lists 65 activities under which reporting obligations are necessary.

Gairdini (trading as Munster Joinery) qualifies as a facility under the E-PRTR regulations that undertakes the activity outlined below:

9 (c) Other activities

*Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating with a consumption capacity of 150 kg per hour or 200 tonnes per year.*

Gairdini has a Combined Heat and Power Plant onsite, the heat input to this facility is 13.8 MW. This plant is designed to produce 10.8 MW of heat and 1.1 MW of electricity. This heat input is under the threshold outlined for combustion installations in the EPRTR Regulations.

Gairdini also has a Wastewater Treatment Plant onsite with a maximum daily capacity of this plant is 170 m<sup>3</sup>. This capacity is under the threshold outlined for independently operated industrial wastewater treatment plants in the E-PRTR Regulations.

### 3.3. *National Classification of Economic Activities (NACE)*

The main activity carried out at the facility is window and door manufacturing. This has a NACE\* code of C Manufacturing 16.23: Manufacture of other builders' carpentry and joinery.

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\* The NACE nomenclature (National Classification of Economic Activities) is the European classification of economic activities. It is based on economic sectors and is composed of four digits (there is a fifth one for national use). The first two-digit codes indicate the divisions, the third-digit codes indicate the groups, and the fourth-digit codes indicate the classes.

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## 4. REALASES TO AIR, WATER, LAND AND OFF-SITE WASTE

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Annex II of the E-PRTR Regulation lists 91 pollutants that are selected for reporting as well as outlining thresholds for releases to air, water and land are outlined.

The release of pollutants to air, water and off-site transfers of waste are discussed with regards to the Gairdini facility.

### 4.1. Releases to Air

Gairdini has installed a Combined Heat and Power (CHP) Plant for the generation of heat and electricity onsite.

The CHP consists of a furnace, steam boiler and electrical plant, control and store rooms. A steam turbine, electrical generator, and ancillary infrastructure have been installed in the facility and are currently awaiting full commission.

Sawdust and wood-chippings that are produced onsite are extracted and deposited in two concrete bunkers and used as fuel for the CHP Plant.

This is the main atmospheric emission for the facility and monitoring parameters for this emission point have been identified in the IPPC licence, which are reported in Table 4.1. Smoke was recorded during the monitoring period and is also reported in Table 4.1.

**Table 4.1 Emissions from the CHP Plant**

Parameter	Average Emission Concentration (mgN/m <sup>3</sup> )	Mass Emission Rate (Kg N/hr)	Mass Emission Rate (Kg N/yr)	Threshold (kg/yr)	Exceedence of Threshold?
NO <sub>x</sub>	230	3.54	31,010	100,000	No
SO <sub>2</sub>	<5	<0.08	<674.74	150,000	No
Particulates	19.4	0.30	2,628	50,000	No
Smoke	<1	<0.015	<134.94	500,000	No

The threshold value for NO<sub>x</sub> emitted to air, as outlined in Annex II of the E-PRTR Regulation is 100,000 kg/year. During 2008, it is calculated that 31,010 kg of NO<sub>x</sub> was emitted to the atmosphere from the CHP Plant.

The threshold value for SO<sub>2</sub> emitted to air, as outlined in Annex II of the E-PRTR Regulation is 150,000 kg/year. During 2008, it is calculated that < 674.74 kg of SO<sub>2</sub> was emitted to the atmosphere from the CHP Plant.

The threshold value for particulates emitted to air, as outlined in Annex II of the EPRTR Regulation is 50,000 kg/year. During 2008, it is calculated that 2,628 kg of particulates was emitted to the atmosphere from the CHP Plant.

No atmospheric pollutants exceed the E-PRTR threshold values therefore releases to air do not have to be reported under the E-PRTR Regulation.

#### **4.2. Releases to Water**

Gairdini (trading as Munster Joinery) is in the South Western River Basin District. All surface water and effluent discharges from the facility are released into the River Blackwater.

The wastewater treatment plant carries out tertiary treatment of the facilities effluent prior to discharge to the river and is released to the river at SW1. This effluent is analysed for various parameters as required under the IPPC licence.

vThe annual mass of pollutants emitted to water was estimated by averaging the monitoring data for the facility. These results relate to the sampling period from the start of January 2008 to the end of December 2008. These values were compared to the threshold values given in Annex II of the PRTR Regulation.

**Table 4.2 Summary of Surface Water Emissions 2008**

<b>Parameter</b>	<b>Average SW 1-Outlet</b>	<b>Annual Emissions at SW1</b>	<b>Threshold</b>	<b>Exceedence of threshold?</b>
<b>Units</b>	<b>mg/l</b>	<b>kg/year</b>	<b>kg/year</b>	
COD	38.51	985.92	N/A	N/A
BOD	5.05	128.04	N/A	N/A
Suspended Solids	13.05	332.91	N/A	N/A
Ammonia (as N)	2.64	66.6	N/A	N/A
Total Phosphorus	1.69	41.0	5,000	NO
Total Dissolved Solids	251.55	6440.51	N/A	N/A

The threshold value for total phosphorous released to water, as outlined in Annex II of the E-PRTR Regulation is 5,000 kg/year. During 2008, it is calculated that 41.0kg of total phosphorous was released to the surface water from the wastewater treatment plant.

No surface water pollutants exceed the E-PRTR threshold values therefore releases to water do not have to be reported under the E-PRTR Regulation.

### 4.3. *Offsite Transfer of Wastes*

The threshold for the offsite transfer of waste is 2 tonnes per year of hazardous waste and 2,000 tonnes per year of non-hazardous waste.

**Table 4.3 Waste Transferred Offsite 2008**

<b>Waste Type</b>	<b>Within the Country (tonnes/year)</b>	<b>To Other Countries (tonnes/year)</b>	<b>Name of Recoverer/ Disposer</b>	<b>Address of Recoverer/ Disposer</b>	<b>Address of Recovery/ Disposal Site</b>
<b>Hazardous Waste</b>					
For Recovery	N/A	5.61	ATM	PO Box 30 NI-4780 AA Moerdijk The Netherlands	N/A
For Disposal	642.4		Enva (Shannon)	Smithstown Industrial Estate Shannon Co Clare	N/A
		28.5	AVG	Borsigstrasse 2, D-22113 Hamburg Germany	N/A
<b>Non-Hazardous</b>					
For Recovery	999918.57				
For Disposal	241840.96				

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## **5. PROPOSED E-PRTR FOR 2008**

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In accordance with Schedule D of the IPPC Licence, the Annual Environmental Report requires a Pollution Release and Transfer Register proposal for the current year.

In 2009, it is proposed to monitor for the same parameters identified under the IPPC Licence (Ref No: P0639-02) and that reported on during 2008.

### ***5.1. Releases to Air***

For 2009, proposed atmospheric emissions from the Combined Heat and Power plant are expected to remain similar to 2007 and 2008 results and therefore will remain below the threshold for reporting in 2009, under the E-PRTR Regulation.

### ***5.2. Releases to Water***

For 2009, proposed emissions to surface water for the waste water treatment plant are expected to remain similar to that of 2007 and 2008 results and therefore will remain below the threshold for reporting in 2009, under the E-PRTR Regulation.

A paint treatment plant has been installed but as of yet not fully commissioned at the facility, this is to reduce the amount of hazardous waste being sent offsite. The treated effluent from this plant will be either sent to the waste water treatment plant or undergo separate treatment and go to surface water. This has to be agreed with the Agency.

### ***5.3. Offsite Transfer of Wastes***

Waste streams will fluctuate from year to year, depending on the economic activity of the facility.

As previously mentioned, a paint treatment plant has been installed at the facility during 2008. Once this plant is fully commissioned it will reduce the amount of hazardous waste being sent offsite for disposal.

A new chipper plant has been installed at the facility. This will chip any wood off cuts from the process areas and the wood chip will then be used in the Combined Heat and Power Plant to generate energy. This will be fully commissioned in 2009 and this will decrease the amount of wood waste sent offsite in 2009.

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## **6. CONCLUSION**

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This E-PRTR Report outlines the releases to air, water and off-site transfer of wastes relevant to the Gairdini facility under the E-PRTR Regulations and ensures compliance with Condition 6.14 of Gairdini IPPC Licence. The report is based on environmental monitoring data collected in 2008 in compliance with IPPC Licence (reference No: P0639-02).

Under the E-PRTR Regulation, there are no releases to air and water that exceed the relevant threshold levels at Gairdini.

In relation to the offsite transfer of waste, Gairdini exceeds the threshold of 2 tonnes per year for hazardous waste and 2,000 tonnes per year for non-hazardous waste. The tonnes of waste transferred offsite is reported in this document.

An electronic version of the specific threshold exceedence data (included in Appendix A) will be uploaded to the EPA website and will be incorporated into the Annual Environmental Report for 2008.

## APPENDIX 4

### Solvent Management Plan



# Solvent Management Plan to follow