

# ANNUAL ENVIRONMENTAL REPORT 2010

Heineken Ireland  
Murphy Brewery  
Leitrim Street  
Cork

<b>Prepared by:</b>		<b>Approved by:</b>		<b>Authorised by:</b>	
Environmental Engineer: <i>Theresa Kiely</i>		Supply Chain Director: <i>Petra Hissink</i>		Managing Director: <i>David Forde</i>	
Date:	Signature:	Date:	Signature:	Date:	Signature:

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**Licence Registration No**

**P0445-01**

**Name: Heineken Ireland**

**Site Location: Murphy Brewery**

**Leitrim Street**

**Cork**

## 1.2 Production Process

### Production

The environmental effect of the brewery is directly related to the amount of beer produced. More production usually means more consumption of materials, more emissions, and more energy used to produce and transport finished product.

### Brewing Process

The finest raw materials are used to make Heineken, Murphy's Irish Stout (MIS), Coors Light and Amstel. The ingredients are malted barley, roasted barley, hops, yeast and water. The barley contains starch from which alcohol is eventually produced. The barley has to be malted before it is suitable for brewing. During the malting process, the enzymes, which convert starch to sugar, are activated.

The brewing process involves seven stages, with strict quality controls enforced at each stage of the process.

#### *Stage 1*

Pale malt and roasted barley are cleaned, weighed, milled and then mixed with hot water in the mash tun, a large mixing vessel. (Roasted barley is only used for the brewing of stout.)

#### *Stage 2*

This mixture is stirred, the conversion from starch to sugar is completed and the sugars are then extracted from the grains.

#### *Stage 3*

The resulting liquid – now called sweet wort – is then transferred to a boiling vessel called a copper. The spent grains remain in the mash tun and are used for animal feed.

#### *Stage 4*

Hops are added to the wort in the boiling copper to give it its typical taste and aroma. The brew is then transferred to a whirlpool where it is rotated at high speed. This results in the hop residues (called trub) in the brew setting in the middle. This trub is then used with the spent grains as animal feed.

#### *Stage 5*

The hopped wort is then cooled and pumped to the fermentation tanks where yeast is added. The yeast grows and ferments the sugars to alcohol, flavour components are developed and carbon dioxide produced. The carbon dioxide is recovered and reused in the process at a later stage.

#### *Stage 6*

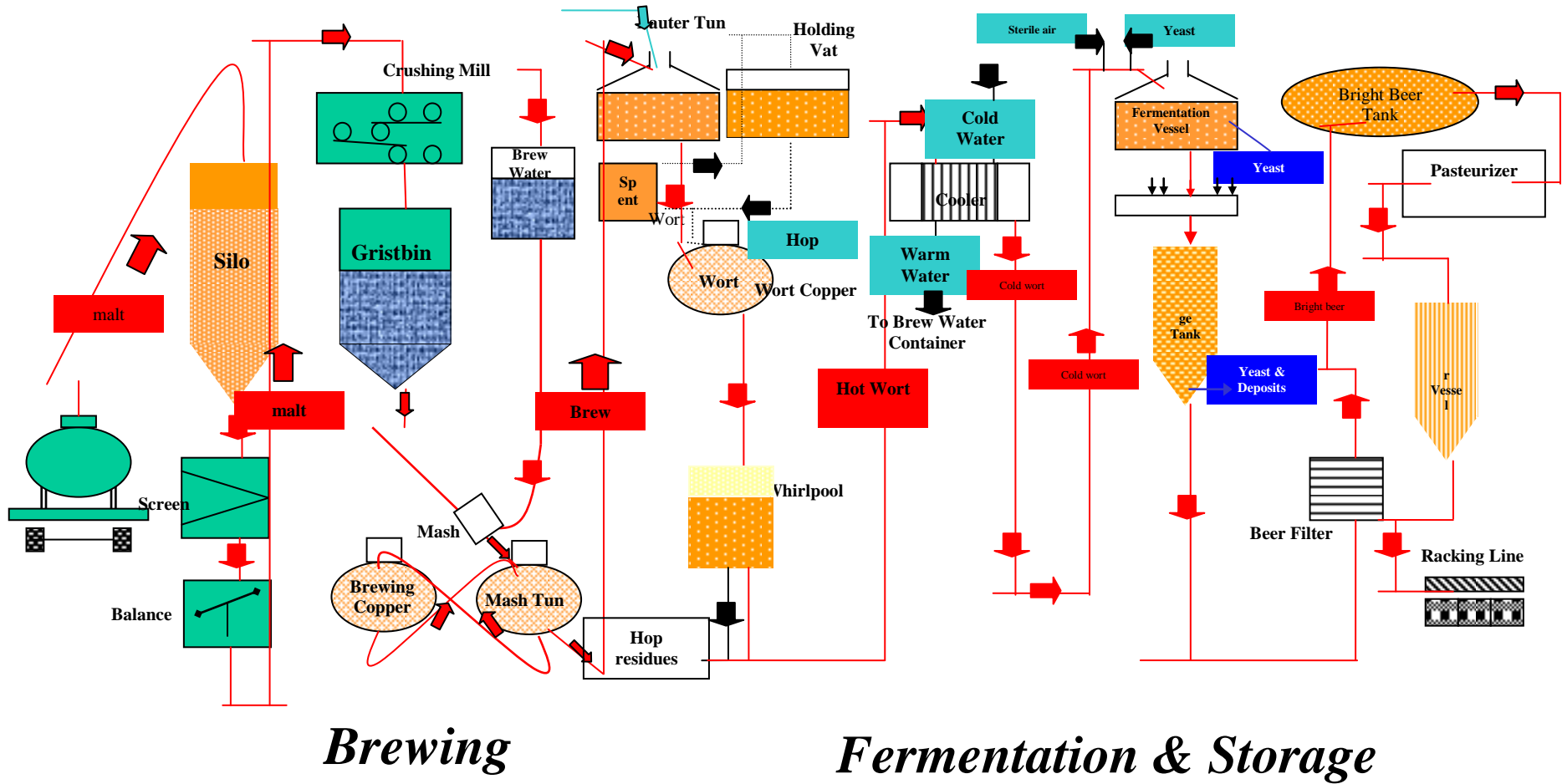
After fermentation is complete, the lager and stout are held in storage to allow the flavour to mature and develop. The yeast is removed and sent for recycling.

#### *Stage 7*

After maturation, either centrifugation or filtration removes any remaining yeast cells. The beer is adjusted to sales gravity. Thereafter the carbon dioxide and nitrogen levels are adjusted to desirable levels and the product is filled into kegs. After some final quality control checks, the product is ready for distribution.

## 1.2 Production Process

### Brewing Process



Theresa Kiely

## Heineken Ireland Environmental Policy Statement

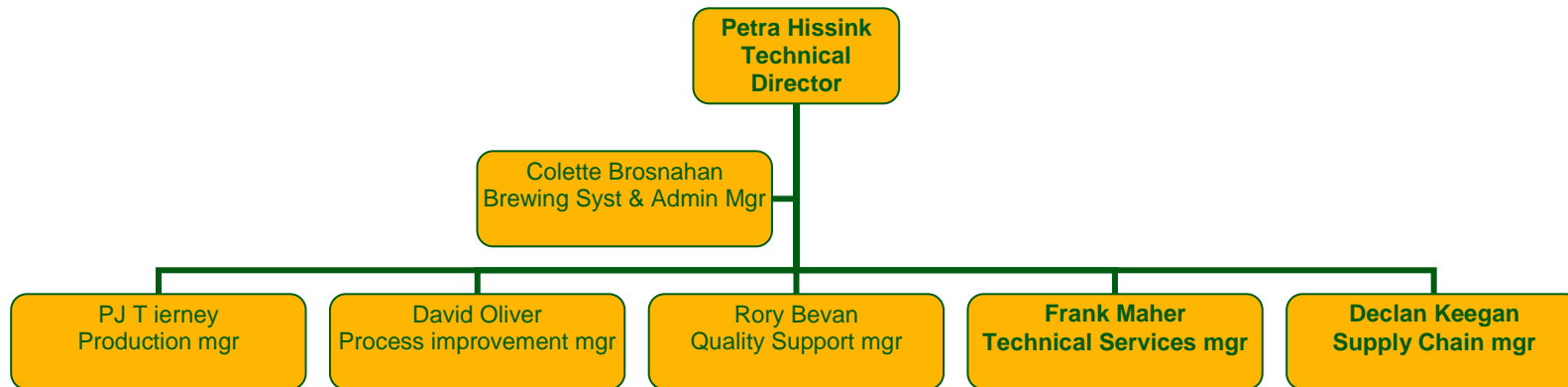
- **Heineken Ireland recognises its responsibility towards the environment and manifests this by committing itself to the following environmental Policy Statement and also to its environmental management system, I.S EN ISO:14001:2004. Heineken Ireland is committed to its Corporate Sustainability programme 2020**
- Environmental aspects are an integral element of our business.
- Relevant current legislation and all associated derived regulations regarding the Environment will be complied with and Heineken Ireland will comply with all conditions of the site's Integrated Pollution Prevention & Control License.
- Where such regulations do not (yet) exist, Heineken Ireland will take its own responsibility based on good corporate responsibility, and set its own standards accordingly. These standards will be appropriate to the nature, scale and impact of its activities and products.
- The manufacturing of our Products will take place with efficient use of the required materials, water, electricity and energy. Continual improvement will be pursued in our handling of environmental issues. These will be approached from a supply chain and engineering perspective, including purchased materials and services, our site operations, as well as distribution and the servicing of bar equipment. Continual attention will be paid to the avoidance and reduction of waste, nuisance and pollution.
- Implementation of the Company Environmental Policy Statement will further be ensured by assigning responsibilities at every management level and installing appropriate checking procedures. A key instrument will be the annual review of objectives and targets in the environmental elements of the operational plans of the Company. TPM will be one of the effective tools being used to help attain the objectives and targets.
- The results of our efforts related to the Company Environmental Policy Statement will be communicated to all employees and members of the Public.

**David Forde**  
Managing Director

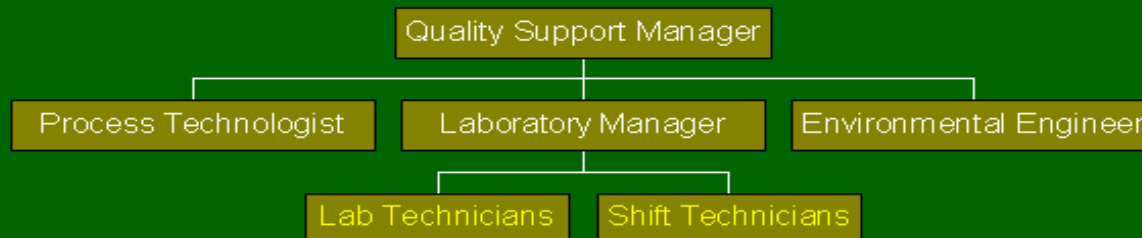
March 09<sup>th</sup> 2010



## 1.4 Company Organisation Chart for Environmental Management



# Quality Support Department



P.HR.02.01.06.02 Version 1 Issue date 22.04.02

## 2.0 Summary Information

### 2.1 Self – Monitoring Data

#### 2.1.1 Emissions to Sewer

Table 1: Summary table of Emission to sewer

Parameter	Mass Emissions (Kg) (2009)	Mass Emissions (Kg) (2010)	Licensed Mass Emissions
Volume (M3)	140253 (M3)	163986 (M3)	657000 (M3)
pH	100% compliant	100% compliant	6 – 10 pH units
BOD		1058521 (kg)	1095000 (kg)
COD	1646252 (kg)	808020 (kg)	2190000 (kg)
Phosphate (P)	1807 (kg)	3256 (kg)	10950 (kg)
Total N	3689 (kg)	7883 (kg)	54750 (kg)
Detergents (as MBAS)	21(kg)	15 (kg)	10 mg/l
Fats, oils, grease	1683(kg)	2656 (kg)	50 mg/l
Temperature	100% compliant	100% compliant	≥ 30° C
Toxicity	75% compliant	100% compliant	5 TU
Suspended Solids	501591(kg)	205225 (kg)	547500 (kg)

Table 2 Summary of non – compliance

Date	Non-compliance	Cause	Corrective Action
06/08/2010	Phosphorous exceeded ELV 37.4kgs/day v's 30 kgs/day	Not established	
17/09/2010	Suspended Solids exceeded ELV 5339.8 kgs/day v's 1500 kgs/day	Not established	

### 2.1.2 Ambient Surface Water Monitoring

	ASW1 – up stream		ASW2 – down stream	
	COD	pH	COD	pH
Feb	37	7.5	33	7.4
April	19	7.7	19	7.7
June				
Aug				
Oct	198	7.5	19	7.6
Dec	34	7.6	38	8.1

Visual inspection varied from opaque to clear, all samples contained a lot of suspended solids during 2010. Due to a diversion of the stream in 2004, the water in the stream now varies from being stagnant to some flow. In the warm weather the odour from this stream is not good. Samples are often difficult to retrieve because of the lack of flow.

### 2.1.3 Boiler Emissions to Air

Table 3: Summary of table of boiler emissions to atmosphere

Parameter	Mass Emissions (Kg) (2009)	Mass Emissions (Kg) (2010)	Licensed Mass Emissions (Kg)
Sulphur dioxide	N/A	N/A	N/A
Nitrogen oxide	1,195	1,166	N/A
Particulates	N/A	N/A	N/A
Carbon dioxide	2,649,064	2,620,943	N/A
VOC halogenated	N/A	N/A	N/A
VOC non-halogenated	N/A	N/A	N/A
Other (including Greenhouse Gases where appropriate)	N/A	N/A	N/A

Table 4: summary of non – compliance

Date	Non-compliance	Cause	Corrective Action
N/A	N/A	N/A	N/A

**2.1.4 Waste Arisings. Non-Hazardous Waste Sent for Recycling**  
Heineken Ireland is a member of Repak.

Segregation of on-site waste is an important factor in enabling recycling or reuse. Below is a list of wastes that are segregated on site and sent for recycling.

<b>Item</b>	<b>EWC Code</b>	<b>Quantity 2008 kgs</b>	<b>Quantity 2009 kgs</b>	<b>Quantity 2010 kgs</b>
Cardboard	15 01 01	14,133	26,310	6,810
Metal	15 01 04	14,580	14,680	11,340
Paper	20 01 01	30,908	29,690	30,160
Redundant wood	15 01 03	33,520	50,330	10,590
Kegs	15 01 04	4,710	15,040	6,000
Cans	20 01 40	160	190	67700
Glass	20 01 02	4,070	3,960	2,130
Brewers grains	02 07 99	10,637,960	11,738,170	12,150,260
Malt dust	02 07 99	48,000	60,030	95,470
Spent yeast	02 07 99	922,400	995,940	1,069,550
Electrical non haz	16 02 14	2,001	2,315	774
Plastic	15 01 02	5,351	7,125	22,410
Print toner non haz	08 03 18	400	0	0
Other compostable	20 03 01	9,470	11,592	6,350
Edible oil	20 01 25	360	700	1,560
Batteries	16 06 04	350	31	0
Biodegradable canteen waste	20 01 08	2,940	6,198	1,713
Mixed C&D	17 09 04	49,940	33,837	15,980
Rubble	17 01 07	-	-	19,380

Heineken Ireland is registered with the WEEE Society of Ireland

### 2.1.5 Waste Arising. Hazardous Waste Sent for Recycling

In 2006 the non- recycled hazardous waste sent offsite decreased. This was due mainly to the reporting system. The report only records waste leaving the site and not as it is generated on site so the collection routine influences the report.

Item		EWC Code	Quantity 2008 kgs	Quantity 2009 kgs	Quantity 2010 kgs
Lamps/tubes	Recycle	20 01 21*	40	87	36
Lab. Chems	Disposal	16 05 06*	85	639	-
DBS coolers	Recycle	20 01 23*	7630	----	16,135
Ink / solvent	Disposal	08 03 12*	50	25	37
Containers	Disposal	15 01 10*	40	20	61
C&D (oily)	Recycle	15.01.10*	720	-----	-
Monitors	Recycle	16 02 13*	428	297	168
Oily material	Disposal	15 02 02*	200	410	960
DBS coolers	Recycle	16.02.11*		21372	-
Asbestos	Disposal	17.06.01*			280

## 2.2 Energy and water consumption

### 2.2.1 Energy Consumption

Heavy fuel oil	N/A
Light fuel oil	N/A
Natural gas	0.0166667 (megawatt-hour/hl)
Electricity	0.0067 (megawatt-hour/hl)
Coal, etc	N/A

### 2.2.2. Water Consumption

On-site ground water	N/A
On-site surface water	N/A
Municipal supply water supply (M3)	3.3 hl / hl

## **2.3 Environmental Incidents and Complaints**

### **2.3.1 Introduction**

Heineken Ireland continues to receive noise complaints from the local residents. This form of complaint contributes to all environmental complaints for 2010. While Heineken Ireland has reduced the level of complaints drastically over the years by investing large amounts of money in noise abatement installations and awareness training, it will continue to do everything possible to reduce this figure even further

The complaints as listed below have already been submitted to the Agency.

### **2.3.2 Environmental incidents**

Heineken Ireland had one incidents with a possible environmental impact in 2010.

1. A drain from the C.I.P. plant collapsed with a possible release to the soil. On discovery all further discharges were immediately rerouted until the drain was made good.
2. An incident where by brewers grains were released to the yard surface following the failure of the brewers grains silo door failed to close after use. These grains were immediately swept up so there was no environmental impact.

### **2.3.3 Complaints Report Summary**

Total number of complaints 2008 05 all noise related.

Total number of complaints 2009 07 all noise related

Total number of complaints 2010 04 all noise related

### 2.3.3 Complaints Report

<b>Environmental Complaints 2010</b>					
<b>No</b>	<b>Date/Time of Complaint</b>	<b>Name of complainant</b>	<b>Reason for complaint</b>	<b>Response to complainant</b>	<b>Corrective/ Preventive action</b>
1	07/06/2010 @ 12.30pm	Carol Goulding	Noise coming from racking area (whistle from something)	Apologised to Carol but it was necessary to sterilise the carbon filters. This is normally done during the week but the main boiler is being overhauled and the availability of steam is reduced. At this point it was thought to only happen for one week end only	This work will revert to being a week day occurrence as soon as the main boiler overhaul is completed
2	26/06/2010 @ 14.30 pm	Carol Goulding	Noise coming from water treatment area	Apologised and explained that this will occur for a few more week ends but HI will only carry out this operation after 10.00 am to facilitate the local community	This work will revert to being a week day occurrence as soon as the main boiler overhaul is completed
3	29/08/2010 @ 13.30	Carol Goulding	Noise	Heineken Ireland apologised to Carol and explained that the noise source related to the steam sterilising of the carbon filters. This over the years has been done on Tuesdays but due to the overhaul of the main boiler the backwashing is being done on Sundays to facilitate production. When the main boiler is back on line sterilising the carbon filters will revert to the Tuesday slot.	
4	05/10/2010 by email	Daniel Cregg. danielcregg2010@gmail.com	The noise from the forklift trucks when they reverse.	HI responded by apologising for any inconvenience caused but this noise was a safety future on the trucks. Other noise types will be investigated and if deemed suitable for the operation without compromising safety, the rollout of same will be considered. To date the alternatives tried would comprise safety. HI will not compromise on safety.	HI will over the next number of weeks look at options to address this issue.

## **Management of the Activity**

### **3.1 Environmental Objectives and Targets**

#### **Raw Material**

The usage of raw materials, energy, electricity and process aids is dependent on the volume of beer produced.

Annually the target for the next three years are reviewed and revised based on the planned activities. This is to make our targets realistic. It also keeps us focused on continual improvement

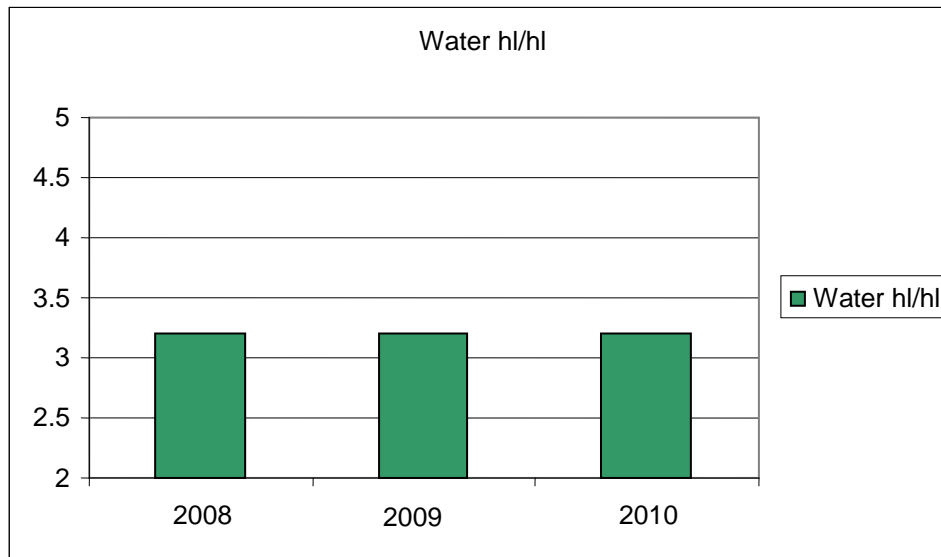
Heineken Ireland engage outside consultants from time to time to review the optimisation of the process and its use of raw materials

### 3.1.1 Water

Water is one of the main raw materials used to brew beer/stout. It is also used to clean plant and equipment. The local authority from The Lee Road Water Works supplies the water used by the brewery. This water is further treated on site for use as process water.

Usage	
Year	Actual (hl/hl)
2008	3.3
2009	3.3
2010	3.3

Target	
Year	Target (hl/hl)
2011	3.0
2012	2.9
2013	2.8

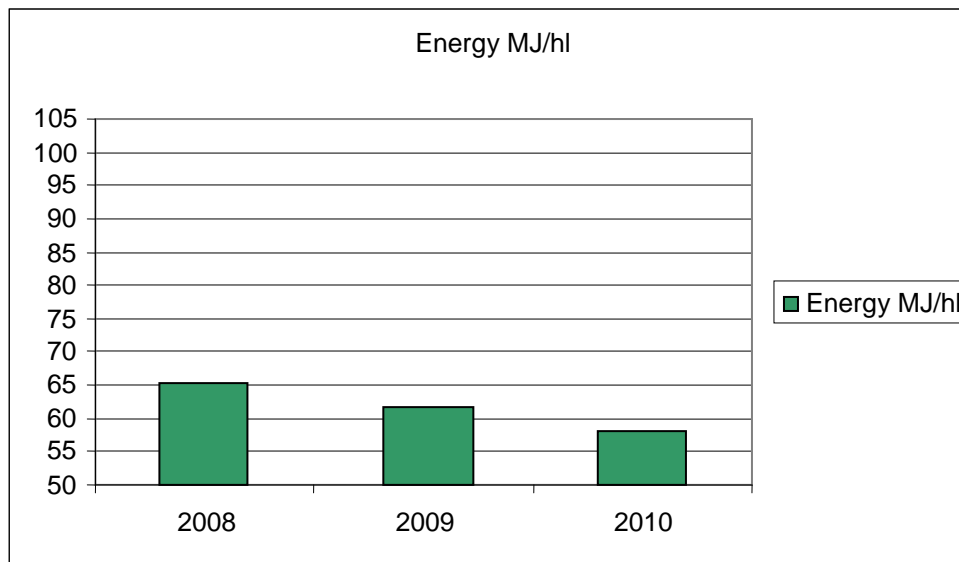


### 3.1.2 Energy

#### Natural Gas

Usage	
Year	Actual (MJ/hl)
2008	64
2009	60
2010	59

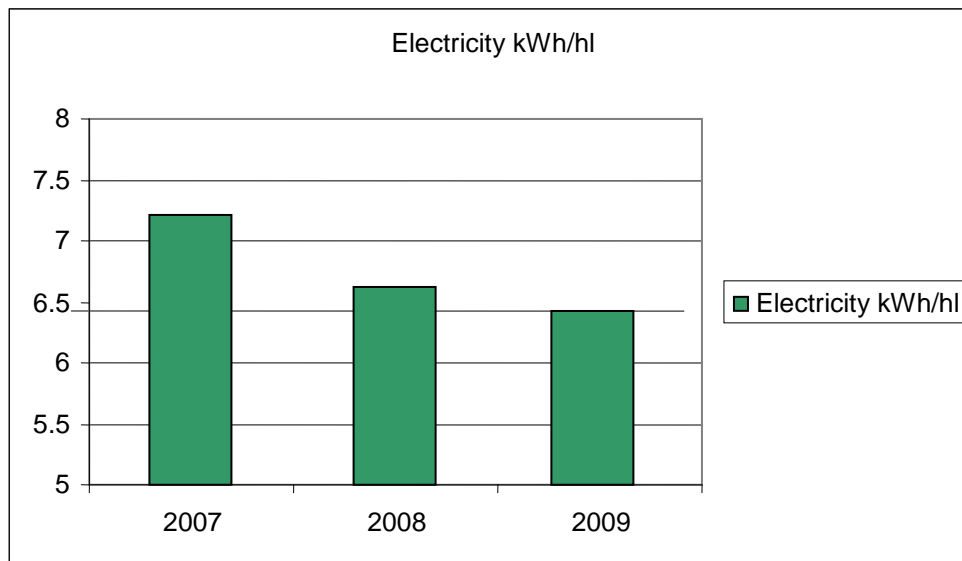
Target	
Year	Target(MJ/hl)
2011	55
2012	53
2013	50



### 3.1.3 Electricity

Usage	
Year	Actual (kWh/hl)
2008	7.1
2009	6.7
2010	6.5

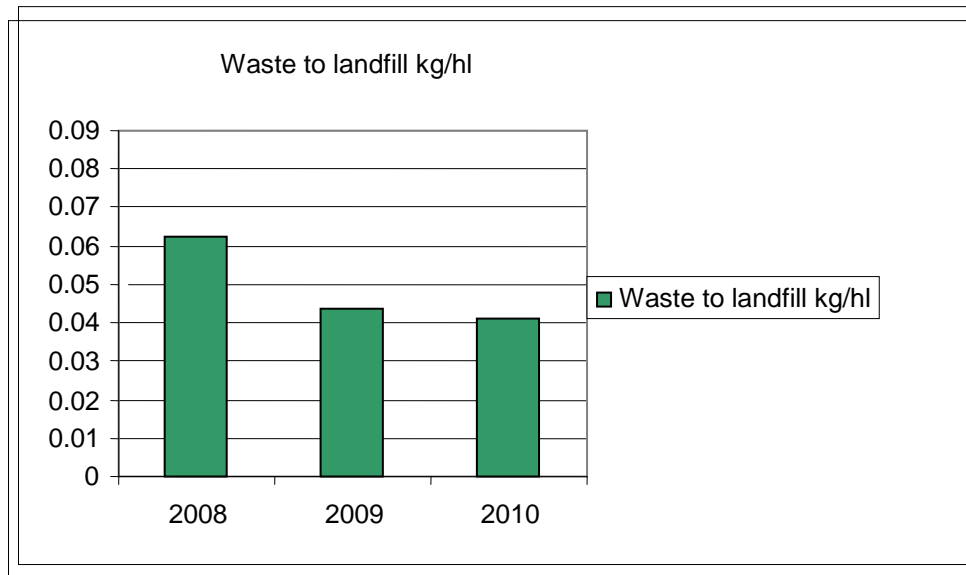
Target	
Year	Target (kWh/hl)
2011	6.4
2012	6.3
2013	6.2



### 3.1.4 Waste to Landfill

Actual	
Year	Actual kg/hl
2008	0.06
2009	0.04
2010	0.04

Target	
Year	Target kg/hl
2011	0.04
2012	0.04
2013	0.04



## Environmental Management Programme (EMP) 2010

	EMP Project	Rationale	Licence Requirements	Relationship to Objectives and Targets	Relationship to Aspects	Programme	Timeframe	Responsibility	Status
1	Upgrading of plant and equipment in utilities	Energy reduction expected	Condition 5		Aspects nos 1 & 3	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 1 Qtr 2 Qtr 2	TSM	Completed Completed Completed Completed
2	Upgrade of ammonia plant	Reduce volume of ammonia being stored on site.	Condition 5	.Reduction of 50% ammonia in storage	Aspects nos 1 & 12	Investment application Installation Commissioning	Qtr 1 Qtr 1 / Qtr 2 Qtr 2	TSM	Completed Completed Completed
3	Increased target for CO2 recovery	Reduction in the purchase of CO2	Condition 5		Aspects no 1	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 1 - 2012 Qtr 2 - 2012 Qtr 2 - 2012	.TSM	Completed
4	Heat recovery programme	Reduce heat loss and also heat production	Condition 5		Aspects nos 1 & 3	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 2 - 2011 Qtr 2 - 2011 Qtr 2 - 2011	TSM	Completed

**Environmental Management Programme (EMP) 2011**

	<b>EMP Project</b>	<b>Rationale</b>	<b>Licence Requirements</b>	<b>Relationship to Objectives and Targets</b>	<b>Relationship to Aspects</b>	<b>Programme</b>	<b>Timeframe</b>	<b>Responsibility</b>	<b>Status</b>
<b>1</b>	Upgrading of energy monitoring equipment	Energy reduction expected	Condition 5		Aspects nos 1 & 3	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 1 Qtr 2 Qtr 2	TSM	
<b>2</b>	Increased target for CO2 recovery	Reduction in the purchase of CO2	Condition 5		Aspects no 1	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 1- 2012 Qtr 2 - 2012 Qtr 2 - 2012	.TSM	
<b>3</b>	Heat recovery programme 1 (air compressors)	Reduce heat loss and also heat production	Condition 5	Electrical savings 0.31kWh/hl and 1.08 MJ/hl	Aspects nos 1 & 3	Feasibility study Investment application Installation Commissioning	Qtr 1 Qtr 2 - 2011 Qtr 2 - 2011 Qtr 2 - 2011	TSM	





### **3.4 Pollution Emission Register**

This is included in the electronic PRTR data, this is submitted electronically to the Agency and a copy included with this report.

### **3.5 Agency monitoring and Enforcement**

#### **3.5.1 Emissions sampling and analysis by Agency**

##### **Site visit and inspections carried out by Agency Inspector**

An inspection of the site was conducted in 2010

#### **3.5.2 Analysis Results Differences**

**The differences between Heineken Ireland and the Agency analysis results were not significant.**

### **4.0 Licence – Specific Reports**

#### **4.1 Integrity Testing**

The product tanks (similar to the bunds) are on the preventative maintenance plan

The electronic system PEMAC is in operation at the site

The integrity test for the underground tanks and pipelines was due in 2010 but Heineken Ireland requested to the EPA that this be delayed until 1<sup>st</sup> quarter 2011 for logistical reasons in production. The permission was granted and the 2011 survey will be included in the 2011 AER

#### **4.2 Noise Surveys**

The Annual Noise Survey Report for 2010 is included

#### **4.3 Facilities being used by HI**

List of waste Facilities being used by Heineken Ireland included as requested by the Agency

#### **4.4 ERLA report for the Facility**

The report was included in the 2009 AER

#### **4.5 The AER PRTR worksheet**



Environmental Protection Agency

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.11

<b>REFERENCE YEAR</b>	2010
-----------------------	------

## 1. FACILITY IDENTIFICATION

Parent Company Name	Heineken Ireland Limited
Facility Name	Heineken Ireland Limited
PRTR Identification Number	P0445
Licence Number	P0445-01

Waste or IPPC Classes of Activity

No.	class name
7.3.1	Brewing (including cider and perry production) in installations where the production capacity exceeds 25 million litres per year, not included in paragraph 7.8.
7.3.1	Brewing (including cider and perry production) in installations where the production capacity exceeds 25 million litres per year, not included in paragraph 7.8.

Address 1	Murphy Brewery
Address 2	Leitrim Street
Address 3	Cork
Address 4	
Country	Ireland
Coordinates of Location	-8.47297 51.9035
River Basin District	IESW
NACE Code	1105
Main Economic Activity	Manufacture of beer
<b>AER Returns Contact Name</b>	Theresa Kiely
<b>AER Returns Contact Email Address</b>	Theresa.Kiely@Heineken.ie
<b>AER Returns Contact Position</b>	Environmental Engineer
<b>AER Returns Contact Telephone Number</b>	021-4514480 (Direct) / 4503371
<b>AER Returns Contact Mobile Phone Number</b>	
<b>AER Returns Contact Fax Number</b>	021-4551288
<b>Production Volume</b>	0.0
<b>Production Volume Units</b>	
<b>Number of Installations</b>	0
<b>Number of Operating Hours in Year</b>	0
<b>Number of Employees</b>	0
<b>User Feedback/Comments</b>	
<b>Web Address</b>	www.heinekenireland.ie

## 2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General
8(b)(ii)	Vegetable raw materials

## 3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : P0445 | Facility Name : Heineken Ireland Limited | Filename : P0445\_2010 PRTR.xls | Return Year : 2010 |

08/04/2011 10:32

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR		Please enter all quantities in this section in KGs							
POLLUTANT		METHOD		QUANTITY					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
03	Carbon dioxide (CO2)	E	ISO 12039:2001		4092147.0	2620943.0	6713090.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	EN 14792:2005		0.0	1166.0	1166.0	0.0	0.0
80	Chlorine and inorganic compounds (as HCl)	E	EN 1911-1 to 3:2003		0.0	450.0	450.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR		Please enter all quantities in this section in KGs						
POLLUTANT		METHOD		QUANTITY				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR		Please enter all quantities in this section in KGs						
POLLUTANT		METHOD		QUANTITY				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill:		Heineken Ireland Limited			
Please enter summary data on the quantities of methane flared and / or utilised		Method Used		Facility Total Capacity m3 per hour	
	T (Total) kg/Year	M/C/E	Method Code	Designation or Description	
Total estimated methane generation (as per site model)	0.0				N/A
Methane flared	0.0				0.0 (Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0 (Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

| PRTR# : P0445 | Facility Name : Heineken Ireland Limited | Filename : P0445\_2010 PRTR.xls | Return Year : 2010 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
No. Annex II	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT		M/C/E	Method Used		QUANTITY			
Pollutant No.	Name		Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : P0445 | Facility Name : Heineken Ireland Limited | Filename : P0445\_2010 PRTR.xls | Retu

08/04/2011 10:32

**SECTION A : PRTR POLLUTANTS**

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs				
POLLUTANT		METHOD			QUANTITY				
No. Annex II	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year	
			Method Code	Designation or Description					
13	Total phosphorus	M	2:2004	EN ISO 15681-1 to		0.0	0.0	0.0	0.0
12	Total nitrogen	M	EN 12260:2003			7883.0	7883.0	0.0	0.0
76	Total organic carbon (TOC) (as total C or COD/3)	C	EN 1484:1997			2424057.0	2424057.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

**SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)**

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs				
POLLUTANT		METHOD			QUANTITY				
Pollutant No.	Name	M/C/E	Method Used		Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year	
			Method Code	Designation or Description					
306	COD	M	OTH	ET067 ALPHA 2005:5220:C		808020.0	808020.0	0.0	0.0
303	BOD	M	OTH	ET066 APHA 2005:5210:B		538138.0	538138.0	0.0	0.0
308	Detergents (as MBAS)	M	OTH	APHA 2005 5540:C		15.0	15.0	0.0	0.0
314	Fats, Oils and Greases	M	OTH	ET 083 based on ALPHA 5520 D		2656.0	2656.0	0.0	0.0
240	<b>Suspended Solids</b>	M	OTH	ET 042 Based on ALPHA 2450:B		205225.0	205225.0	0.0	0.0

\* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

[PRTR#: P0445 | Facility Name : Heineken Ireland Limited | Filename : P0445\_2010 PRTR.xls | Return Year : 2010 |

08/04/2011 10:32

Please enter all quantities on this sheet in Tonnes

25

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility	Non-Haz Waste : Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility	Non-Haz Waste : Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used							
Within the Country	15 01 01	No	6.81	paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Glenanore Cartons Castletownroche Co. Cork,CK(N) 231/05		.....,Ireland			
Within the Country	02 07 99	No	95.47	waste not otherwise specified	R3	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			
Within the Country	15 01 04	No	11.34	metallic packaging	R3	M	Weighed	Offsite in Ireland	One 51 ES Metals(Ireland Ltd),CK(S) 491/07		.....,Ireland			
Within the Country	15 01 02	No	22.41	plastic packaging	R5	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			
Within the Country	02 07 99	No	1069.55	waste not otherwise specified	R3	M	Weighed	Offsite in Ireland	Carberry Milk Products,P0390-03		.....,Ireland			
Within the Country	20 03 01	No	6.35	mixed municipal waste	R3	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			
Within the Country	20 01 25	No	1.56	edible oil and fat	R9	M	Weighed	Offsite in Ireland	Agri Energy,WMWP/20/06		.....,Ireland			
Within the Country	20 01 01	No	30.16	paper and cardboard	R3	M	Weighed	Offsite in Ireland	Rehab Recycling,WP 08/04		.....,Ireland			
Within the Country	15 01 03	No	10.59	wooden packaging	R3	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			
Within the Country	15 01 04	No	6.0	metallic packaging	R4	M	Volume Calculation	Offsite in Ireland	P. Carney Ltd,P0402		.....,Ireland			
Within the Country	20 01 40	No	67.7	metals	R4	M	Volume Calculation	Offsite in Ireland	P. Carney Ltd,P0402		.....,Ireland			
Within the Country	20 01 02	No	2.13	glass	R5	M	Weighed	Offsite in Ireland	Rehab Recycling,WP 08/04		.....,Ireland			
Within the Country	16 02 14	No	0.774	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R4	M	Weighed	Offsite in Ireland	KMK Metals Recycling,W0113-02		.....,Ireland			
Within the Country	20 01 08	No	1.71	biodegradable kitchen and canteen waste mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	R3	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			
Within the Country	17 09 04	No	15.98	discarded equipment other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	R5	M	Weighed	Offsite in Ireland	Ashgrove Plant Ltd,W0147-01		.....,Ireland			
Within the Country	17 01 07	No	19.38	mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	R5	M	Weighed	Offsite in Ireland	Ashgrove Plant Ltd,W0147-01		.....,Ireland			
Within the Country	20 01 21	Yes	0.036	fluorescent tubes and other mercury-containing waste	R4	M	Weighed	Offsite in Ireland	KMK Metals Recycling,W0113-02		.....,Ireland		KMK Metals Recycling Ltd,W0113-02,Cappincur Industrial Estate,Daigean Road,Tullasmore,Co.Offaly,Ireland	.....,Ireland
To Other Countries	20 01 23	Yes	16.14	discarded equipment containing chlorofluorocarbons	R4	C	Weighed	Abroad	Site Logistics,WP98049		.....,Germany		Cooler Recycling Soplutions Ltd (CRS) EAW ML,,64173 Hadrian Enterprise Park ,Haltwhistle ,Northumberland BNE 49 OEX UK,,United Kingdom	.....,United Kingdom
To Other Countries	08 03 12	Yes	0.037	waste ink containing dangerous substances	R2	E	Volume Calculation	Abroad	Indaver Ireland,192-1		.....,Ireland		Abfall- Verwertungs-Gesellschaft mbH (AVG) reg,AVG reg,BOIVS0013 Borsigstrasse,,2 D-22113 Hamburg,,Germany	.....,Germany
To Other Countries	15 01 10	Yes	0.061	packaging containing residues of or contaminated by dangerous substances	R2	E	Volume Calculation	Abroad	Indaver Ireland,192-1		.....,Ireland		Abfall- Verwertungs-Gesellschaft mbH (AVG) reg,AVG reg,BOIVS0013 Borsigstrasse,,2 D-22113 Hamburg,,Germany	.....,Germany
Within the Country	16 02 13	Yes	0.17	discarded equipment containing hazardous components (16) other than those mentioned in 16 02 09 to 16 02 12	D10	E	Volume Calculation	Offsite in Ireland	KMK Metals Recycling,W0113-02		.....,Ireland		KMK Metals Recycling Ltd,W0113-02,Cappincur Industrial Estate,Daigean Road,Tullasmore,Co.Offaly,Ireland	.....,Ireland
To Other Countries	17 06 01	Yes	0.28	insulation materials containing asbestos	D14	C	Weighed	Abroad	Rialtas Environmental Ltd,W0192-0		.....,Germany		Buhck GmbH & Co,eg0019,Sudring 38 21465,Wentorf ,,,Germany	Rappenberg ,21502 Wiershop,,Germany
Within the Country	20 03 01	No	28.62	mixed municipal waste	D13	M	Weighed	Offsite in Ireland	Greenstar Recycling,W0136-02		.....,Ireland			

\* Select a row by double-clicking the Description of Waste then click the delete button

[Link to previous years waste data](#)

[Link to previous years waste summary data & percentage change](#)



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## **2010 HEINEKEN IRELAND ANNUAL IPPC ENVIRONMENTAL NOISE SURVEY**

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Technical Report Prepared For

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Leitrim Street  
Cork City**

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Technical Report Prepared By

**Niall Vaughan BSc, AMIOA**

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CLV Consulting Reference

**NV31082010/NR01**

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Date of Issue

**31<sup>st</sup> August 2010**

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## EXECUTIVE SUMMARY

The Heineken Ireland facility on Leirim Street, Cork City is subject to an Integrated Pollution Prevention Control (IPPC) licence, (Register No. PO445-01), as issued by the Environmental Protection Agency (EPA). Under the terms of this licence the facility is required to have an annual environmental noise survey conducted at designated noise monitoring locations. There are five noise monitoring locations situated in close proximity to the Heineken facility. These locations are detailed within this report. The purpose of this survey is to assess compliance with the noise criteria as stipulated in the Heineken IPPC licence.

Heineken Ireland commissioned CLV Consulting to conduct their 2010 environmental noise survey. The survey was carried out during the month of August 2010. For the duration of the survey it is understood that the facility was operating under normal production conditions.

It can be concluded from the measured 2010 environmental noise levels and observations during the survey that the Heineken facility meets compliance with the appropriate noise sections of their IPPC licence.



**NIALL VAUGHAN**  
Acoustic Consultant

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## 1.0 INTRODUCTION

CLV Consulting has been commissioned by Heineken Ireland to conduct their annual IPPC environmental noise survey. The noise survey is undertaken in order to assess the facility's compliance with their relevant IPPC noise criteria.

The purpose of this report is to fulfil the noise chapter of the Annual Environmental Reporting (AER) requirements of the Heineken IPPC licence and determine the current ambient levels at the designated sensitive areas. In addition to this the report compares current levels with the results of previous surveys and highlights any changes or additional sources, which contributed to readings during the most recent survey.

The conditions of the Heineken Ireland Integrated Pollution Licence N<sup>o</sup> 445-01 in relation to noise are outlined in Section 8 of the Licence as follows:

- 8.1 *The licensee shall continue its Noise Improvement Programme as detailed in the IPC license application.*
- 8.2 *Notwithstanding any surveys conducted as part of Condition 8.1 above, the licensee shall carry out a noise survey of the site operations including on site traffic, annually. The licensee shall consult with the Agency on the timing, nature and extent of the survey and shall develop a survey programme to the satisfaction of the Agency. The survey programme shall be submitted to the Agency in writing at least one month before the survey is to be carried out. A record of the survey results shall be available for Inspection by any authorised persons of the Agency at all reasonable times and a summary report of this record shall be included as part of the AER.*
- 8.3 *Within twelve months or date of grant of this licence activities on site shall not give rise to noise levels off-site at noise sensitive locations, which exceed the following sound pressure limits ( $L_{Aeq, 15 \text{ minutes}}$ ) subject to Condition 3 of this licence:*
- |       |             |           |
|-------|-------------|-----------|
| 8.3.1 | Daytime:    | 55 dB(A)  |
| 8.3.2 | Night-time: | 45 dB (A) |
- 8.4 *During night-time hours, there shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.*

As outlined above, the requirements of Condition 8 above are subject to the following section of Condition 3 of the licence as follows:

- *Noise from the activity shall not give rise to sound pressure levels ( $L_{Aeq, 15 \text{ min}}$ ) measured at the specified noise sensitive locations, which exceed the limit value(s) by more than 2 dB.*

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## 2.0 SURVEY DETAILS

Two environmental noise surveys were conducted in order to quantify the existing noise environment. The survey was conducted generally in accordance with ISO 1996: 1982: *Acoustics – Description and measurement of environmental noise* and the EPA guidance note – *Guidance Note For Noise In Relation To Scheduled Activities*: Specific details are set out below.

### 2.1 Measurement Locations

Measurements were conducted at five noise sensitive locations in the vicinity of the Heineken Ireland facility. Figure 1, at the rear of this document, details the approximate locations of the measurement positions.

**Location 1 (S1):** Shandon Court is small development of private residences located directly North East of the facility in an elevated position overlooking the main yard between the keggling hall and the Brewery. The residence has a direct line of sight into the yard and to the facility buildings – boiler, compressor, etc. In addition, it has a line of sight to the roof of the Brewery building. The property is located within 120 meters North East of East Gate.

**Location 2 (S2):** This location is in a laneway adjacent Poulraddy House; it is partway up Lady's Well Hill along the North East corner of the facility. It is directly North of the Malt Silo. The residence has a direct line of sight to the roof of the Brewery building and is partly shielded from the facility by the silo building. The property is located within 30 meters of the silo building and some 45 meters from the North east boundary.

**Location 3 (S3):** S3 are a series of properties located along Upper John's Street. The properties are located along the West boundary of the facility and overlook the main yard between the Kegging Hall and the Brewery. The residences are shielded by the West wall of the utilities buildings but are located within 25 meters of some of the utilities located along the Western boundary.

**Location 4 (S4):** S4 is a property located along the East side of John Street Upper. The property backs East towards the boiler house and utility buildings of Heineken Ireland. The residence has a direct line of sight to the main yard between the Kegging Hall and the Brewery and to the roofs of the adjacent utility buildings. The property is located within 30 meters of the utilities buildings along the Western boundary.

**Location 5 (S5):** S5 are a series of properties located along St. John's Villas. The properties are partially shielded by a

disused store to the East. The properties are located within 30 meters of the Western boundary.

## 2.2 Survey Periods

Measurements were conducted over the course of two survey periods as follows:

- 10:05hrs to 12:00hrs on 24<sup>th</sup> August 2010;
- 01:30hrs to 03:30hrs on 25<sup>th</sup> August 2010.

During the survey periods noted above, the facility was in full operation.

The weather throughout both survey periods was dry and calm.

## 2.3 Personnel and Instrumentation

Niall Vaughan (CLV) conducted the noise level measurements during both the daytime and night-time survey periods.

The measurements were conducted using a Larson Davis Type 824 Sound Level Meter. Before and after the survey the measurement apparatus was checked calibrated using a Larson Davis Type 250 Sound Level Calibrator.

## 2.4 Procedure

Measurements were conducted over two periods. Sample periods were 15 minutes long during both the daytime and night-time surveys. The results were saved to the instrument memory for later analysis. Survey personnel noted all primary noise sources contributing to noise build-up.

## 2.5 Measurement Parameters

The survey results are presented in terms of the following five parameters:

**L<sub>Aeq</sub>** is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period.

**L<sub>Amax</sub>** is the instantaneous maximum sound level measured during the sample period.

**L<sub>Amin</sub>** is the instantaneous minimum sound level measured during the sample period.

**L<sub>A10</sub>** is the sound level that is exceeded for 10% of the sample period. It is typically used as a descriptor for traffic noise.

**L<sub>A90</sub>** is the sound level that is exceeded for 90% of the sample period. It is typically used as a descriptor for background noise.

The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing.

All sound levels in this report are expressed in terms of decibels (dB) relative to  $2 \times 10^{-5}$  Pa.

## 2.6 Site Sources

Previous surveys within the Heineken Ireland facility have identified a number of primary noise sources on the site. The introduction of an ongoing and comprehensive Noise Control Programme has resulted in the attenuation of many of the primary site noise sources to the point where they no longer contribute to the noise climate at the noise-sensitive locations.

## 2.7 Results

### 2.7.1 Location 1 (S1)

The results of measurements taken during the surveys conducted at Location 1 are summarised in Table 1.

Start Time	Period	Measured Noise Levels (dB re. $2 \times 10^{-5}$ Pa)					Comments
		L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	L <sub>A10</sub>	L <sub>A90</sub>	
10:05 – 10:20	Day	57	74	48	59	54	Traffic. Birdsong.
02:41 – 02:56	Night	50	60	46	52	47	Traffic. Facility.

**Table 1** Summary of results for Location 1 (S1).

Traffic noise was observed as being the dominant source of noise for both the daytime and night-time periods. The majority of the traffic noise was coming from Leitrim Street which is overlooked from this location. There were local contributions from traffic on Richmond Hill which is approximately 40m from S1.

Birdsong was noted as an occasional background noise source during the daytime period. During the night-time period the Heineken facility was perceptible as a background source.

Noise levels were of the order of 57dB L<sub>Aeq</sub> and 54dB L<sub>A90</sub> and 50dB L<sub>Aeq</sub> and 47dB L<sub>A90</sub> daytime and night-time respectively.

There were no tonal components evident on the frequency spectrum during the survey periods.

### 2.7.2 Location 2 (S2)

The results of measurements taken during the surveys conducted at Location 2 are summarised in Table 2.

Start Time	Period	Measured Noise Levels (dB re. $2 \times 10^{-5}$ Pa)					Comments
		L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	L <sub>A10</sub>	L <sub>A90</sub>	
10:27 – 10:42	Day	62	77	56	64	58	Traffic.
03:07 – 03:22	Night	63	78	38	68	41	Traffic. Facility.

**Table 2** Summary of results for Location 2 (S2).

The ambient daytime and night-time noise environment was dominated by traffic movements on Leitrim Street which it is in close proximity to. In contrast to previous years, and to what one would expect, the night-time L<sub>Aeq</sub> values were marginally higher than the daytime levels. The similarity in the noise levels was attributed to an unusually high level of vehicle movements on Leitrim Street during the night-time monitoring period.

The Heineken facility was not audible during the daytime period however operations within the Malt Silo were perceptible as a background source during the night-time period. The Malt Silo operates across from the main Heineken facility on the Lady's Well side of Leitrim Street.

Noise levels were of the order of 62dB  $L_{Aeq}$  and 58dB  $L_{A90}$  and 63dB  $L_{Aeq}$  and 41dB  $L_{A90}$  daytime and night-time respectively.

There were no tonal properties evident during the daytime or night-time periods.

### 2.7.3 Location 3 (S3)

The results of measurements taken during the surveys conducted at Location 3 are summarised in Table 3.

Start Time	Period	Measured Noise Levels (dB re. $2 \times 10^{-5}$ Pa)					Comments
		$L_{Aeq}$	$L_{Amax}$	$L_{Amin}$	$L_{A10}$	$L_{A90}$	
10:51 – 11:06	Day	63	79	48	66	55	Traffic. Children playing.
01:36 – 01:51	Night	54	58	41	43	46	Traffic. Facility.

**Table 3** Summary of results for Location 3 (S3).

Vehicle movements on Upper John Street were the primary noise source at S3. Children playing were faintly audible for the first five minutes of the measurement period. Forklift reversing signals within the Heineken facility were audible on occasions during the monitoring period.

Both local traffic movements on Upper John Street and distant traffic on Leitrim Street were noted as the chief sources of noise for the night-time period. Noise emanating from the Heineken services was audible as a contributory background source.

Noise levels were of the order of 63dB  $L_{Aeq}$  and 55dB  $L_{A90}$  and 54dB  $L_{Aeq}$  and 46dB  $L_{A90}$  daytime and night-time respectively.

There were no tonal properties evident during the daytime or night-time periods.

### 2.7.4 Location 4 (S4)

The results of measurements taken during the surveys conducted at Location 4 are summarised in Table 4.

Time	Period	Measured Noise Levels (dB re. $2 \times 10^{-5}$ Pa)					Comments
		$L_{Aeq}$	$L_{Amax}$	$L_{Amin}$	$L_{A10}$	$L_{A90}$	
11:13 – 11:28	Day	61	78	44	64	55	Traffic. Facility.
01:54 – 02:09	Night	48	64	44	49	46	Facility. Distant traffic.

**Table 4** Summary of results for Location 4 (S4).

Noise emissions emanating from traffic movements on Upper John Street was the most audible source of noise at S4 for the daytime monitoring period. General plant items from within the Heineken plant were present as a background source.

Both the Heineken facility and distant traffic noise from Leitrim Street were regarded as the two most dominant noise sources for the night-time period. The noise from the Heineken facility was general plant noise associated with the production activities. A humming noise from an Electricity Supply Board transformer was present as a constant background source.

Noise levels were of the order of 61dB  $L_{Aeq}$  and 55dB  $L_{A90}$  and 48dB  $L_{Aeq}$  and 46dB  $L_{A90}$  daytime and night-time respectively.

There were no tonal properties evident during the daytime or night-time periods.

**2.7.5 Location 5 (S5)**

The results of measurements taken during the surveys conducted at Location 5 are summarised in Table 5.

Time	Period	Measured Noise Levels (dB re. $2 \times 10^{-5}$ Pa)					Comments
		$L_{Aeq}$	$L_{Amax}$	$L_{Amin}$	$L_{A10}$	$L_{A90}$	
11:41 – 11:56	Day	66	76	49	68	55	Traffic. Birdsong.
02:16 – 02:31	Night	46	63	41	48	42	Traffic. Facility.

**Table 5** Summary of results for Location 5 (S5).

The recorded daytime noise levels at this location were again dominated by traffic movements from Upper John Street and Watercourse Road. Birdsong was occasionally present as a very slight contributory source.

Distant traffic noise from Leitrim Street was observed as the chief noise source for the night-time measurement. Noise emissions from the Heineken plant were audible but were regarded as being very much a background noise source.

Noise levels were of the order of 66dB  $L_{Aeq}$  and 55dB  $L_{A90}$  and 46dB  $L_{Aeq}$  and 42dB  $L_{A90}$  daytime and night-time respectively.

There were no tonal properties evident during the daytime or night-time periods.

### 3.0 DISCUSSION AND CONCLUSIONS

Conditions 3 and 8.3 of the Heineken Ireland IPPC Licence stipulates the following noise limits for emissions associated with the facility, at nearest noise sensitive locations.

#### Condition 3

*Noise from the activity shall not give rise to sound pressure levels ( $L_{Aeq, 15 \text{ min}}$ ) measured at the specified noise sensitive locations, which exceed the limit value(s) by more than 2 dB.*

#### Condition 8.3

*Daytime (08:00hrs to 22:00hrs): 55dB (A)  $L_{Aeq}$  (15 Minutes)*  
*Night-time (22:00hrs to 08:00hrs): 45dB (A)  $L_{Aeq}$  (15 Minutes)*

The Heineken Ireland facility, which is situated in Cork City, is adjacent to Leitrim Street which is a national primary route (N20). This route serves as a main artery for a significant volume of the traffic travelling to and from Limerick City and the west of Ireland. As a result of the traffic movements on this route, the other local roadways and the associated noise from the traffic movements it was noted that at all of the monitoring locations traffic movements contributed to the measured  $L_{Aeq}$  values. We would therefore suggest that in order to provide a more accurate reflection of the Heineken Ireland noise levels the  $L_{A90}$  parameter should be reviewed.

Values expressed in terms of  $L_{A90}$  can provide the more accurate indication of background noise levels when other factors such as traffic are present. The  $L_{Aeq}$  is an equivalent continuous steady sound level, and is therefore affected by contributions from noisy events of short duration, such as a car driving by. At a facility such as the Heineken Ireland Brewery, the  $L_{A90}$  parameter is a better measure of the noise emissions from the site alone. Table 6 below compares  $L_{Aeq}$  and  $L_{A90}$  levels monitored at all locations for the surveys between 2007 and 2010.

It could therefore be concluded from the 2010 noise monitoring survey observations and the  $L_{A90}$  data that the Heineken Ireland facility continues to operate within the limits of its IPPC licence.

Table 6 below compares the 2010 survey with previous environmental surveys.

Location		Year	2007		2008		2009		2010	
		Level	$L_{Aeq}$	$L_{A90}$	$L_{Aeq}$	$L_{Aeq}$	$L_{A90}$	$L_{Aeq}$	$L_{Aeq}$	$L_{A90}$
S1	#1 Shandon Ct.	58	49	61	58	49	61	52	57	54
		48	42	47	48	42	47	42	50	47
S2	Poulraddy House	63	53	62	63	53	62	52	62	58
		57	42	54	57	42	54	41	63	41
S3	32 John's St.	68	51	64	68	51	64	52	63	55
		46	43	44	46	43	44	42	54	46
S4	Courtyard over Joyce's	67	52	64	67	52	64	53	61	55
		58	45	54	58	45	54	44	48	46
S5	St John's Villas	68	52	64	68	52	64	53	66	55
		48	44	47	48	44	47	44	46	42

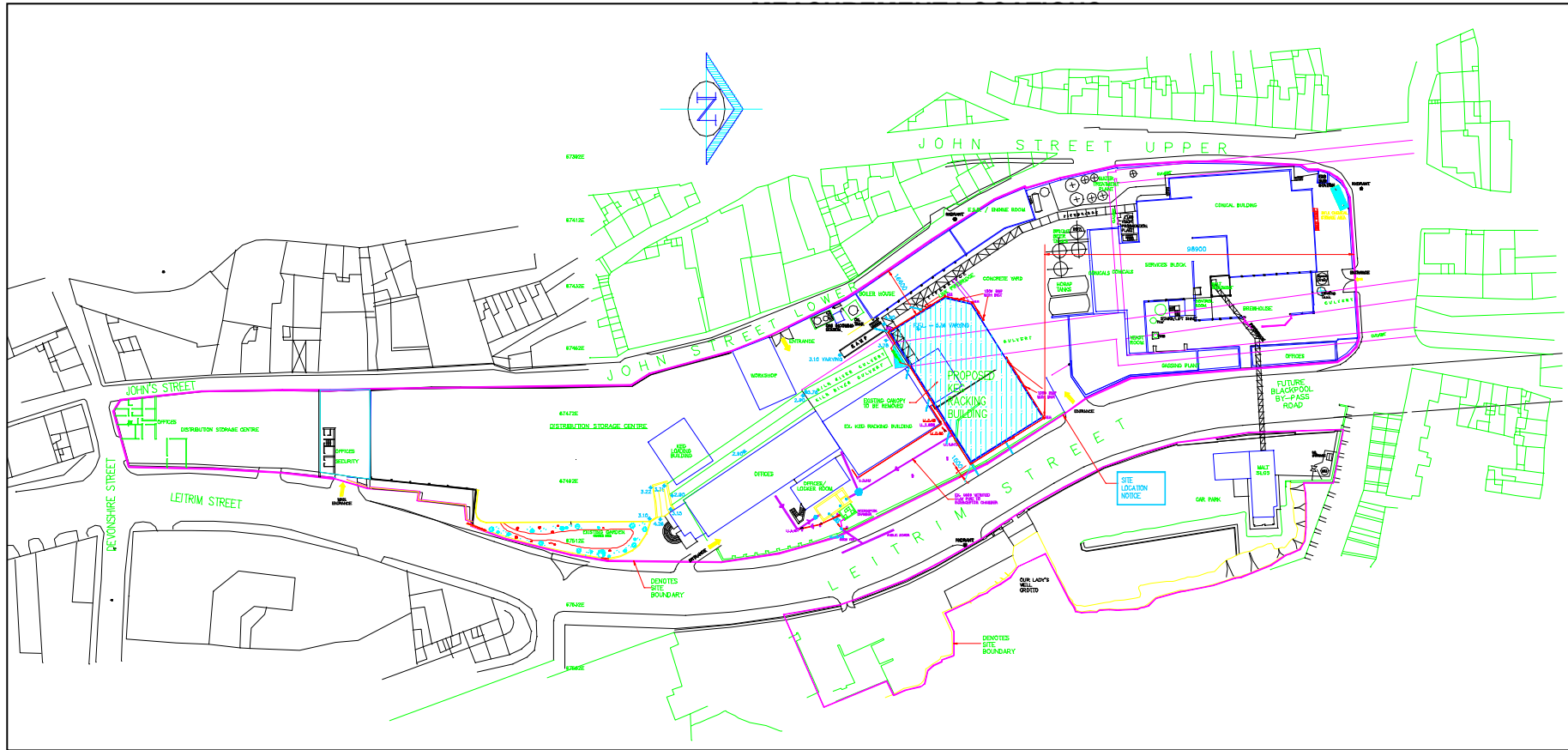
**Table 6** Comparison of Measured  $L_{Aeq}$  and  $L_{A90}$  levels between 2007 and 2010 surveys

**APPENDIX A**

**A-Weighted 1/3 Octave Data**

Location			100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k	5k	
S1	#1 Shandon Ct.	Day	26	30	35	36	39	41	39	43	44	47	47	44	41	39	37	35	32	29	
		Night	33	37	41	40	42	45	46	48	46	45	45	47	46	45	45	43	41	38	
S2	Poulraddy House	Day	23	25	25	25	25	25	25	27	27	27	27	27	27	32	32	28	28	23	
		Night	42	43	46	49	52	53	53	56	59	61	62	58	55	52	49	46	44	41	
S3	32 John's St.	Day	34	37	38	38	40	41	41	45	45	47	47	45	44	42	40	39	36	33	
		Night	35	35	32	32	37	40	42	42	45	47	46	46	46	45	43	42	41	38	
S4	Courtyard over Joyce's	Day	29	35	23	21	20	20	21	22	23	24	24	24	22	22	22	22	22	26	35
		Night	40	42	44	46	49	50	51	55	57	59	59	56	52	49	46	44	41	39	
S5	St John's Villas	Day	40	41	44	44	46	47	48	50	52	54	55	51	48	47	44	43	42	39	
		Night	37	39	41	44	48	49	51	54	56	59	60	58	54	50	48	46	44	40	

FIGURE 1



# Register of EPA Agreed Facilities for the Recovery/Disposal of Waste

Facilities to which waste may be sent by [Insert your Facility Name and Licence Register No.]					Recovery/Disposal Destinations				Waste Haulier	
Facility Waste to be Dispatched to	Licensee's Description of Waste(s) to be Dispatched	European Waste Catalogue code(s)	Agency Agreement Correspondence Reference No.	Agreement Date	Waste Licence No.	Waste Permit No.	Waste Permit valid until	Waste Permit Issuing Authority	Waste Carrier	Waste Collection Permit No.
Glenanore Cartons, Castletownroche, Co. Cork.	Cardboard	15 01 01	At Licence application & again M445/AP28jf.doc	1999 & 14th Sept 2004	N/A	CK(N) 231/05	04/01/2009	Cork Co. Co.	Glenanore Cartons, Castletownroche, Co. Cork.	CK WMC 75/01
Cork Metal, Old Mallow Road, Cork.	Metal	15 01 04	Licence Application	1999	N/A	CK(S) 491/07	29/01/2011	Cork Co. Co.	One51 ES Metals(Ireland Ltd)	WCP-LK-08-589-01
Rehab Information security Management, Monaghan Road, Cork.	Paper	20 01 01	Licence Application	1999	N/A	WP 08/04	30/06/2007	Cork Co. Co.	Gandon Enterprises Ltd, Rehab Recycling, Monahan Road, Cork.	CK WMC 146/03
Waste Recovery Services (Fermoy) Limited, Cullenagh, Fermoy, Co. Cork	Wood	15 01 03	M445/AP29jf.doc	15th Sept. 2004	W0107-01	N/A	N/A	EPA	Greenstar Recycling, Sarsfield Industrial Estate, Glanmire, Co. Cork.	CK WCP 323/05
P.Carney Ltd., Crossakiel, Kells. Co. Meath.	Kegs	15 01 04	M445/AP27aajf.doc	17/08/2004	P0402-02	N/A	N/A	EPA & IBA		n/a
Rehab Recycling, Monaghan Road, Cork	Cans	20 01 40	Licence Application	1999	N/A	WP 08/04	30/06/2007	Cork Co.Co.	Gandon Enterprises Ltd, Rehab Recycling, Monahan Road, Cork.	CK WMC 146/03
Rehab Recycling, Monaghan Road, Cork	Glass	20 01 02	Licence Application	1999	N/A	WP 08/04	30/06/2007	Cork Co.Co.	Gandon Enterprises Ltd, Rehab Recycling, Monahan Road, Cork.	CK WMC 146/03
Greenstar Recycling, Sarsfield Industrial Estate, Glanmire, Co. Cork.	Redundant Plastic	15 01 06	M445/AP29jf.doc	15/09/2004	W0136-02	N/A	N/A	EPA	Greenstar Recycling, Sarsfield Industrial Estate, Glanmire, Co. Cork.	CK WCP 323/05
Irish Lamps Recycling Co. Ltd., Athy, Co. Kildare.	Lamps and tubes	20 01 21*	M445/APW03SMcD.doc	07/11/2005	N/A	WP 02/2000	N/A	Kildare Co. Co.	Irish Lamps Recycling Co. Ltd., Athy, Co. Kildare.	CK WCP 57/01
ENVA Ireland Ltd, Clonminam Industrial Estate, Portlaoise, Co. Laois.	Waste oil	13 02 06*	Licence Application and again M445/AP32smcd.doc	22/06/2005	W0184-01	N/A	N/A	EPA	ENVA (Ireland)Ltd, 44A Moyle Rd. Dublin Ind.Est. Dub 11	CK WMC 16/01
Returnbatt Ltd., Unit 35, Kildare Enterprise Centre, Kildare Town.	Batteries	16 06 04	M445/AP07eb	12/06/2001	N/A	97/2002	N/A	Kildare Co. Co.	Returnbatt Ltd., Unit 35, Kildare Enterprise Centre, Kildare Town.	CK WMC 80/01
Enva Ireland Ltd, Clonminam Industrial Estate, Portlaoise, Co. Laois.	Oily material	15 02 02*	Licence Application and again M445/AP32smcd.doc	22/06/2005	W0184-01	N/A	N/A	EPA	Atlas, Clonminam Industrial Estate, Portlaoise, Co. Laois.	CK WMC 16/01



