



**Principe di San Daniele S.p.A.**  
San Daniele del Friuli Factory

# ENVIRONMENTAL STATEMENT

2010



**EMAS**

INFORMAZIONE CONVALIDATA  
N. Registro IT - 000922

*Statement compiled in compliance with EC Regulation 1221/2009-Emas*

COMPILED BY	CHECKED BY	APPROVED BY
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## Introduction

This document is the *Environmental Statement* of Principe di San Daniele (San Daniele del Friuli) and has been compiled in compliance with Regulation (EC) 761/2001-Emas.

The purpose of the document is to:

- provide the public and all other interested parties with information on the Site's environmental standing;
- demonstrate the Company's continued attention to improving its environmental performance, maintaining open communication regarding the results it has achieved and the new goals it has set itself.

The *Environmental Statement* also contains information on the Site, its activities, the Company and in particular its Environmental Management System, implemented in accordance with the provisions of Standard UNI EN ISO 14001 (Certification renewed in March 2009; Certificate No. 50 100 8567 issued by TÜV Italia s.r.l.).

This document was:

- compiled by: Elena Mitri and Chiara Patthey, Emas Representatives for the San Daniele SpA plant;
- checked by: Stefania Ottaviani, Manager for the Group's Environmental Management System;
- approved by: Vladimiro Dukceovich, Managing Director;
- ratified by: TÜV Italia srl - Via Carducci 125 - SESTO S. GIOVANNI (MI) (accreditation no. IT-V-0009)

The Site's *Environmental Statement* shall be checked and validated 3 years from its date of issue. Annual revisions and/or information shall be ratified in the interim by the environmental verifier.

## Information for the public

Principe di San Daniele SpA has made this *Environmental Statement* available to the public and other interested parties in order to establish open dialogue on the Site's environmental performance. The document is accessible on the website [www.principefood.com](http://www.principefood.com); it is freely available upon request in paper format.

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## **KIPRE HOLDING SPA**

The KIPRE group is a dynamic entity operating on the meat products market, which has expanded considerably over the past five years through the acquisition of competitor companies and, in particular, its investment in expanding the capacity of its systems: selective investment into best technology available on a global scale (also from an envi-

ronmental standpoint). The Group's strategic and administrative management is based in San Dorligo della Valle (near Trieste, Italy). It employs about 300 people. Its key market extends nationally, in Europe and internationally.

The KIPRE group's Board of Directors has approved a project to implement certification to ISO 14001 standard with Emas rating.



## The Factory

<b>Name of the Company</b>	<b>Kipre Holding S.p.A. Principe di San Daniele S.p.A. Factory</b>
<b>Address</b>	Via Venezia, 222/224
<b>City</b>	33038 – San Daniele del Friuli
<b>Province</b>	Udine (Italy)
<b>Land register data</b>	Page: 22 Lots: 44, 45, 224
<b>NACE code</b>	10.11
<b>Sector of activity</b>	<p>Its general business is the production of:</p> <ul style="list-style-type: none"> <li>➤ San Daniele DOP raw ham (on the bone, boned, sliced);</li> <li>➤ raw ham (on the bone, boned, sliced);</li> <li>➤ slicing of Italian meat products (raw ham, cooked ham, salami, loin pork roast, bresaola, mortadella)</li> </ul> <p><i>The factory's layout is shown in Section 8, attachment 1.</i></p> <p><i>The production cycle flow diagram is shown in Section 8, attachment 2.</i></p>
<b>Number of employees</b>	120
<b>Working schedule</b>	8 hours, 5 days/week
<b>Overall area</b>	<p>44,230 m<sup>2</sup> of which:</p> <ul style="list-style-type: none"> <li>▪ 26% is developed (production rooms, utilities, stores, offices);</li> <li>▪ 34% is occupied by roads and inner courtyards</li> <li>▪ 40% is occupied by areas of greenery</li> </ul>
<b>Indoor area</b>	11,590 m <sup>2</sup>
<b>Floor area</b>	28,301 m <sup>2</sup>

In 2010, new indicators called core indicators have been introduced relating to the following environmental issues: energy efficiency, efficiency of materials, water, waste, biodiversity, emissions. They represent the relationship between **A/B**, where **A** is a figure indicating consumption/total annual impact in the defined sector and **B**, which instead indicates the total annual production by the company.

The values of the various indicators are reported in the relative attachments. The production process is represented by the production cycle reported in Section 8, attachment 1.



## Biodiversity

A new indicator has been introduced to represent this parameter. In this case

**A** is represented by the use of land expressed in m<sup>2</sup> which corresponds to the global surface value.

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

*The relative value of the indicator is shown in the table in Section 8, attachment 12.*



## Suppliers and products used

Suppliers of products, from which materials for production and utilities are selected, are chosen on the basis of the services they provide and which may influence both quality and the environment.

Auxiliary products used for processing are provided with a safety information sheet which is formally evaluated (also from an ecological standpoint) before being used.

All necessary precautions are taken to ensure the safety of people and the environment during storage and handling of the substances the Company uses, which are also monitored. The Factory does not pose a significant fire risk considering the quantities and types of substances used (pursuant to art. 6 and 7 of Legislative Decree no.

238/2005 as amended). System procedures require evaluations to be repeated and revisions made if organizational and legal changes are detected.

In 2010, a new indicator has been introduced which assesses the efficiency of the materials.

It is defined as the ratio **A/B**:

**A** is represented by the flows of annual mass of the different materials used.

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

*The annual mass flows of the different materials used since 2009 are shown in the table in Section 8, attachment 10.*



## Utilities/electricity

The table below shows the main utilities/electricity needed to operate the production systems and make the product, and con-

tribute to optimizing consumption and protecting the environment.

Utilities/Electricity	Use
<ul style="list-style-type: none"> <li>▪ Internal network with reduced <b>methane</b> distribution connected to the Enelgas network (permanent contract)</li> </ul>	<p>To power a steam unit and two heating plants</p> <p>Heating for Factory rooms with services/bathrooms.</p>
<ul style="list-style-type: none"> <li>▪ Electrical cabins to transform electricity from medium to low voltage and distribute it to the systems (from 20,000 to 400 volt).</li> </ul>	Utility power and lighting
<ul style="list-style-type: none"> <li>▪ Diesel</li> </ul>	To power the fire pumps
<ul style="list-style-type: none"> <li>▪ Well (water)</li> </ul>	Water for bathrooms – production cycle – fire extinguishing
<ul style="list-style-type: none"> <li>▪ Waterworks</li> </ul>	Emergency management (in the event the wells are contaminated)
<ul style="list-style-type: none"> <li>▪ Waste pumping stations</li> </ul>	To draw water and pump waste water to the consortium's purifying system
<ul style="list-style-type: none"> <li>▪ Chemical-physical purification system</li> </ul>	To separate solids suspended in sewage water.
<ul style="list-style-type: none"> <li>▪ Above ground tanks</li> </ul>	To accumulate well water and softened water and store salt



## Environmental policy

The Factory Management adheres to the environmental policy expressed by the Management at the KIPRE Group.

Without compromising its commitment to performing/managing activities with a view to continually improving its environmental performance, the Company is committed to providing the public and other interested parties with information on the Company's impact and environmental performance, in line with EC Regulation 761/2001 – Emas.

### ENVIRONMENTAL POLICY STATEMENT

The *KIPRE Group*, aware of its role and responsibility within the community and the environment where its factories operate, has defined an environmental policy and has undertaken a commitment to implement it, distributing it to staff members and making it available to the public. Respect and protection for the environment and the quality of products and services equally shape the foundation for the *KIPRE Group's* operating and market strategy.

Fundamental prerequisites for our business, products and advancement are:

- Compatibility with the surrounding environment (including the visible impact of the Factories).
- Compliance with applicable legislation and environmental regulations as well as with the Standards the Company voluntarily adheres to.
- Approach towards the ongoing improvement of environmental performance and pollution prevention.

These prerequisites become specific objectives and targets for improvement revised on an annual basis.

### Guiding principles

#### A. Products, Processes and resource Management

We develop and make products with a focus on quality and on minimizing the ecological impact of production, use and disposal.

We evaluate the risk of any environmental issues that may arise before implementing new activities, processes and systems.

We are committed to careful energy management and to optimising the use of natural resources and raw materials. We use the best technology available and economically accessible.

#### B. Minimising the Factory's ecological impact

We strive to evaluate, control and reduce the incidence of our work on the various environmental components bearing in mind the significance of ecological impact factors in relation to possible manoeuvring.

#### C. Training

We plan and provide training for Personnel performing activities which have or which could have an impact on the environment, preparing them and making them aware of how to perform their work safely and in an environmentally responsible manner.

#### D. Suppliers

Suppliers are encouraged to implement a suitable environmental protection policy.

#### E. Emergencies

Emergency procedures are in place to guide response to potential accidents or other unforeseen events, emphasizing our concept of prevention by analysing risks and adopting suitable preventive measures. These may be reviewed and revised in light of events that may occur and/or if new activity, products and processes are developed.

#### F. Information and communication

We inform parties concerned of the environmental aspects of our work and we are committed to pursuing an open dialogue, ensur-



ing absolute transparency with regard to ecological performance. The environmental statement and any amendments will be made available at the Principe di San Daniele Fac-

tory, as we strive to maintain open communication on the results we achieve and the new objectives we set for the future.

***Managing Director***

*Mr. Vladimiro Dukceovich*

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## The Environmental Management System

The Principe di San Daniele factory manages production and support systems, with complete respect for people and the environment. In pursuit of this, the commitment of the Top Management in its quest to implement an environmental management system compliant with UNI EN ISO 14001 standards is essential. It has made the necessary resources available for this purpose, by:

- contributing to protecting the environment and preventing pollution coherently with needs in the social and economic context where the Factory is based;
- establishing, documenting and making available an environmental policy and ensuring it is properly adhered to;
- identifying environmental aspects associated with activity, products and services and then determining their environmental significance;
- creating the conditions to be able to supply tangible evidence of attention and compliance with applicable Legal Requirements, as well as with the voluntary Standards the Company adheres to;
- identifying priorities for intervention and establishing, in line with periodic reviews of the EMS by Top Management, appropriate objectives and targets for improvement;
- providing evidence to Interested Parties that a concrete company commitment exists to meet what is expressed in the policy, objectives and goals.
- maintaining and extending environmental management system certification to include external certification;

- maintain registration for the Factory in compliance with EC Regulation 761/2001 – Emas.

The descriptive and current documentation pertaining to the Environmental Management System refers to the Integrated System of Environmental Management and Quality for which secondary and sub documents exist to regulate considerations and operating aspects of the system.

The responsibilities, primary tasks and interaction with the employees who perform the activity who have an influence on environmental management have been defined and provided to relevant Departments, who have also been provided with the necessary resources.

Personnel at the Factory are trained and are involved in activities devised to raise awareness and pertaining to communication instruments to ensure adequate measures remain in place to protect the environment and play an active role in improving environmental performance, as well as observing criteria that should be in place if an emergency situation should arise.

In order to establish whether the implemented EMS is compliant with the programme and has been correctly applied and maintained, internal audits were conducted and documented in accordance with specific programmes and procedures. The auditing cycle is planned with consideration for the significance of environmental aspects in order to ensure that all the coding system activities are verified annually. The results of the audit may prompt corrective or prevention measures, where applicable.

### General considerations

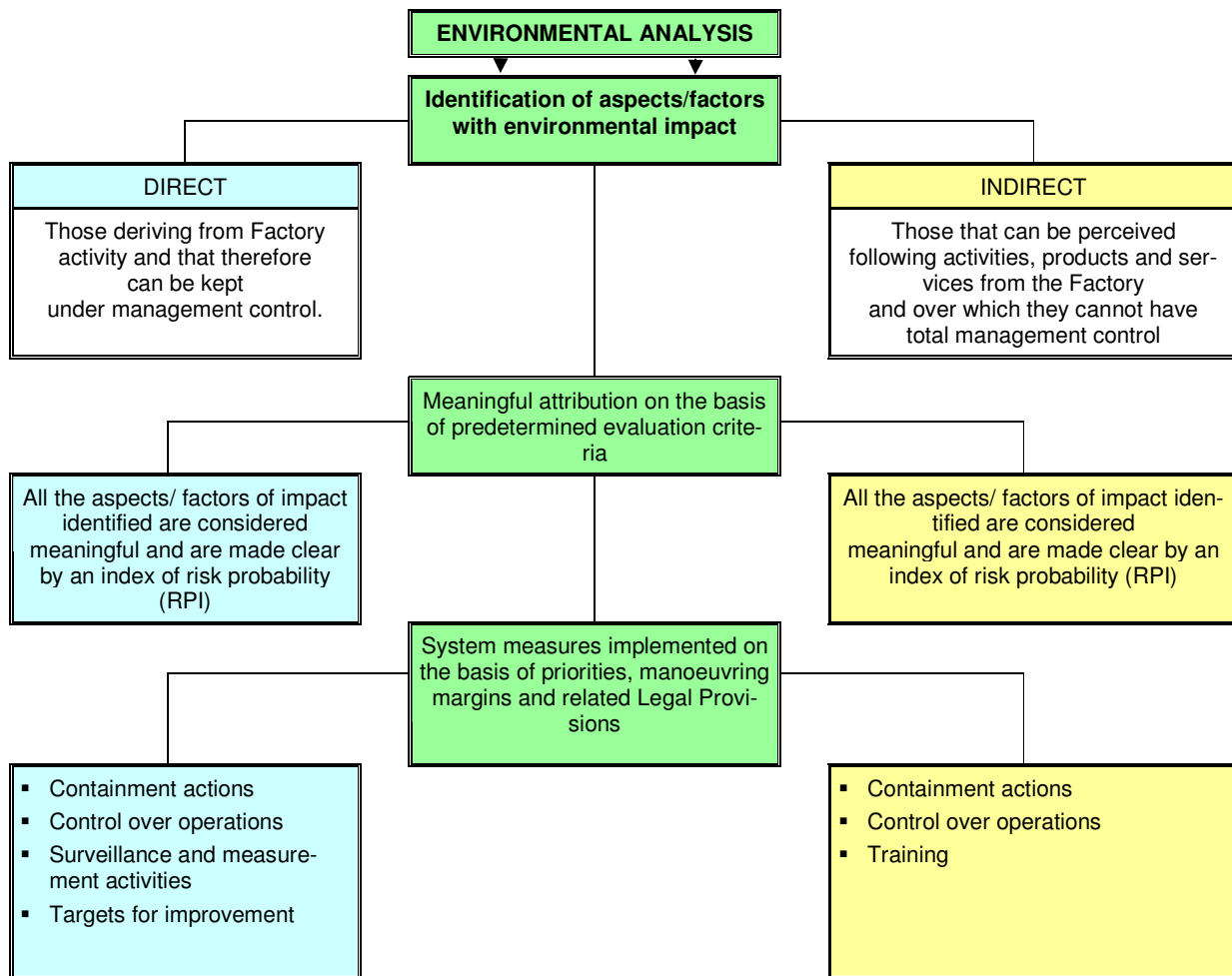
Environmental analysis has revealed all the environmental aspects (direct and indirect) associated with activity, products and services at the Principe di San Daniele factory in Friuli.

Associated impact factors were linked to such aspects and, on the basis of performance evaluation criteria, they were attributed

an index of significance to determine which are the most important for:

- preparing the Environmental Management System;
- focusing measures and commitments for the continued improvement (objectives and targets) to possible manoeuvres

The diagram below shows the process logic.



The next points in this Section will present identification methods and evaluation criteria adopted with regard to direct and indirect environmental aspects. Moreover, for each as-

pect/impact factor considered, grading, management and control information is given.

## Environmental aspects

### Identification methods

Factory activities are divided in a number of associated sub-processes according to the Areas where they take place for the purposes of identifying environmental aspects. Associated impact factors are linked to each aspect identified (for example, emissions into the atmosphere, waste etc).

*Environmental aspects* contained in Appendix A, point A.3.1 of EMAS Regulation, and other *environmental aspects* were taken into consideration with regard to the Company activity.

The following **direct environmental aspects** were considered:

- ❖ Atmospheric emissions
- ❖ Noise
- ❖ Waste and packaging
- ❖ Water discharges

- ❖ Electromagnetic emissions
- ❖ Odours
- ❖ Water and energy resources
- ❖ Contamination of the soil and subsoil
- ❖ Harmful and inflammable substances

**Indirect environmental aspects** considered relate to the activities of carriers and third parties and are the following:

- ❖ Atmospheric emissions
- ❖ Noise
- ❖ Waste and packaging
- ❖ Contamination of the soil and subsoil

The following Table shows the *environmental aspects*, subdivided into *direct environmental aspects* and *indirect environmental aspects*

<b>Environmental Aspects</b>	<b>DIRECT</b>	<b>INDIRECT</b>
Atmospheric emissions (heating plants – substances harmful to the ozone and greenhouse gasses)	X	
Atmospheric emissions (substances harmful to the ozone and vehicle exhaust)		X
Noise	X	X
Waste and packaging	X	X
Water discharges	X	
Electromagnetic emissions	X	
Odours	X	
Water and energy resources	X	
Contamination of the soil and subsoil	X	X
Harmful and inflammable substances	X	

Environmental aspects may be generated in normal and/or anomalous and/or emergency conditions.

- Normal conditions refer to all those activities that are normally and continuously performed by the company;
- Anomalous conditions are intended as all those extraordinary maintenance activities that occur in the company or
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phenomena that do not happen all the time and which however cannot be categorized as emergency conditions;

- Emergency conditions refer to those situations that occur in unforeseen and serious circumstances, the impact of which must be managed and limited.

**Criteria for evaluating significance**

The degree to which aspects are significant is evaluated on the basis of the following.

1. The **occurrence/probability** with which the aspect/impact occurs; it is estimated on a scale of 1 to 4, on the basis of the values indicated in the diagram below:

Evaluation of the PROBABILITY that the event will occur		
Case record	Value	Assessment
Activity of scarce relevance in terms of quantity and quality (e.g. emissions of little regard not containing dangerous substances, limited production of urban waste) <u>and generated sporadically</u>	1	Remote
Activity of little relevance in terms of quantity and quality (e.g. emissions of little regard containing dangerous substances or otherwise, but which are lower than the detection threshold, significant production of special, non-dangerous urban waste) <u>generated regularly</u>	2	Low
Activity of little relevance in terms of quantity and quality (e.g. significant emissions of dangerous substances or otherwise, but for which adequate abatement equipment is in place, limited production of hazardous urban waste) <u>generated normally</u>	3	Moderate
Activity of much relevance in terms of quantity and quality (e.g. significant emissions of dangerous substances or otherwise, for which adequate abatement equipment is not in place, production of large quantities of dangerous urban waste) <u>generated frequently</u>	4	High

2. The **severity** of the consequences of the impact on the environment is estimated on a scale of 1 to 4, on the basis of the values indicated in the diagram below:

Evaluation of the SEVERITY of the impact		
Evaluation	Value	Assessment
Very scarce relevance internally or externally to the Company (e.g. few emission points, effects not detectable in the workplace and externally, no odours or dust)	1	Minor

Scarce relevance internally or externally to the Company (e.g. emissions of low significance, effects detectable in the workplace and externally, no odours or dust)	2	Important
Relevance internally or externally to the Company (e.g. significant emissions with effects detectable in the workplace and externally but with removal systems in place, odours and dust present)	3	Serious
Great relevance internally or externally to the Company (e.g. many emission points with effects detectable in the workplace and externally, odours and dust present)	4	Very Serious

3. The **detection** is estimated, evaluating the capacity with which the management and control system in place is able to avoid a possible impact, on

a scale of 1 to 4 on the basis of the criteria indicated in the diagram below.

DETECTION evaluation		
Operating and control methods	Value	Assessment
Presence of written operating instructions, maintenance plans, adequate technology and suitable monitoring systems with frequent controls	1	Very high
Adoption of operating instructions that may not be written, media technology and suitable monitoring systems with periodic controls	2	High
Absence of operating instructions, informal periodic maintenance, occasional training for personnel, occasional controls	3	Moderate
Absence of operating instructions, unprogrammed maintenance, management based only on experience, occasional or non-existent controls	4	Low

If data is unavailable, or if doubts exist with regard to the specific impact of a situation, a more cautious evaluation must be considered with the highest score.

**Result from 1 to 10**

No Corrective Action is necessary, but the performance should be monitored from an environmental stance in function of other planned activities.

4. The **Risk Priority Index (RPI)**, is defined as Severity x Occurrence x Detection; the risk should be calculated for each environmental aspect and shown in the summary module (See Section 8. tables in attachments 3 and 9).

**Result from 11 to 25**

Operational action must be taken to reduce the evaluation index and/or targets for improvement; it remains important to carefully calculate and limit prevention costs.

In this context, operating control must be imposed as a management method including controls, supervision and auditing, procedures and instructions for operating control for those activities that, unless planned, may

Depending on the RPI calculated, the following actions should be taken:



compromise efforts to achieve established objectives.

Additional actions must be defined where the consequences of the impact are extremely damaging.

**Result from 26 to 48**

Operating action must be undertaken to reduce the evaluation index and targets for improvement to reduce the risk index.

Additional actions must be defined to carefully monitor the state of progress of the programme and targets for improvement

**Result from 49 to 64**

Corrective Action must be taken to reduce the scope of the impact as soon as possible.

Where new processes are involved, the activity in question should not be undertaken unless the values are reduced (RPI lower than 49).

On the basis of the Risk Priority Indexes calculated and possible margins for manoeuvring, management criteria applicable to the aspect/impact factors are:

- Containment actions.
- Control over operations.
- Surveillance and measurement activity
- Targets for improvement.

## A) Direct environmental aspects

Important parameters of identified environmental impact are shown below along with performance indicators (period 2006/2009).

### 1. WATER AND ENERGY RESOURCES

#### *Electricity and heating energy (Methane and gas)*

**Electricity** is supplied at medium voltage at 20 KV transformed by two low-voltage cabins to 400 Volt.

Moreover, a special software is available to calculate the costs of the electrical system on an ongoing basis. Where the cost calculated is outside the range of 0.85-0.95, an electronic controller triggers the re-phasing unit, switching on or off the condenser coils to bring the parameter value within the indicated range.

**Methane** is used in the production cycle as well as to heat the buildings.

**Gas** is used exclusively as fuel for the fire extinguishing system.

Consumption is controlled on a monthly basis, making reference to the electricity statement and reading the methane meter.

The following indexes were used to verify the energy consumption trend before 2009:

**the Consumption Index (I)** calculated as follows

for electricity:

$$I = kW/h / Kg$$

Whereby:

- Kg = Kg of finished product shipped in the quarter in question.
- KW/h = consumption of electricity in the quarter in question.

for methane:

$$I = m^3 / Kg$$

Whereby:

- Kg = Kg of finished product shipped in the quarter in question.
- m<sup>3</sup> = cubic metres of methane consumed in the quarter in question.

In 2010, following revisions to the EMAS regulation, a new indicator has been introduced which replaces the previous ones and which is referred to as **energy efficiency**. It is defined as the ratio **A/B**:

**A** is represented by the sum of:

- total direct energy consumption: indicates the total annual energy consumption expressed in ton oil equivalent (toe);
- total renewable energy consumption: indicates the total annual energy consumption (electricity and heating) produced by renewable sources expressed in ton oil equivalent (toe);

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

The quantity of fuel and energy in Toe is converted using set factors recognised as being valid.

*The table in Section 8, attachment 3 shows water consumption in the period 2006-2009. Previous indexes are used for the period 2006-2008, while both indicators are used for the year 2009.*

*The quantity of fuel and energy converted to toe is calculated using set factors of recognised validity.*



**Major applicable Legal Provisions**

**Parliamentary Statute no. 10 of 09/01/1991**

– Provision for implementing the national energy Plan on rational use of energy, energy saving and developing renewable sources of energy.

**Presidential Decree no. 412 of 26/08/1993**

– Regulation containing provisions for the engineering, installation, operation and maintenance of the heating systems for the purposes of limiting consumption of energy pursuant to art. 4, paragraph 4, Law no. 10 of 09/01/1991 as amended.

**Presidential Decree no. 551/99-** Amendments to Presidential Decree no. 412/93 on heating systems for the purposes of limiting energy consumption.

**Ministerial Decree 17/03/2003-** Update of attachments F and G of DPR no. 412/93.

**Water resources**

**Well water**

There are two operational wells from which water is drawn for routine factory use: the characteristics are described in the following Table.

	<b>Artesian well 1</b>	<b>Artesian well 2</b>
<b>Description</b>	Factory courtyard	Factory courtyard
<b>Use</b>	Production cycle	Production cycle
<b>Depth (m)</b>	151	151
<b>Nominal capacity (m<sup>3</sup>/h)</b>	47 m <sup>3</sup> /h	20 m <sup>3</sup> /h
<b>Litre gauge</b>	Present	Present
<b>Year of construction</b>	1970	1988
<b>Authorization</b>	Decree no. ALPUD/B/674/IPD/2909 Valid until 31/12/2017	Decree no. ALPUD/B/674/IPD/2909 Valid until 31/12/2017

Water consumption in the evaporation towers is checked on a daily basis and consumption of the water drawn from the two wells is checked on a monthly basis.

The following index was used to verify the energy consumption trend before 2009:

$$I = m^3 / Kg$$

Whereby:

Kg = Kg of finished product shipped in the quarter in question.

m<sup>3</sup> = cubic metres of water from the well

It should be noted that during the summer the evaporation towers consume greater quantities of water to optimize refrigeration in the cells.

Every five years the water filter/softener unit is replaced or reconditioned.

In 2010, following revisions to the EMAS regulation, a new indicator has been introduced which replaces the previous one. It is defined as the ratio **A/B**:

**A** is represented by total annual well water consumption indicated in m<sup>3</sup>.

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

**Water from the Waterworks**

Water from the waterworks is used exclusively in emergency situations, meaning when the water normally used from the wells is contaminated.

Consumption of the water from the waterworks is checked on a monthly basis in order to check for any leaks in the water system. The Environmental Manager analyses data every month.

If the Environmental Manager discovers unjustified water consumption, he may pursue analysis on the possible causes for the consumption. The Environmental Manager therefore shall take steps for what was established

as with regard to management of the non-conformities.

In 2010, following revisions to the EMAS regulation, a new indicator has been introduced which replaces the previous one. It is defined as the ratio **A/B**:

**A** is represented by total annual water consumption from the waterworks indicated in m<sup>3</sup>.

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

*The table in Section 8, attachment 4 shows water consumption in the period 2006-2009. Previous indexes are used for the period 2006-2008, while both indicators are used for the year 2009.*

### **Major applicable Legal Provisions**

**Royal Decree no. 1775 of 11/12/1933** – Amalgamated law on water and electrical systems.

**Regional Law (Friuli Venezia Giulia) no. 28/91** – Regional provisions on identifying, using and protecting water resources for human consumption.

**Government Legislative Decree no. 275 of 12/07/1993** – Reclassification of the concession of public water.

**Law no. 36 of 05/01/1994** – Provisions on water resources

**Presidential Decree no. 238 of 18/02/1999** – Regulation on the implementation of the provisions of Law no. 36 of 05/01/1994 on water resources.

**Legislative Decree no. 31 of 02/02/2001-Implementation of Directive no 98/83 on the quality of water destined for human consumption.**

## **2. WATER DISCHARGES**

### **Consortium purification system**

The Company, like other ham producers is a member of the San Daniele ham consortium. The services offered by the Consortium include purification of waste water produced by the Consortium Companies. Waste water is carried to a central purification system to be purified and then transported into the drain system belonging to the Municipality of San Daniele.

On 02/02/2006 Ref. No. 2889, the Municipality of San Daniele authorized the Consortium to convey water from the Company's purification system into its drainage system. The Consortium is therefore authorized to discharge its water.

The Consortium-Companies Agreement Protocol entered into on 15/02/1993 and still current specifies that when the level of consortium water exceeds the limits established by law, Consortium Companies shall respond in accordance with their specific responsibilities.

### **Company Water Drainage**

The main sources of waste water exiting the Factory are:

- **Process water.** The waste water from washing hams, and the water collected by the indoor traps; the water from the traps contains saline residue and substances such as detergents and disinfectants, deriving from the rooms being washed every evening.
- **Cooling water.** This is water from the heat exchanger and that does not dilute process water.
- **Water from bathrooms** flows into respective wells fitted with Imhoff tanks that are emptied by a qualified sewer company on a regular basis.
- **Rainwater.** Rainwater is carried by pipes to the consortium purification system.

All the water flows into two decanting tanks of different capacities.

The decanted water from the tanks flows into the consortium's purification system.

Periodically, a company specialised in cleaning tanks suctions off the greasy residue from the water.



The quantity of waste water discharged annually is calculated on the basis of a lump-sum estimate of 70% of the overall water collected a year.

The quantity of water in the period 2006-2009 is shown in the table in Section 8, attachment 6.

**New Water Drainage**

The company cannot place new water drainage unless it is authorized to do so by the pertinent bodies. In this case, the procedure set out by law or the Consortium’s Regulation shall be implemented.

**Water Drainage maintenance**

The waste removal pumps on the Consortium’s tanks are Serviced annually

**Periodic controls of waste water**

The following table shows the parameters and occurrence of analytical controls performed on samples from the inspection well to which all the industrial waste and rain water flow.

The Environmental Manager checks, signs and dates all the “Test Reports” from the external Laboratory.

**Limitations on waste water**

The Company, discharging into the drainage system of the San Daniele Ham Consortium, must adhere to the values set out in the Table below, which shows the values set out in Attachment 5, Legislative Decree no. 152/99 for discharging into the drainage system, which are:

Parameter	VALUE	Danger limitations	UM	Frequency of analysis
pH	5.5-9.5	-----	pH unit	Every six months
BOD <sub>5</sub> (as O <sub>2</sub> )	≤ 250	225	mg/l	
COD (as O <sub>2</sub> )	≤ 500	450	mg/l	
Suspended Solids	≤ 200	180	mg/l	
Total surfactants	≤ 4	3.6	mg/l	
Total phosphorus (as P)	≤ 10	9	mg/l	
Ammoniacal nitrogen (as NH <sub>4</sub> )	≤ 30	27	mg/l	
Nitrous Nitrogen (as N)	≤ 0.6	0.5	mg/l	
Nitric Nitrogen (as N)	≤ 30	27	mg/l	
Animal and vegetable grease and oil	≤ 40	36	mg/l	
Chlorides	≤ 1200	1080	mg/l	
Total hydrocarbons	≤ 10	9	mg/l	

**Key:**

- VLR Value determined by the law (Legislative Decree 152/06 Table 3,

attachment 5 part III – Limits for discharge in the drainage system)

- Warning limit Limit value calculated as 90% of VLR
- U.M. Unit of Measurement

Where control analyses show values near the warning limit, the Environmental Manager will activate necessary actions for the limits to be respected.

If the Environmental Manager finds that the legal limits have been exceeded, he shall implement the same measures as for non-conformity.

*The result of annual analyses in the period 2006-2009 is shown in the table in Section 8, attachment 6.*

#### **Major applicable Legal Provisions**

**Regional Law of the Friuli Venezia Giulia Region no. 71/1979** – Determining the rates for the collection, removal and purification of waste water

**Legislative Decree no. 152 of 2006-part III** – Provisions on protecting water from pollution and implementation of Directive 91/271/EEC on the treatment of urban waste water and Directive 91/676/EEC on protection of water from pollution from agricultural sources.

**Regional Law of the Friuli Venezia Giulia Region no. 17/2002** – Provisions on the new

Others types of waste may occasionally be produced, for example following extraordinary maintenance; management of this waste is described below.

The various types of waste are managed separately, in accordance with the EWC code, in the following stages:

- Production and collection;
- Analysis of classification;
- Temporary deposit (stacking);
- Load registration;
- Conferral and registration of load;
- Annual waste declaration on the Modello Unico di Dichiarazione (MUD – Single Declaration Form).

It is Principe's responsibility to manage and transfer/dispose of the waste, and for this it operates through authorized companies with which it has entered a contract.

*organizational and practical structure on defending the soil and the waterways domain.*

### **3. WASTE**

The production process and associated processes generate waste, mainly non-harmful waste, in quantities requiring controlled management.

Waste is analysed and classified by type, collected in special marked/equipped areas and removed regularly by the authorized Service Provider.

Door-to-door differentiated waste collection was introduced in the area (municipality) in November 2008:

- Dry non-recyclable waste
- Glass
- Cans
- Organic waste
- Paper
- Plastic

A number of coloured containers have been placed in different parts of the factory, offices and dining rooms in addition to the differentiated waste system already in place at the company.

The main types of waste produced at the company are shown in Section 8, attachment 8.

The factory is a registered member of SISTRI, a system monitoring urban waste signalling a new approach to the management and transportation of waste.

#### **Annual waste declaration on the Modello Unico di Dichiarazione (MUD – Single Declaration Form).**

The Environmental Manager (EM), in collaboration with the External Consultant, where appointed, compiles the annual MUD (Italian Law no. 70/94)

The Environmental Manager compares data reported in the *Load and Unload Registry* with data reported on the *forms* to compile the MUD correctly.

The Manager presents the MUD to the local Chamber of Commerce by the date set out by law and pays tax due.

In 2010, following revisions to the EMAS regulation, a new indicator has been introduced.

It is defined as the ratio **A/B**:

**A** is represented by total annual waste produced (indicated in tons).

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

*The table in Section 8, attachment 7 sets out the types of waste produced in the years 2006-2008.*

*The indicator is as above for the year 2009, moreover partial data is provided for hazardous and non-hazardous waste.*

#### **Major applicable Legal Provisions**

**Law no 70 of 25/01/1994** - Provisions to simplify environmental, health and public health obligations, and implementing the eco-management and ecological audit system

**Ministerial Decree of 05/02/1998** – Identification of non-harmful waste subject to waste recovery simplified procedures in accordance with articles 31 and 33 of Legislative Decree no. 22 of 05/02/1997.

**Ministerial Decree no. 148 of 01/04/1998** - Regulation on approving the waste load and unload registration form in accordance with articles 12, 18, paragraph 2 (m), and 18, paragraph 4 of Legislative Decree no. 22 of 05/02/1997.

**Legislative Decree no. 95 of 27/01/1992**- Implementation of Directive no 75/439/EEC on the disposal of used oil.

**Decree of the Minister of Industry no. 392 of 16/06/1996** – Regulation on technical provisions on the disposal of waste oils.

**Ministerial Decree no. 161 of 12/06/2002** - Implementation regulation of art. 31-33 of Legislative Decree no. 22 of 05/02/1997 on recovering hazardous waste.

**Legislative Decree no. 152 of 03/04/2006**- Environmental provisions - Part IV

#### **4. HARMFUL AND INFLAMMABLE SUBSTANCES**

Each substance and/or product being used by the Company must have a *Safety Card*. The substances and/or products are kept in areas that are specially selected and equipped.

When selecting storage areas, special attention is placed on making sure the products do not come into contact with non-compatible products (acids and bases, oxidizing and combustible substances, etc).

The substances and/or products are - where possible - stored in their original labelled containers.

Where this is not possible, the new containers should clearly indicate the content.

In order to keep the quantity of flammable products under control, quantities stored are assessed on a monthly basis, in special areas, of the following products:

- New and used lubricating and hydraulic oil

The maximum limits for these, as set out in Ministerial Decree of 16/02/1982 and art. 4 L. 26/07/1965, no. 966 are as follows:

- New and used lubricating and hydraulic oil: 0.5 m<sup>3</sup> (with flashpoint ≥ 65°C)

These limits must be considered when planning purchases.

The recipients of substances and/or chemical products in the liquid state used by maintenance personnel, are placed inside the containment tank at a capacity that at least fills the largest container or, if more than one container is stored at the same time, equal to at least a third of total volume, but however not less than the capacity of the largest container.

Storage of substances/products takes place in areas protected from atmospheric agents.

In the course of its activity, the Company uses LPG gas contained in special tanks.

Overall, the tanks contain less than 75 kg of LPG gas.

When a tank is empty, it is immediately replaced with a new container with the same

quantity of gas in order not to exceed the total quantity of gas stored.

In handling the substances and/or solid and/or liquid products, all necessary precautions are taken to contain the risk of spillage. If a spillage does occur, Emergency Procedures shall be implemented.

#### **Major applicable Legal Provisions**

**Parliamentary Statute no. 966 of 26/07/1965** Regulation on duties, methods of payment and salaries for the national Fire Service for pay services.

**Ministerial Decree of 16 February 1982** Amendments to the ministerial decree of 27 September 1965, on determining businesses subject to inspections by fire prevention authorities.

**Presidential Decree no. 37/1998** – Renewal of the fire prevention certificate

### **5. ATMOSPHERIC EMISSIONS**

Emissions subject to authorization within the field of application set out by Legislative Decree no. 152/2006 part V are not present.

The Factory's atmospheric emission can substantially be traced to

- Heating systems
- Venting from the steam generator
- Venting from the chemical dehumidifier
- Venting from the air treatment unit in the clean room
- Venting from the evaporation tower
- Venting from the dishwasher used to sterilize knives used for boning and to wash scales and trolleys
- Venting from hot washing the hams
- Venting from the package sterilizing machine

#### **Heating systems**

Pursuant to Legislative Decree 152/2006, heating systems are not subject to authorization as required by art. 269 paragraph 14(c), being an activity producing pollutants of little significance and not subject to authorization, each heating system or boiler used in the production cycle and with power of less than 3 Mw if running on methane.

In the Company, there are 5 boilers with nominal power as follows:

- 2 boilers (old factory): 1047 kw/each
- 2 boilers (new factory): 581 kw/each
- Steam unit: 1395 kw

The boilers' performance and emissions into the atmosphere are checked half yearly and the amounts are recorded in the unit books.

The systems are also cleaned twice a year.

All the other venting emits steam only.

#### **Substances harmful to the ozone**

There are two categories of equipment in the Company:

- Refrigeration systems containing substances harmful to the ozone
- Electrical equipment containing greenhouse gas

#### **Refrigeration systems containing substances harmful to the ozone**

The controls that are performed on all refrigeration systems are shown in the *Table*. In addition to these controls, a module is kept updated reporting the quantities and location of the R22, CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>, Argon and Acetylene tanks in the Company.

Control	Frequency
Control of the liquid level (condensated gas)	3 times a week
Glycol pressure control in the accumulation tanks	3 times a week
Compressor and warning light manometer control	3 times a week
Seal control for joints and valves using “haloid” lamps and “leak detectors”	weekly
Check office air conditioners	yearly
Control of refrigerant gas leaks (unit books)	yearly

**Electrical equipment containing greenhouse gas**

The Company uses 12 electrical switches containing sulphur hexafluoride (SF6). These types of switches contain the insulating gas sulphur hexafluoride (SF6) at a pressure of 0.2 bar. This operating pressure is considered to be free from the risk of leaks:

Given the particular nature of the gas and its use (inside a switch) the seal can be checked only when it is destroyed.

Any leakage of the greenhouse gas is signalled by “out of service” by the power switch.

The factory also uses the following types of gas harmful to the ozone:

- R22
- R507A
- R134A

In 2010, following revisions to the EMAS regulation, a new indicator has been introduced.

It is defined as the ratio **A/B**.

Greenhouse gas emissions from combustion for the purposes of calculating greenhouse gas emissions take the following heating systems into consideration:

- Steam production
- Heating

Methane gas operated.

The quantity of greenhouse gas, represented by CO<sub>2</sub>, is calculated using the following formula:

$$CO_2 = Q_{gm} \times f_{em} \times f_{ox}$$

- **Q<sub>gm</sub>** = quantity of methane gas used, expressed in m<sup>3</sup>.

- **f<sub>em</sub>** = methane gas conversion factor expressed in Kg CO<sub>2</sub>/m<sup>3</sup>.
- **f<sub>ox</sub>** = oxidation factor of 0.995, which generates imperfect combustion.

The value is calculated annually based on monthly meter readings. This method has been applicable since 2009 and therefore there is no comparison data with prior years.

**A** is represented by Total annual emissions of greenhouse gas expressed in tons of CO<sub>2</sub> equivalent.

**B** is represented by total annual production, namely the value in kilograms of finished product made at the factory.

*Total annual greenhouse gas emissions since 2009 are shown in the table in Section 8, attachment 12.*

**Major applicable Legal Provisions**

*Presidential Decree of the Minister for the Environment of 21/07/1989 - Coordination guidelines and indications to the regions, pursuant to art. 9 of Law no. 349 of 8 July 1986, , to implement and interpret Presidential Decree no. 203 of 24 May 1988, on air quality regarding specific pollutants and pollution produced by industrial plants.*

*Law no. 549 of 28/12/1993 as amended – Measures to protect stratospheric ozone and the environment.*

*Ministerial Decree of 21/12/1995 – Regulations on methods for controlling emissions into the atmosphere by industrial plants.*

*Law no. 179 of 16/06/1997 – Modifications to law no. 549/93 on measures to protect the ozone layer.*

*Decree of the Minister of the Environment 25/08/2000 – Revision to sampling, analysis*

and evaluation methods, pursuant to Presidential Decree no. 203/88.

**Regulation (EC) no. 2037/2000 of 29/06/2000** – Substances that reduce the ozone layer updated by Reg. 1005/2009/EC  
**Ministerial Decree no. 60 of 02/04/02** – Implementing Directive (EC) of 22/04/1999 on air quality limit values for sulphur dioxide, particles and lead and Directive 2000/69/EC on air quality limit values for benzene and carbon monoxide.

**Legislative Decree no. 183 of 02/05/2004** - Implementation of Directive no 2002/3/EC on ozone in the air.

**Presidential Decree no. 147/2006** – Methods for controlling and recovering leakages of harmful substances in the ozone layer from refrigeration and air conditioning and heat pump equipment

**Legislative Decree no. 152/2006 – Part V**  
**EC Regulation 842/2006**  
**EC Regulation 303/2008**

## 6. NOISE

The Company's activities that can produce outdoor noise are in particular:

- Outdoor machinery
- Compressors
- Other technological systems used in different work stages

Outdoor machinery: There are a number of outdoor air conditioning system units. In particular, there are *cooling fans* operating 24 hours a day and *evaporation towers*.

Compressors: Some of the systems used are on the ground floor and some in the basement.

The compressors are located in closed rooms; this way any noise heard outside the Company is barely perceptible.

Technological systems: *The chlorination and water softening plant.*

The plant is situated inside a cement structure; this way any noise heard outside the Company is barely perceptible.

The Company performed an outdoor noise analysis on 21/09/2005 and did not detect any noise levels above legal limits.

On 06/11/2007, a new sound level detection measurement was performed for the points

affected by major system changes following the expansion of the factory.

The noise values detected were within legal limits.

Currently, the Municipality of San Daniele has not zoned the area pursuant to Prime Ministerial Decree (DPCM) of 14 November 1997 as the Friuli Venezia Giulia Region has not yet set out "*guidelines*" for the formulation of criteria for noise zoning in the area; therefore the limits set out in DPCM of 01 March 1991 are applicable.

Considering that the Company is located in an industrial area, the established limits are 70 dB Leq (A).

*The locations monitored and the results of the sound level in 2005 and 2007 are shown in the table in Section 8, attachment 9.*

### Major applicable Legal Provisions

**Prime Ministerial Decree of 01/03/1991** – Maximum limits for noise exposure in inhabited areas and outdoors.

**Law no. 447 of 26/10/1995** – Framework on sound pollution.

**Ministerial Decree of 11/12/1996** – Application of differential criteria for continuous production cycle plants

**Prime Ministerial Decree of 14/11/1997** – Determining limit values for sound sources.

**Resolution of the Regional Committee of Friuli Venezia Giulia 1690 of 06/06/1997** – Formalisation of operational criteria for recognition of the competent sound technician.

**Decree of the Minister for the Environment 16/03/1998** – Detection and measuring techniques for noise pollution.

**Government Legislative Decree no. 262 of 04/09/2002** – Implementation of Directive 2000/14/EC on environmental noise pollution of machinery and equipment operating outdoors.



### **7. ODOUR**

This risk may be determined by an accidental obstruction in the drainage system.

This risk may be determined by problems associated with the operation of the cold store used to store waste products (bones and trimmings).

Such events can be traced to emergency management.

If such an event should occur, the following procedure should be followed:

- ✚ a specialist company should be contacted to remove the process waste
- ✚ the temporary process waste store room should be washed

### **8. CONTAMINATION OF THE SOIL AND SUBSOIL**

The risk of contaminating the soil and subsoil at the site is essentially associated with accidental losses that may occur during handling, storage and use of chemical products, oil and salt.

Instructions on procedures for the correct management of storage, use and handling

these products are coded in dedicated procedures. Any spillage and accidental dispersal that may occur comes under safety and emergency management.

### **9. ELECTROMAGNETIC EMISSIONS**

The only possible source of electromagnetic emissions at the factory is from the metal detectors located in the slicing department. Controls on the regular functioning of these instruments are performed annually by an external specialist.

Measurements are not taken as the sources are confined.

## B) Indirect environmental aspects

### Identification mode

Identification modes stem from analysis/evaluation of the Company's activities, products and services that it has control over, even partially, interacting with third parties in order to reduce the impact on the environment.

Identified indirect environmental aspects are shown in the table below:

<b>Indirect Environmental Aspects</b>	<b>Details</b>
Atmospheric emissions	Exhaust from vehicles belonging to suppliers and external maintenance providers Emissions from maintenance performed by external companies and/or construction work
Atmospheric emissions: substances harmful to the ozone.	Equipment belonging to third parties circulating inside the company perimeter, containing substances harmful to the ozone
Noise	Noise from maintenance operations performed by external companies and/or construction work
Waste and packaging	Waste produced by maintenance operations performed by external companies and/or construction work End-of-life of packaging used in the sale of Company products.
Contamination of the soil and subsoil	Maintenance operations performed by external companies and/or construction work

### Criteria for evaluating significance

The criteria adopted for evaluating the significance of these aspects takes into consideration environmental impact that may derive bearing in mind the following indexes:

- quantity in play;
- danger;
- Importance for Interested Parties.

The operating condition considered is only normal, as the organisation is not able to evaluate other eventualities.

The significance of the aspect considered may be "high" or "low". This result derives from the evaluations made for each index and ensuing measures performed within the terms indicated directly on Section 8, attachment 9 (this attachment also supplies

indications on factors with a potential impact associated with each indirect environmental aspect).

When the significance index is "high", the Company activates the prevention process aimed at minimizing the impact deriving from these aspects (for example evaluating and supervising Suppliers also with regard to their environmental performance) and it may define targets for improvements on these aspects.

When the significance index is "low", the Company will merely inform the parties involved (where applicable) and ensure supervision in order to avoid the aspects becoming significant.

### 1. ATMOSPHERIC EMISSIONS- NOISE-CONTAMINATION OF THE SOIL AND SUBSOIL- SUBSTANCES HARMFUL TO THE OZONE

All of these aspects are managed by the delivery to all external service suppliers and/or circulating products or operating within the company perimeter, of a special Form with the aim of informing and/or raising awareness among the recipients of *environmental aspects*.

A copy of the Form, signed by the Supplier, is kept in the Factory's archives.

### 2. WASTE AND PACKAGING

Management of "end-of-life" of packaging used in the sale of Company products is carried out as follows:

- Using material with a low environmental impact
- Marking packaging material with "dispose of properly"
- Marking packaging with "recycle where possible".

### Preparation for emergencies

*Environmental aspects* and potential emergencies and anomalies associated with them are listed below.

#### Emissions into the air

- Dispersal into the air of substances produced by fire
- Heating system combustion non-compliant with COS emissions
- Leakage of SF greenhouse gas<sub>6</sub>
- Leakage of R22, R507A, R134A harmful substances

#### Noise

- Legal limits of outdoor noise exceeded

#### Waste and packaging

- Breakage or spillage of powdered or solid waste;
- Breakage or spillage of waste liquid.
- Waste subsequent to fire
- Overproduction of trimmings from packaging

#### Water discharges

- Failure of the pumping station;
- Exceeding the limit values in control analysis

#### Electromagnetic emissions

- Loss of calibration for metal detector
- External metal detector maintenance ("anomaly" condition)
- Breakage of the armoured cement processing cabin following a natural disaster
- Fire in the processing cabin
- Oil leak in the processing cabin ("anomaly" condition)

#### Odours

- Accidental blockage in the drainage system
- Malfunction in the cold store for waste product (bones and trimmings)

#### Water and energy resources:

- Water leak in the distribution system;
- Malfunction in the chlorination system.
- Excessive electricity consumption
- Leakage of methane gas and water

#### Contamination of the soil and subsoil

- Accidental spillage of liquids containing harmful substances.
- Spillage of waste liquid on the soil.
- Spillage of hydraulic oils

#### Harmful and/or inflammable substances

- Breakage of the fuel/vehicle lubrication tanks
- Breakage or spillage of circuit oil/hydraulic controllers
- Breakage or leakage from tanks.
- **Spillage of detergents/disinfectants**

On the basis of the risks identified, the following measures have been implemented:

- Investment in system/structural solutions and means for risk prevention.
- Define instructions for the correct performance of risk activities and for first response in the case of an emergency.
- Define, and make known, the emergency plans to be adhered to in order to prevent and attenuate potential environmental consequences. It should be noted that in some cases the same plans in place for

safety should be followed (for example, fire prevention).

- Implement training on the theory and practical for personnel concerned, in competence and position, in order to know how to intervene in the case of purification system malfunctions, accidental spillages and fire.

### **Fire prevention**

A new fire extinguishing system, approved by the Fire Service, reference no. 8532 of 28/07/2006 was presented after the factory was expanded.

The Company has implemented the project and on 08/09/2006 it presented an application for the local authorities to inspect the site. The factory has not yet been issued a Fire Prevention Certificate.

**Major applicable Legal Provisions Ministerial Decree of 16 February 1982** Amendments to the ministerial decree of 27 September 1965, on determining businesses subject to inspections by fire prevention authorities.

### **General considerations**

The process of evaluating environmental aspects and periodically reviewing the SGA, the Management has established a plan to consolidate the standards it has already attained and to attain new targets for improvement coherent with the Company's environmental policy, and made the resources available to each Site to implement its plan.

The plan may include short-, medium- and long-term objectives, and is updated on an annual basis.

Targets for improvement in environmental performance, in addition to considering applicable Legal Provisions and the viewpoint of Interested Parties, are defined with consideration to Organizational strategy, technological available and economic sustainability. Each objective is associated with a particular programme to promote its success.

The environmental improvement results already attained by the Principe di San Daniele

**Legislative Decree no. 493/96** – Implementing of Directive 92/58/EEC on minimum requirements for the provision of safety and/or health signs at work.

**Ministerial Decree of 13.10.94** Approval of the technical regulation on fire prevention for the design, construction and operation of LPG deposits in permanent tanks of an overall capacity > 5 m<sup>3</sup>.

**Ministerial Decree no. 64/98** General fire safety and emergency management criteria in the workplace.

**Ministerial Decree no. 37/98** Regulation on fire prevention procedures.

**Ministerial Decree of 14.05.04** Approval of the technical regulation on fire prevention for the installation and operation of LPG deposits with overall capacity no greater than 13 m<sup>3</sup>

**Legislative Decree 81/2008** Amalgamated Law on Worker Health and Safety - Implementing article 1 of Law no. 123 of 3 August 2007, on health and safety in the workplace

Factory are outlined in several points of this document.

The table below shows the targets that the factory has currently set itself for the three year period 2007 – 2010.

More in detail, the **objectives met in 2007** were:

- A. Detection devices and timers were installed to manage lights being turned on and off automatically in the new changing rooms and in the staircase in the extension in order to minimize energy consumption.
- B. A twilight detector was installed to manage the outdoor lighting system with the addition of a timed switch that sections the number of lights lit in the night time.

Heat probes were installed in the new extension to circulate air using technological means during the process of maturing cured raw ham using outdoor air in place of glycol

- C. in dehumidifying the rooms.
- D. Management of the evaporation towers was optimised by replacing the old softeners, deemed too small, with new volumetric ones. This technological solution means the evaporation towers can be fed with water with a low concentration of calcium and at the same time it means smaller quantities of chemical products can be used to prevent calcium sediments.
- E. A new demineralising osmotic unit was installed to minimize the formation of sludge in the boiler coils. This helps reduce the frequency with which the boilers need to be cleaned and increases performance.
- F. A connection between the glycol water in the machinery room in the new extension and the machine room on the 2nd floor of the old factory was designed and installed. The first runs on new generation refrigerant gas, the second on R22 freon: this way, the older system remains on standby to be used only in the case of emergency.
- G. Workers were trained to handle dangerous substances: the training will in any case be repeated periodically.
- H. in particular, measurements have been repeated in the 4 outdoor locations monitored in 2005 to see whether there have been any changes in terms of acoustic impact after the extension to the factory was built.
- I. In some cells (finished boned product store) glycol water systems have replaced R22 Freon systems.

**In 2008, the following targets were met:**

- J. The objective planned for 2009 on replacing the evaporation condensers was moved forward to 2008 as the ex-

isting system was too old. One of the evaporation condensers was replaced with a new generation condenser offering greater yield and power and reducing water consumption. As this measure was brought forward, the company did not have the resources to complete the project as planned by adding heating to recover water to condition some cells.

- K. Administrative staff were trained on differentiated waste collection of paper and printer and photocopier toner. The training will be repeated periodically.
- L. Staff members were trained to handle and suitably dispose of waste from routine and extraordinary maintenance. The training will be repeated periodically.
- M. Evening sanitisation workers were trained. The training will be repeated should any changes occur in the subcontractor providing this service.
- N. A compressor was purchased to produce compressed air to recover the heat produced, the heat recovery circuit has not yet been hooked up.

**Postponed or modified objectives:**

- O. The objective for installing a permanent measurement system for conductivity of discharge water to monitor salinity was postponed from 2008 to 2009, pending evaluation of a number of plant proposals from different suppliers.

**PARTIAL IMPLEMENTATION**

A system was installed in the salting department to collect brines from 4 of the 5 salt cells. This in part reduces the salinity of the discharge water.

**In 2009, the following targets were met:**

- P. One of the two conductivity meters on the Frigomeccanica system in the extension was moved to the Travaglini evaporation tower monitoring system

in order to regulate flushing according to the saline concentration.

Q. To monitor the collection of bones adequately, a passage way was installed for practical maintenance on the deviators that carry the bones to their container. The switch management programmes were also changed.

R. Evaluation and subsequent purchase were made in 2009.

A new objective has been added for 2010, namely the building of a central plate cooling system for the slicing thermoforming machines. The circuit will recover the cooling water instead of discharging as is currently the case.

### Comments on targets

The measures introduced in previous years have improved performance and allowed for consumption and environmental aspects to be measured and quantified more accurately. In fact we estimated that the use of a motion detector and a light meter on a timer to turn off the staircase and changing room lights results in a 68.77% energy saving in this regard.

The calculation was made considering the light bulbs installed consume 8.7 Kw/hour: if they were to stay on for 16 hours a day (the factory remains operational for 2 work shifts of 8 hours each) after they are turned on in the morning and turned off at night, they would consume 139.2 Kw. With the use of timer we estimated that they remain on for an extra 5 hours a day consuming 43.5 Kw, with savings of about **68.77%**.

Installing an external switch to section the number of lights on in the night time means we can save about 63.64% of electricity for the purpose. Indeed, we have 26 bulbs on for an average of 11 hours/night with consumption of 75.9 Kw/hour; while another 11 lights stay on for only 4 hours a night with consumption of 19.2 Kw. If these lights were to stay on the entire night for 11 hours (like the

others) they would consume 52.8 Kw. Therefore savings amount to about **63.64%**.

In the case of energy saving using heat content probes to circulate air using technological means during the process of maturing cured raw ham, the Supplier of our system has estimated that savings amount to **41%**.

Plant interventions carried out on the evaporation towers (calibration of conductivity meters and replacement of evaporative condensers) also reduced water consumption between 2007 and 2008 by **21%** from 149,458 to 118,453 m<sup>3</sup>: this value is however indicative as the measure was implemented in 2008



## Targets 2007 – 2010

Key:

Targets met 2007

Targets met 2008

Targets for 2009

Targets for 2010


Issue	Objectives	Actions	Targets (where applicable)	Personnel in charge: management objectives	Expected economic commitment	To be implemented by	Implemented in	Current status
Waste management	Reduction in the environmental impact generated by waste production	Raise awareness on differentiated waste collection of paper and printer and photocopier toner.		RSGA		2008	2008	Implemented POINT K
		Raise awareness among maintenance staff to improve management/separate obsolete equipment/machinery		RSGA		2008	2008	Implemented POINT L
		Raise awareness among suppliers on using packaging materials (paper, cardboard, plastic) with a lower impact (thinner, recyclable materials etc)		RSGA		2010		
Energy consumption: ELECTRICITY	Achieve energy saving	Install a light meter on a timer to turn off lights and install a motion detector in the dark area	68.77 % of consumption for the activity (*see comment)	Maintenance manager	€ 3,500	2007	2007	Implemented POINT A
		Installation of a twilight detector to manage the outdoor lighting system with the addition of a switch on a timer that sections the number of lights lit in the night time (from 11pm to morning).	63.64 % of consumption for the activity (*see comment)	Maintenance manager	€ 7,000	2007	2007	Implemented POINT B



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		Use of heat content probes to recycle air using technology to mature cured raw ham	41 % of consumption for the activity (*see comment)	Maintenance manager	€ 15,000	2007	2007	Implemented POINT C
		Assessment of the possibility of installing a photovoltaic system		Maintenance manager/Factory manager		2010		
<b>Energy consumption: METHANE GAS</b>	Electricity saving by optimising the condensation temperature of freon	Replace evaporative condensers with evaporation towers in the glycol water production plant for the TRAVAGLINI machine room, adding heating to recover water at 40 °C to condition the pre-rest and rest stores by doubling the current recovery circuit and heat removal		Maintenance manager		2009	2008	Implemented POINT J
	Savings in methane gas currently integrated with the recovery circuit			Maintenance Manager		2009	2008	Implemented POINT J
<b>Energy consumption: WATER RESOURCES</b>	Savings in softened water reintroduced in the towers, especially in summer		21% of consumption for the activity (*see comment)	Maintenance manager		2009	2008	Implemented POINT J
	Achieve energy saving	Install a device to regulate the process of flushing the evaporation towers on the basis of the saline concentration in water		Maintenance manager	€ 1,000	2009	2009	IMPLEMENTED POINT P
		Training for evening sanitization staff		RSGA		2008	2008	Implemented POINT M
		Optimise management of the evaporation towers in heat removal by softening the water		Maintenance manager	€ 25,000	2007	2007	Implemented POINT D



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		Building of a central plate cooling system for the slicing thermoforming machines using recovered water		Maintenance manager	€ 15,000	2010		<b>New</b>
<b>Energy consumption: METHANE GAS</b>	Savings in methane gas currently used for the aging rooms	Purchase of a compressor to produce compressed air to recover the heat produced		Maintenance manager	€ 20,000	2008	2008	<b>PARTIAL IMPLEMENTATION POINT N</b>
<b>Atmospheric emissions</b>	Reduction in atmospheric emissions	Increase performance of the boilers through the use of a demineralising osmotic unit to reduce sludge in the boiler and optimize inflows		Maintenance manager	€ 10,000	2007	2007	<b>Implemented POINT E</b>
<b>Odour</b>	Maintain zero environmental impact	Correct management of bone waste cell in particular periodically verifying the refrigeration system and collecting bones from the boning process properly to avoid spilling from the container		Maintenance manager/ Boning manager		Permanent		<b>IMPLEMENTED POINT Q</b>
<b>Substances harmful to the ozone</b>	Reduction of ozone-harmful gas	Replace freon R22 with new ventilated glycol water system in some cells		Maintenance manager/Factory manager	€ 30,000	2009	2007	<b>PARTIAL IMPLEMENTATION POINT I</b>
		Create a connection between the circuit of the glycol water produced in the machinery room in the new extension (using new generation refrigerant gas) and the machine room on the 2nd floor of the old factory using R22 freon (remaining on standby for emergencies)		Maintenance manager		2007	2007	<b>Implemented POINT F</b>
		Conversion of the cooling systems for the rest stores in the new part of the factory from glycol to new generation refrigerants		Maintenance manager/Factory manager		2010		<b>New</b>

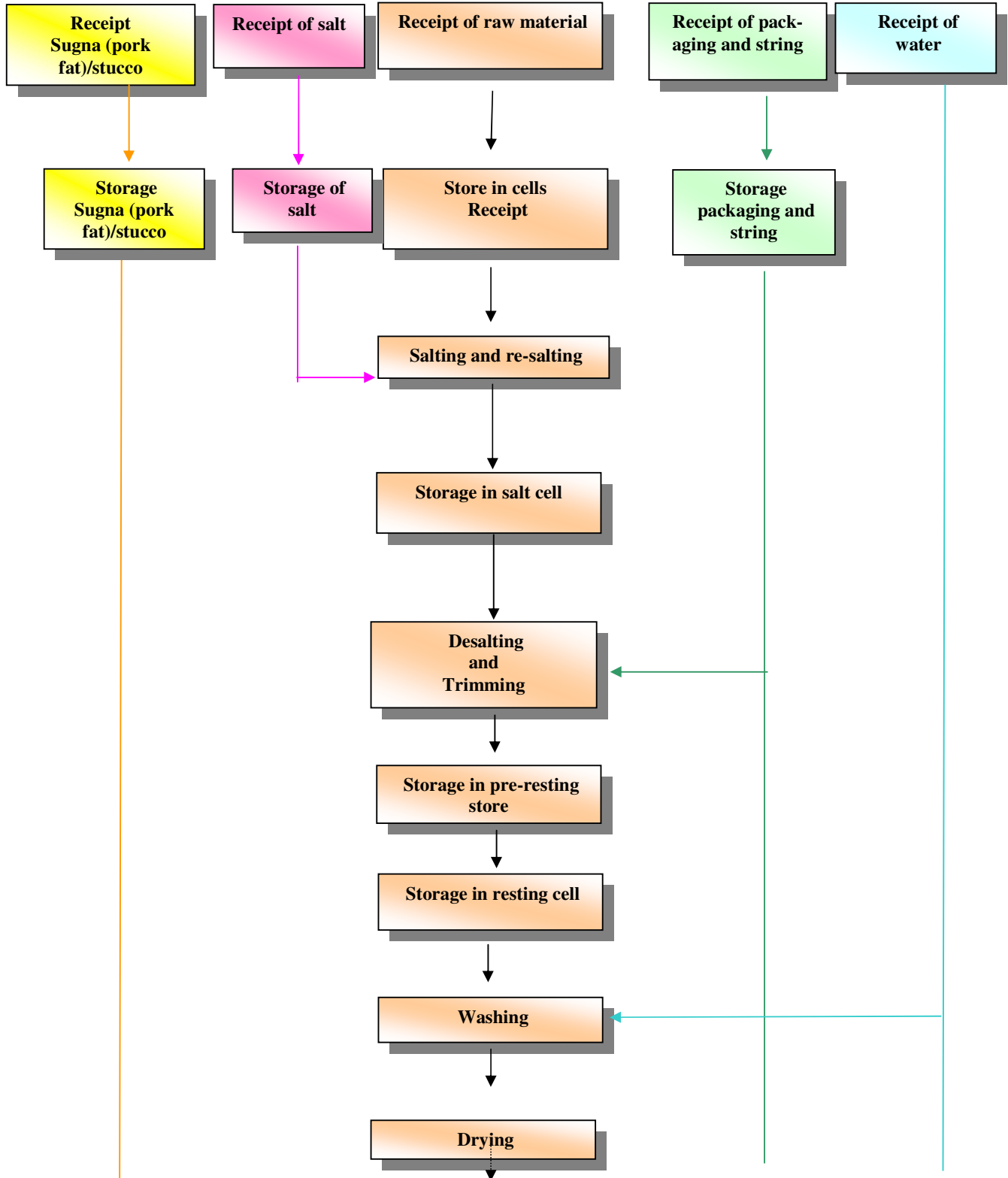


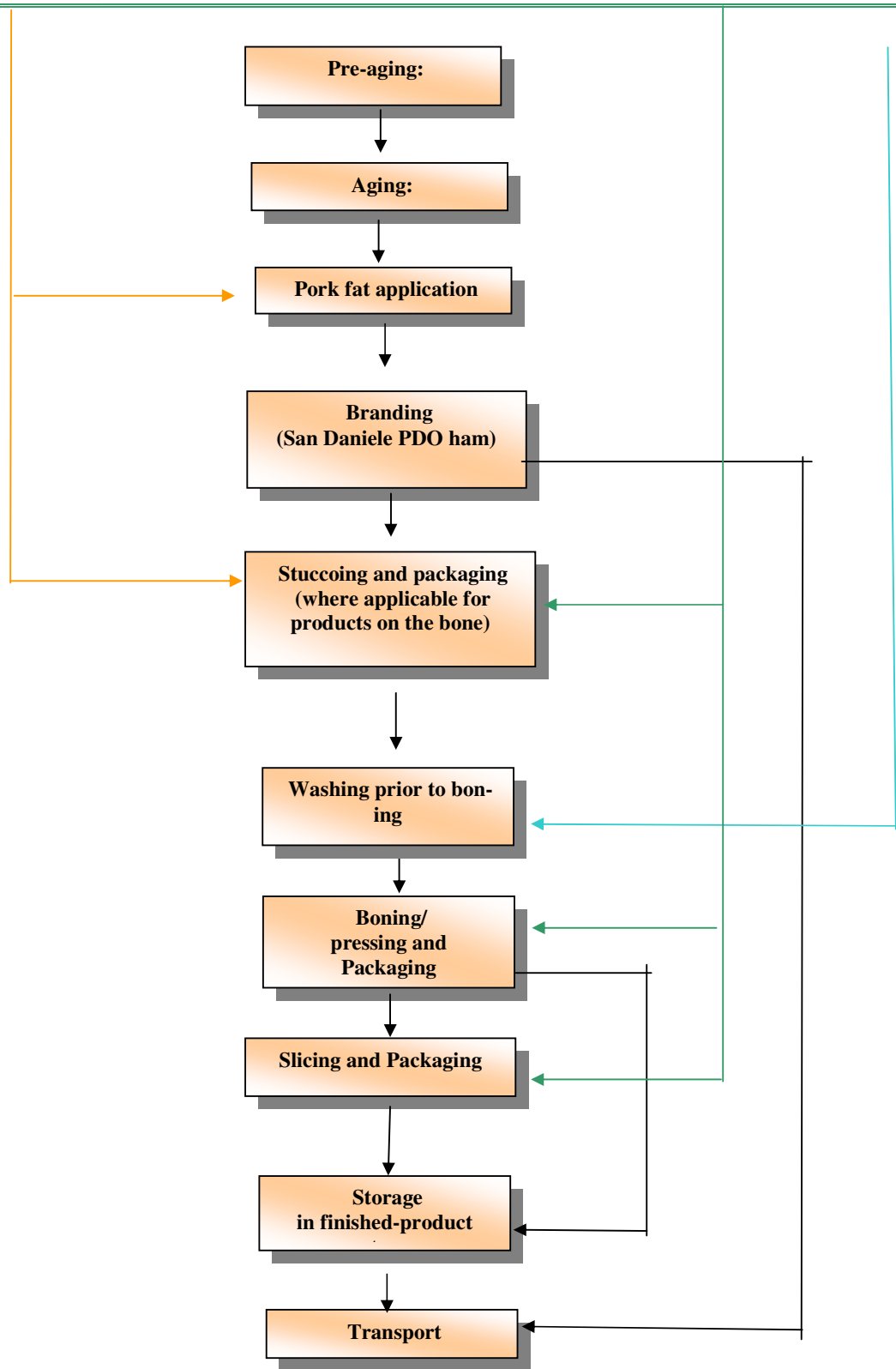
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Objectives and Environmental programmes

Water discharges	Attain greater control on the purification system discharge	Install a permanent maintenance and recording system for the most important parameters and characteristics, possibly through an external provider (permanent measurement of conductivity of discharge water to monitor salinity)		Maintenance manager/RSGA	€ 1,000	2008	2009	PARTIAL IMPLEMENTATION POINT O
		Installation of a recovery system for brines from 4 of the 5 salt cells in the fresh reception department.		Maintenance manager/RSGA				
Soil and subsoil	Minimize risk of contamination	Evaluation of buying some containment tanks for detergent storage.		RSGA/Factory manager	€ 10,000	2009	2009	IMPLEMENTED POINT R
		Train workers on how to handle dangerous substances:		RSGA		2007	2007	Implemented POINT G
Noise	Evaluation of the environmental impact of the new structure.	Sound level detection		Factory Manager	€ 20,000	2007	2007	Implemented POINT H
	Improve the process management status	Implementation of SGSL - OHSAS 18001		all		2009		









Direct Environmental Aspect		Conditions	P=Probability	S=Severity	D=Detection	RPI value
<b>Atmospheric emissions</b>	Heating plants	N	3	4	1	12
		A	non-existent			0
		E	2	4	2	16
	Ozone-harmful substances	N	3	3	1	9
		A	non-existent			0
		E	1	3	2	6
	Greenhouse gas	N	3	2	2	12
		A	non-existent			0
		E	1	4	4	16
<b>Noise</b>	Internal noise	N	3	3	2	18
		A	non-existent			0
		E	3	4	2	24
	External noise	N	1	4	2	8
		A	non-existent			0
		E	1	4	4	16
<b>Waste and packaging</b>	Waste from processing	N	3	3	1	9
		A	3	3	2	18
		E	non-existent			0
	Packaging	N	3	2	1	6
		A	3	3	2	18
		E	non-existent			0
<b>Water discharges</b>		N	3	3	2	18
		A	3	4	2	24
		E	3	4	3	36
<b>Electromagnetic emissions</b>	Metal detector	N	3	2	2	12
		A	2	4	2	16
		E	3	3	2	18



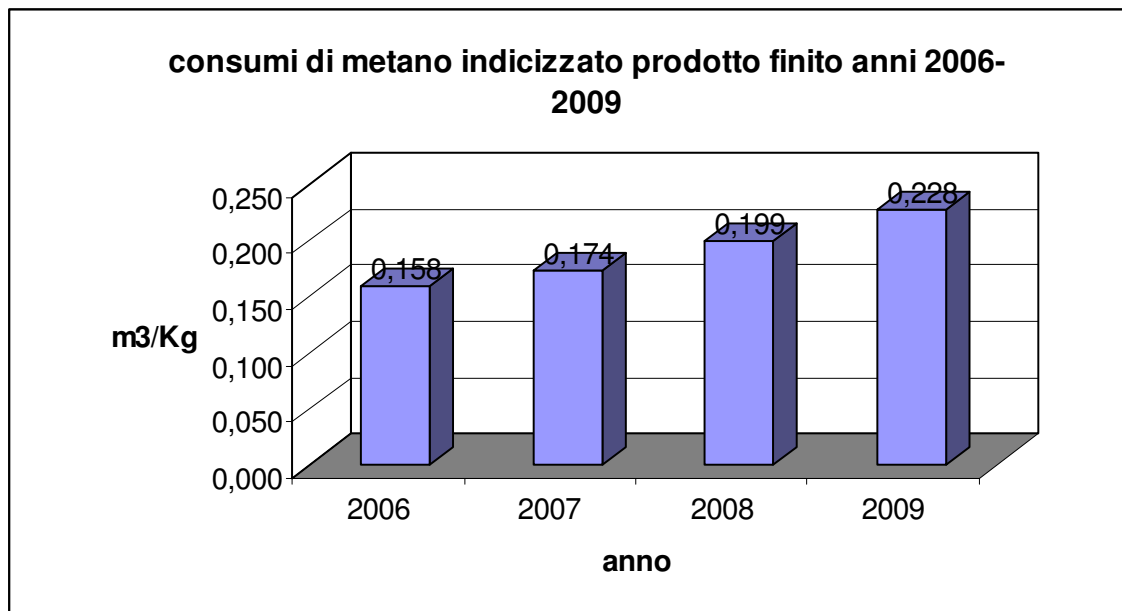
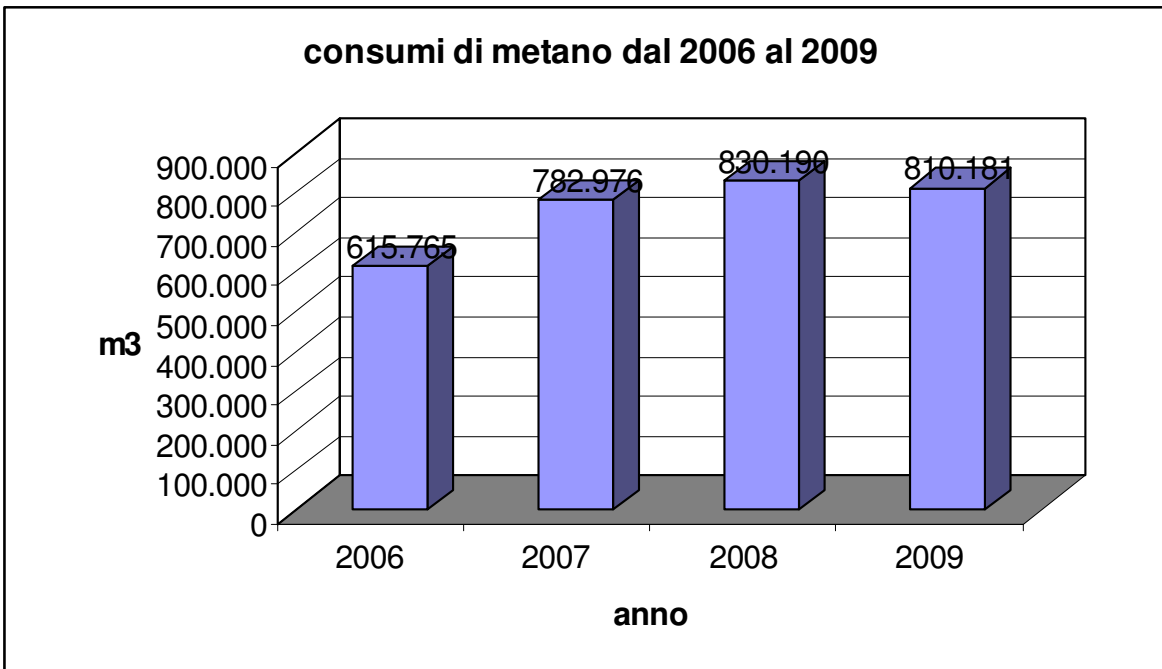
Direct Environmental Aspect		Conditions	P=Probability	S=Severity	D=Detection	RPI value
<b>Odours</b>		N	2	2	2	8
		A	non-existent			0
		E	2	3	4	24
<b>Water and energy resources</b>	Electricity	N	3	3	2	18
		A	non-existent			0
		E	2	4	3	24
	Heating energy	N	3	3	2	18
		A	non-existent			0
		E	2	4	3	24
	Water resources	N	3	2	2	12
		A	non-existent			0
		E	2	4	4	32
<b>Contamination of the soil and subsoil</b>		N	3	4	2	24
		A	non-existent			0
		E	3	4	4	48
<b>Harmful and inflammable substances</b>		N	3	4	2	24
		A	non-existent			0
		E	3	4	2	24

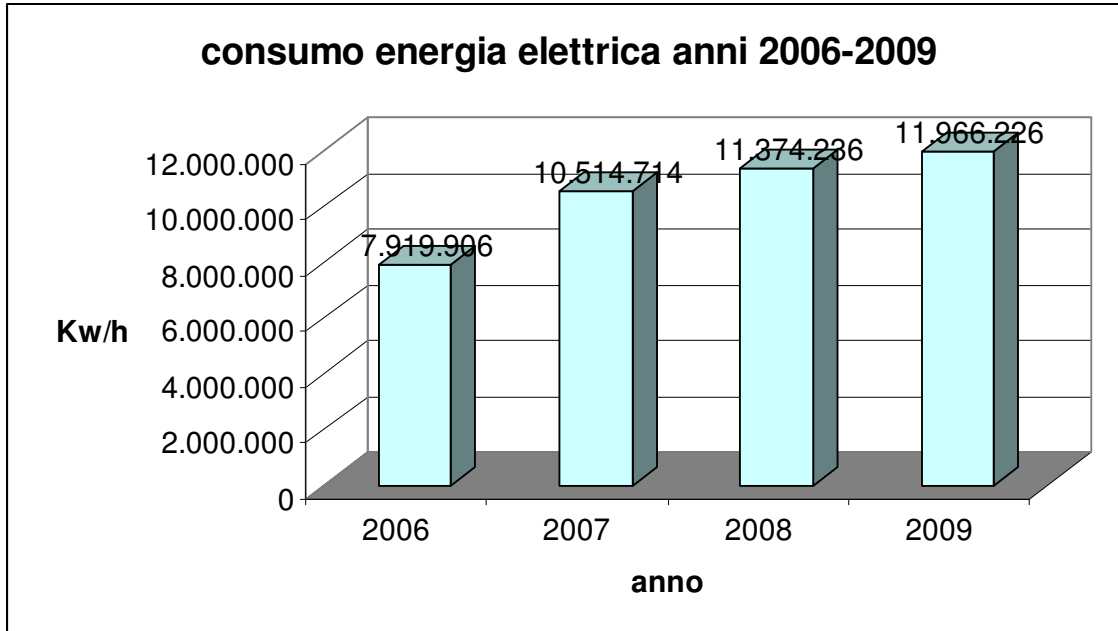
N = normal operating conditions  
A = anomalous operating conditions  
E = emergency operating conditions

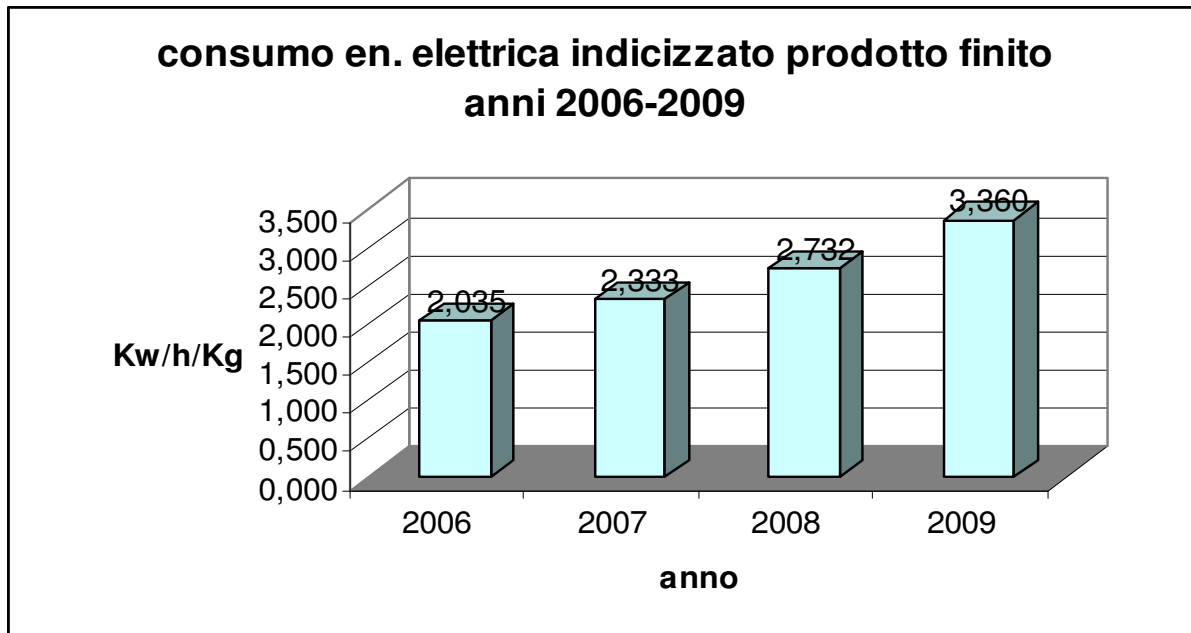


**Methane gas and electricity consumption and relative indexing**

	<i>u.m.</i>	2006	2007	2008	2009
<b>Finished products shipped</b>	kg	3,891,788	4,506,457	4,163,516	3,560,875
<b>Methane gas consumption</b>	m <sup>3</sup>	615,765	782,976	830,190	810,181
<b>Methane consumption finished product indexed</b>	m <sup>3</sup> /Kg	0,158	0,174	0,199	0.227
<b>Consumption of electricity</b>	kW/h	7,919,906	10,514,714	11,374,236	11,966,226
<b>Consumption of electricity finished product indexed</b>	kW/h/kg	2,035	2,333	2,732	3.360
<b>NEW INDICATORS</b>					
<b>Total direct energy consumption A1:</b>	Toe	/	/	/	3,655.905
<b>Total renewable energy consumption A2</b>	Toe	/	/	/	0
<b>Total annual production (Kg finished product) B</b>	kg	/	/	/	3,560,875
<b>Index of energy efficiency (A1+A2)/B</b>	Toe/kg	/	/	/	0.001



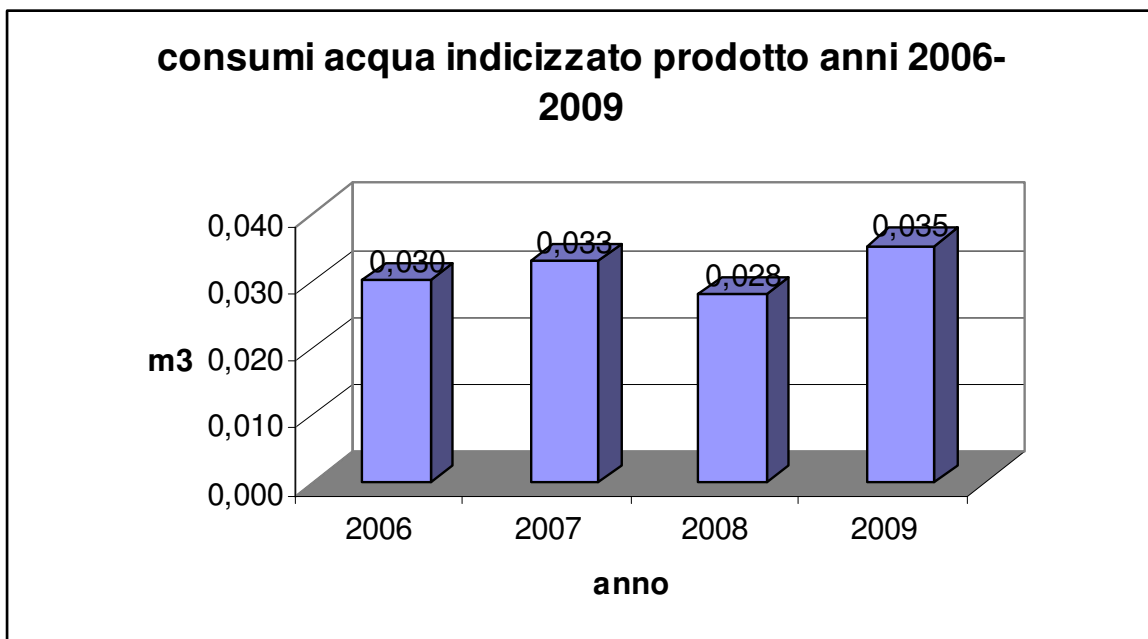
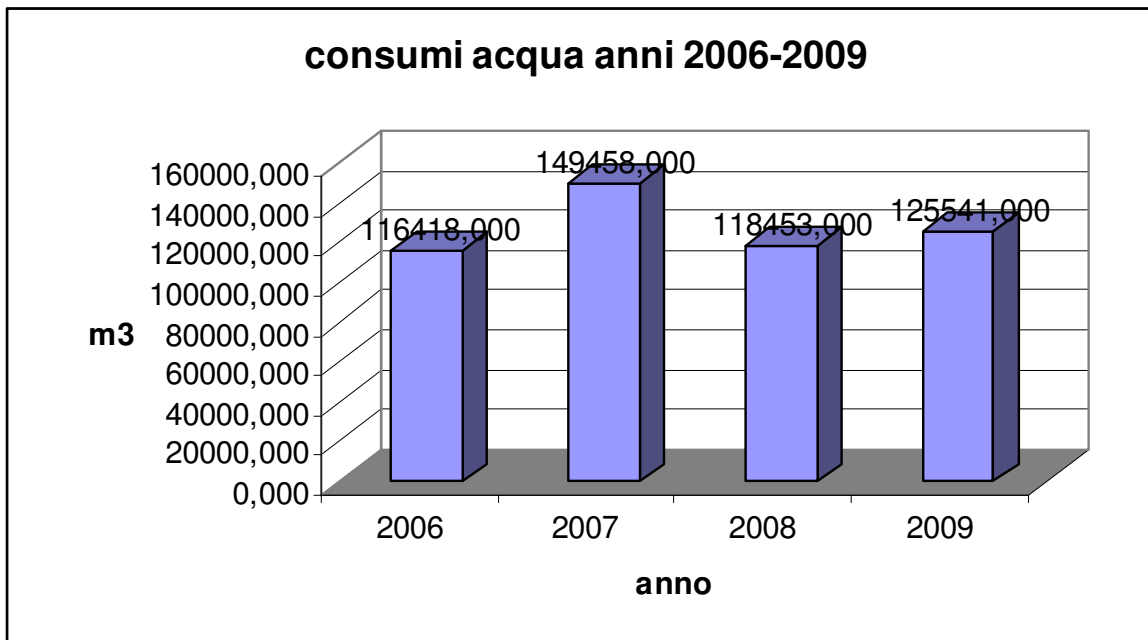






*Water consumption and relative indexing*

	<i>u.m.</i>	2006	2007	2008	2009
Finished products shipped	Kg	3,891,788	4,506,457	4,163,516	3,560,875
Consumption of well water A1	m <sup>3</sup>	116,088	148,820	117,584	123,000
Consumption of water from waterworks A2	m <sup>3</sup>	330	638	869	2,541
Consumption of water finished product indexed	m <sup>3</sup> /Kg	0.030	0.033	0.028	0.035
<b>NEW INDICATORS</b>					
Total annual production (Kg finished product) B	Kg	/	/	/	3,560,875
Index of energy efficiency (A1+A2)/B	m <sup>3</sup> /Kg	/	/	/	0.035





*Estimated waste water consumption (70% of the volume taken)*

<b>Year</b>	<b>Estimated quantities discharged (m<sup>3</sup>)</b>
<b>2005</b>	77,999
<b>2006</b>	81,493
<b>2007</b>	104,620
<b>2008</b>	82,917
<b>2009</b>	87,879

**Analysis of waste water**

Parameter	u.m.	Year 2005:	Year 2006	Year 2007	Year 2008	Year 2009
pH	pH unit	7.60	7.40	7.10	7.42	7.69
BOD <sub>5</sub> (as O <sub>2</sub> )	mg/l	26	20	< 10	13	72.3
COD (as O <sub>2</sub> )	mg/l	43	54.3	36	57	129.14
Suspended Solids	mg/l	20	12	< 10	16	65
Total surfactants	mg/l	< 0.05	0,060	< 0.05	0.21	0.025
Total phosphorus (as P)	mg/l	0,559	5.83	0,278	1.9	0.4955
Ammoniacal nitrogen (as NH <sub>4</sub> )	mg/l	2.8	1.8	< 0.05	5.4	0.152
Nitrous Nitrogen (as N)	mg/l	< 0.5	0.32	< 0.02	< 0.01	0.35
Nitric Nitrogen (as N)	mg/l	0.73	0.49	1.30	< 0.1	1.07
Animal and vegetable grease and oil	mg/l	< 10	10	< 10	0.9	1.9
Chlorides	mg/l	9.1	21.3	31.7	430	32.45
Total hydrocarbons	mg/l	< 10	< 4	< 0.05	1.0	1.35

The above mentioned values are the average of the 2 analyses conducted during the year.

**Type and quantity of waste produced**

DESCRIPTION		CER	DESTINATION	Year				
				2005	2006	2007	2008	2009
Sludge from washing and cleaning		02 02 01	disposal	75,030	31,170	234,770	252,350	241,600
Unspecified waste (salt from processing)		02 02 99	recovery	399,460	322,220	354,300	315,050	405.120 (*)
Ferrous powder and particulate		12 01 02	recovery		2,750			
non-ferrous powder and particulate		12 01 04	recovery				130	
Paper and cardboard packaging		15 01 01	recovery	36,360	43,380	58,200	65,130	59,730
Plastic packaging		15 01 02	recovery	84,100	83,270	110,620	122,970	141,840
Wood packaging		15 01 03	recovery		1,990	7,350		
Mixed material packaging		15 01 06	recovery				1,690	
Glass packaging		15 01 07	recovery	315				
Out-of-service equipment, other than equipment listed between 160209 and 160213		16 02 14	recovery	4,230			170	
Copper, bronze, brass		17 04 01	recovery	270	2,090			
Iron and steel		17 04 05	recovery	10,480	810	6,050	4,130	1,200
Mixed metals		17 04 07	recovery			870	4,120	
Cables, other than that in 170410		17 04 11	recovery	440		450	300	
Mixed waste from construction and demolition		17 09 04	recovery			5,200	2,700	
Plastic		20 01 39	recovery	9,300	9,510	380		
Sludge from septic tanks		20 03 04	disposal	4,770		18,820	10,830	12,860
HAZARDOUS WASTE	Exhaust oils	13 02 05*	recovery	500	480	344	557	323
	absorbent and filtering materials (including otherwise unspecified waste oil filters), rags and protective wear, contaminated by dangerous substances	15 02 02*	disposal				313	
	out-of-service equipment, containers for dangerous components other than those in items 16 02 09 and 16 02 12	16 02 13*	recovery				136	20
	Organic waste containing harmful substances (detergents for industrial use)	16 03 05*	recovery			49		
	exhaust or ion exchange resins	19 08 06*	disposal				1,000	
<b>TOTAL WASTE</b>				<b>625,255</b>	<b>497,670</b>	<b>797,403</b>	<b>781,576</b>	<b>862,693</b>

(\*) the quantity of waste indicated is greater than in the previous year, as a brine collection system has been installed in 4 of the 5 salt cells, the liquid is disposed of and does not go into discharge water.

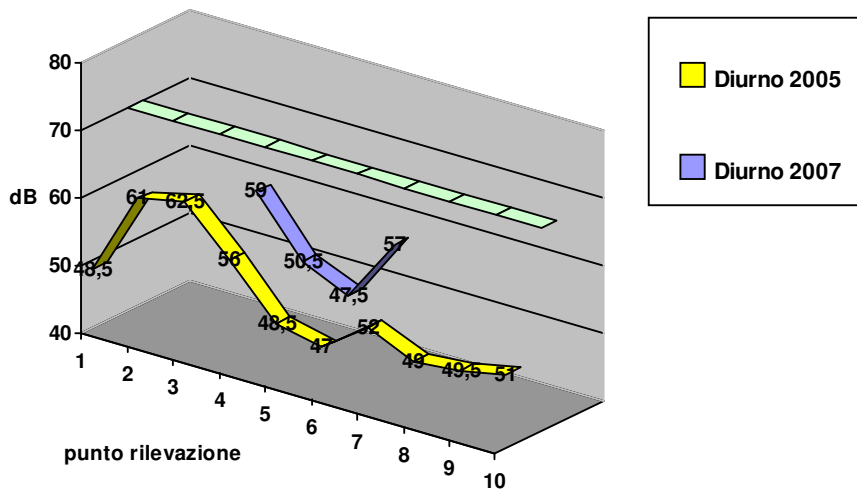
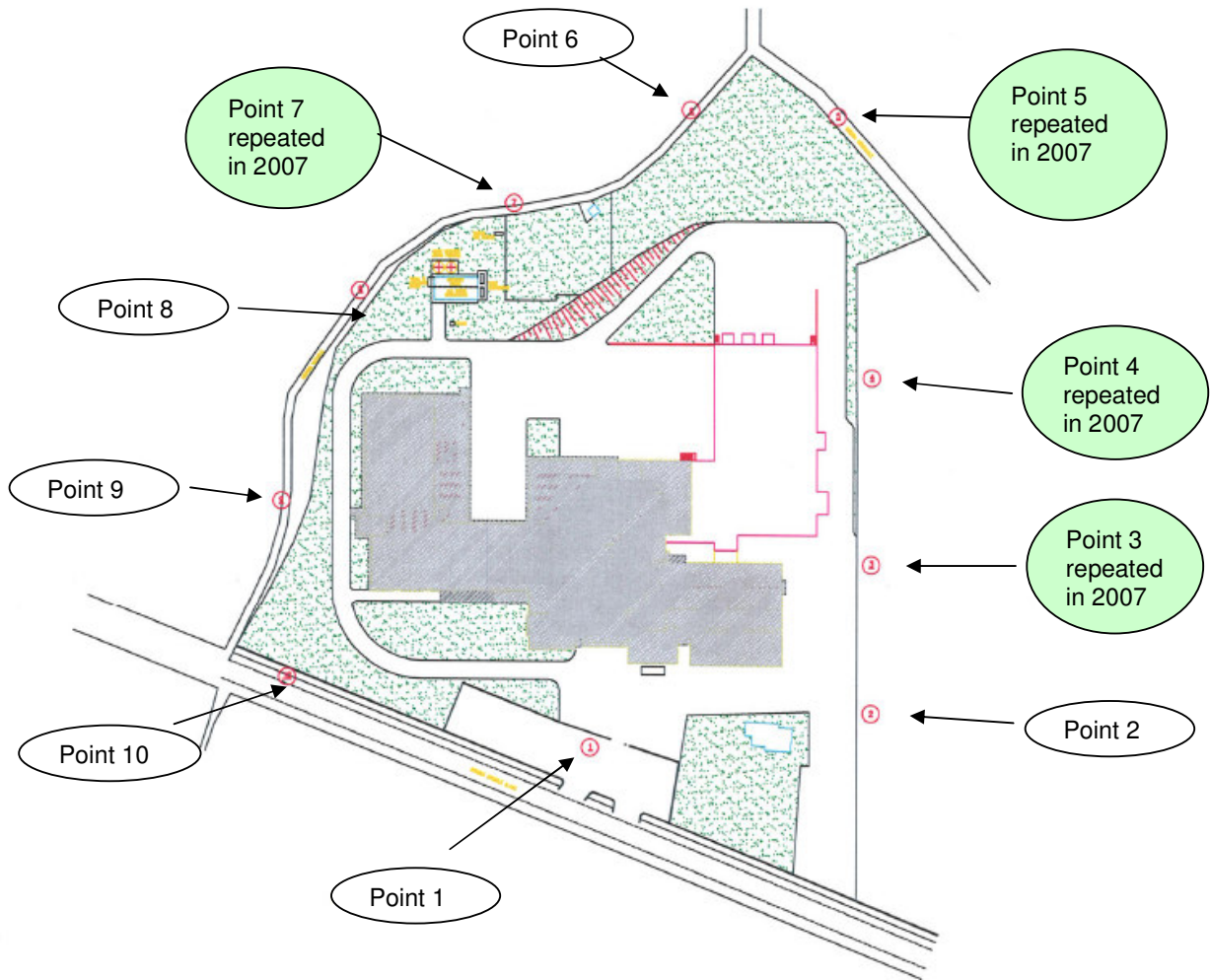


**Indexing of the quantity of waste produced in 2009**

	<b>u.m.</b>	<b>2009</b>
<b>Total annual production of A1 non-harmful waste</b>	ton	862.350
<b>Total annual production of hazardous waste A2</b>	ton	0.343
<b>Total annual production (Kg finished product) B</b>	Kg	3,560,875
<b>Index for waste (A1+A2)/B</b>	ton/Kg	0.00024
<b>Index for waste (A1+A2)/B</b>	Kg/kg	0.24



Indirect Environmental Aspects		P=Probability	S=Severity	D=Detection	RPI value
<i>Atmospheric emissions</i>	Normal condi- tions	1	3	1	3
<i>Noise</i>		1	3	1	3
<i>Waste and packaging</i>		1	3	1	3
<i>Contamination of the soil and subsoil</i>		1	3	3	9
<i>Ozone-harmful substances</i>	1	3	3	9	





*Indexing of annual mass flows of the materials used*

	<i>u.m.</i>	2009
Raw material introduced	ton	4,611.278
purchased semi-finished products for slicing		703.540
cured hams purchased		955.519
Re-entries for aging		1,448.102
Re-entries for aging (King's)		113.458
Hams entering the work cycle (King's)		477.725
Packaging subsidiaries (studs, straps etc)		4.478
Production subsidiaries (pork fat, stucco, salt, vinegar)		718.931
Packaging (laminates, cardboard, pallets, labels)		1,013.335
<b>Total annual flow of materials used A</b>		10,046.366
<b>Total annual production (Kg finished product) B</b>		Kg
<b>Material efficiency index A/B</b>	ton/Kg	0.0028
<b>Material efficiency index A/B</b>		2.821



*Indexing of greenhouse gas emissions*

	<i>u.m.</i>	<b>2009</b>
Emissions of greenhouse gas from methane *	Tons of CO2 equivalent	1,609.036
<b>annual greenhouse gas emissions A</b>		1,609.036
<b>Total annual production (Kg finished product) B</b>	Kg	3,560,875
<b>Index for emissions A/B</b>	Tons of CO2 .equivalent/Kg	0.00045

\*  $f_{em}$  = methane gas conversion factor expressed in Kg CO<sub>2</sub>/m<sup>3</sup>. The value made is 1,996 Kg CO<sub>2</sub>/m<sup>3</sup> pertaining to the year 2009.



*Indexing of biodiversity*

	<i>u.m.</i>	2009
Use of land A	m <sup>2</sup>	44,230
Total annual production (Kg finished product) B	kg	3,560,875
Index for biodiversity A/B	m <sup>2</sup> /Kg	0.0124