



Waitakere Eco-City



**WAITAKERE CITY COUNCIL  
CLEANER PRODUCTION PARTNERSHIP  
PROGRAMME**

**REPORT  
ON  
CLEANER PRODUCTION  
AT  
PHEONIX NATURAL FOODS LTD  
HENDERSON**

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**INDUSTRY AND  
ENVIRONMENT  
LIMITED**

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## **1.0 INTRODUCTION**

Waitakere Eco City's Cleaner Production Partnership Programme (CP3) seeks to establish Cleaner Production in Waitakere businesses by:

- Providing information on how to establish an ongoing Cleaner Production programme through the CP3 workshop and folder;
- Providing the services of a consultant to offer site specific advice.

Waste audit information was collected for baseline monitoring as part of the companies individual programmes, and is also to be used in Council's strategic waste management planning. The experience gained from the CP3 programme will help Waitakere City better approach the development of Cleaner Production in the city.

## **2.0 BACKGROUND**

Pheonix Natural Foods Ltd is located in Aetna Place in Henderson. The staff of eleven produces a range of drinks, sauces, jams and marmalades, with the emphasis on natural and organic ingredients. This natural image is especially consistent with the Cleaner Production approach that Waitakere City Council is promoting.

## **3.0 PURPOSE OF REPORT**

The purpose of this report is to:

- Provide waste audit information for council's strategic waste management planning;
- Advise on areas in which there is further potential for Cleaner Production at Pheonix Natural Foods;
- Advise of the operation of an ongoing Cleaner Production programme, and detail the methodology used.

## **4.0 METHODOLOGY**

Initial contact was made with the business by Waitakere City's Cleaner Production Coordinator, and showed interest in participating in the CP3 programme.

In the initial meeting between a Pheonix director and the consultant, the Eco-City CP folder was introduced and the Cleaner Production approach explained. Commitment to the programme was then obtained, with a CP coordinator for the site being designated.

A draft environmental policy statement was written by the consultant as a basis for Pheonix to develop their own from. No changes were made to this, and it is shown in Appendix 2 of this report.

Two walk-through audits were performed by the consultant, first with the director, and then with the production manager. Production processes, operational practices, materials use and waste management were focused on.

## **5.0 WASTE AUDIT INFORMATION**

### **5.1 PRODUCTION PROCESSES**

#### **5.1.1 DRINK MANUFACTURE**

Around 70% of production, or around 6 500 to 7 000 bottles per week, is the manufacture of a range of drinks on a dedicated production line. Drinks are batched using recipes on production job sheets, which also record key characteristics of each batch. The process varies slightly depending on which drink is in production.

The other 30% of production is a variety of sauces and marmalades. This also includes some contract preparation for other companies.

Honey added to most drink products requires clarification. The clarification vessel is refrigerated to aid this process, but this facility is seldom required, as the clarifying agent usually achieves the desired result. Clarified honey is added to other ingredients and introduced to the brewing tank. The brewing tank has a capacity of up to 2700 litres and is refrigerated.

The brew is then bottled and capped, with carbonation performed on some products at this time. Few breakages or rejects result from the capper, with more breakages coming from bottles dropped on the floor.

Ginger beer is then left to further brew in the hot store. Other drinks are pasteurised immediately.

Bottles are loaded in the pasteurisation tank, a rectangular trough with an open top. It is understood that this will be replaced by another tank in the near future. Water used for pasteurisation is heated to 80°C for an operational temperature of 60°C. Temperatures are monitored before and after, and the used water is then pumped back into the hot storage tank and reused. An anti-fungal agent is added to the water to prevent discolouration in the labelling stage. The number of bottles which break are recorded, which is said to be relatively few.

Labelling is done mechanically and supervised by the machine operator. Reject bottles are separated, because of cap defects, label defects or underfilling. This information is recorded.

Refer to Appendix 1 for the drinks process diagram.

#### **5.1.2 SAUCE AND JAM MANUFACTURE**

Frozen fruit is heated, then added with other ingredients and cooked. All operations take place in one vessel per batch, reducing losses as residues from changing vessels.

Refer to Appendix 1 for the process diagram.

### 5.1.3 WAREHOUSE

Products are packaged in kraft cartons. Local deliveries are loaded into vans for drop-off around Auckland.

Consignments for national delivery are assembled into pallet loads of cartons and plastic shrink-wrapped.

## 5.2 ENERGY

Electricity is the only form of energy used on the Premises.

**Table 1: Summary of electricity consumption and charges for 1 April 1995 to 31 March 1996**

Month	Total kWh	Total (ex GST)
April 1995		
and May	18 320	\$3 862.47
June	6 640	\$1 750.12
July	8 000	\$1 890.12
August	10 240	\$1 782.44
September	8 640	\$1 803.58
October	12 240	\$2 053.15
November	10 800	\$1 927.13
December	8 880	\$1 860.96
January 1996	11 440	\$2 007.39
February	11 840	\$1 942.98
March	10 560	\$1 957.05
<b>TOTAL</b>	<b>117 600</b>	<b>\$22 857.39</b>

Electricity costs are comprised of:

- a day unit charge;
- a night unit charge;
- an anytime maximum demand charge;
- a winter on peak demand charge.

Three phase power supply is required for the two 75 kW boilers. These produce hot water for use in sauce/jam production and in pasteurisation. The boilers have of late been shut down overnight because of a leak.

Other main users of electricity are the machinery of each production line:

- brewing vessel;
- bottler and capper;

- (pasteuriser);
  - labeller
- for the drinks line, and:
- pulping machine
  - cooker
- for the sauces and jams line.

Refrigeration equipment for the honey clarifier is seldom used. The hot store is used to ferment ginger beer before pasteurisation. It is well insulated, requiring a small amount of electricity occasionally to keep product at the correct temperature.

### **5.3 WATER**

Water consumption records were not available.

Filtered water derived from mains water, and mineral water delivered by tanker, are used in all drinks. Additional mains water is used to hose down the factory floor at the end of each day, and to water blast the floor monthly.

Filtered water is used to clean the brewing vessel (drinks) and pans (sauces/jams). These are sterilised after each batch using Kloran in the ratio of 1.7 l to every 500 l of filtered water. The use of filtered water is to avoid a residue which would compromise the products.

Other mains water is used in the steam boilers. The hot storage tank was observed to be overflowing during one site visit. This occurs as heated water expands after filling of the tank.

A small leak was observed at the filling connection of the mineral water tank during a site visit.

### **5.4 RAW MATERIALS**

Ingredients used in drink production are various combinations of honey, yeast, ginger, lemon juice, and others.

Main jam and sauce ingredients are frozen fruit, acetic acid, honey, herbs and spices.

Bottles are delivered from ACI glass, and are designed for single use before recycling. Sterile cardboard packing sheets arrive as part of their packaging, and these are reused in the factory. Approximately 320 to 350 thousand bottles are used per year.

Packaging used is kraft cartons. Plastic shrink wrap is used to bond pallet loads of packaged product to protect it from moisture damage.

### **5.5 SOLID WASTE MANAGEMENT**

### 5.5.1 RECYCLING OF WASTES

Glass bottles are collected by a recycler, with quantities for one year of pick-up shown below.

**Table 2: Quantities of glass collected for recycling between June 1995 and July 1996**

<b>MONTH</b>	<b>WEIGHT (kg)</b>
June 1995	1 100
July	-
August	600
September	-
October	1 800
November	-
December	600
January 1996	450
February	600
March	-
April	0.45
May	-
<b>TOTAL</b>	<b>5 600</b>

The pick-up service and bin are provided free of charge, and is dependent on the glass being relatively free of contamination. Some food residues are left on the bottles, but this itself is not a major problem.

Kraft and plastic wastes in small quantities were seen in the bin during a site visit. This is possibly due to the open-topped bin being treated by some staff as a rubbish bin. The bin is located near to the road, and there has been a problem with public disposing of their rubbish in it. In particular, window glass containing lead was deposited in the bin. This is unfit for use in food containers, and had the potential if not detected to contaminate a large amount of recycled glass.

Clean kraft cardboard is recycled, with about 85 m<sup>3</sup> collected each year.

Plastic shrink-wrap is now collected by a recycler. This has been in place for approximately two months.

### 5.5.2 UNSORTED SOLID WASTE

Unsorted waste is disposed of through the Waitakere City collection system, and is made up of:

- Organic process by-products such as skins and seeds;
- Soiled kraft;
- Plastics other than those collected for recycling;
- Paper from office activities.

The quantity produced is highly variable, depending on current production. This tends to be higher in summer, when more drinks are produced, and very small in winter.

## **5.6 TRADE WASTE DISCHARGES**

No consent is held for a trade waste discharge. This may be required depending on the volume and qualities of waste water produced by Pheonix. No further information is available on this.

## **5.7 HAZARDOUS SUBSTANCES**

'Kloran' is used to sterilise machinery and clean tanks.

'Klenzade' is a slimicide, introduced to the pasteurising tank to prevent algal growth. Organic material from breakages contributes to the growth.

'Takeoff' is a grease cutter, used to remove burnt-on residues from the sauce/jam pans.

## **5.8 HOUSEKEEPING**

Factory floor was observed to be orderly in general. A varying amount of water was present on the floor during different site visits, but not enough to be a hazard.

Storage of some materials is next to foot traffic between the main factory and warehouse. This has the potential to be easily knocked over by anyone passing.

The warehouse was seen to be well ordered and uncluttered.

## **5.9 CLEANER PRODUCTION PROGRAMME**

The draft environmental policy statement prepared by the consultant was adopted without any changes by Pheonix, but may be revised at a later date. A copy of this is appended to this report.

The production manager has been designated as the Cleaner Production coordinator, but the directors are still very much involved in the day to day running of the company and the programme.

Plastic recycling has recently been initiated, and lagging for hot water piping is now being looked into.

## **6.0 DISCUSSION**

### **6.1 ELECTRICITY**

Electricity charges are made up of:

- A line connection charge, which is fixed;
- A consumption charge directly proportional to units used for this pricing option;
- A maximum demand charge, based on maximum kilowatt demand at any one time;
- A winter on peak demand charge, based on maximum kilowatt demand during 5-9 pm.

The most significant consumers of electricity are the two 75 kW boilers. The records show that at no time does maximum demand approach full capacity of the boilers of 150 kW. Instead, it ranged from 104.4 to 107.2 kW between 5 October 1995 and 6 March 1996. The tight range would suggest that peak demand does not often exceed around 110 kW. It may be possible to reduce the daily connection charge component of the charges, dependent on what capacity this is based on.

The range in anytime peak demand is just less than 1.5 times the peak consumption of one boiler. It may be possible to eliminate the need for one boiler through efficiencies in transfer and use of water, or spreading the use of the boiler over an extended period. This would possibly allow a further reduction in capacity charges.

The winter on peak demand charge could be reduced by operating the boilers as little as possible during this period. It may be practical to switch on boilers automatically after 9 pm, depending on how long it takes to heat the water up for use the next day. Consideration should also be given to keeping the maximum demand as low as possible during this period to keep the anytime peak charge down.

Spreading the use of other equipment throughout the day would reduce the peak demand. It may not be practical to do this without interfering with production scheduling.

The appropriate energy tariff and pricing options should be discussed with Power New Zealand Limited. The advantages and disadvantage of a day/night charging regime versus a seasonal summer/winter one should be explored. In favour of the day/night regime, the high day rate could be reduced substantially if the boilers were used mostly at night. This is generally of benefit if unit usage between 11:00 pm and 7:00 am is more than 25% of the total daily usage. In favour of a seasonal plan, most drink production is during summer, where a lower rate is applicable.

The option of a detailed energy audit and analysis could be considered. It is normal to allow around 5% of the total energy bill for one year for this, which in this case work out to about \$1000.00.

Boilers could be shut down over the weekend, and automatically timed to start up on Sunday night.

The 20°C margin for water heating above the pasteurisation temperature may be higher than is really necessary, Examination of monitoring records before and after pasteurisation could be analysed. If temperatures throughout are much greater than the required pasteurisation temperature, than the preheating temperature should be reduced.

## **6.2 WATER**

Products use filtered and mineral water as ingredients. Filtered water is also used for cleaning of the brewing vessel. This is done with the aid of a cleaning chemical. The rationale for using filtered rather than directly from the mains is to not leave an unfiltered residue which would then be introduced to the product.

The lack of water records is a barrier to finding ways to minimise water use. Monitoring is important to establish firstly, what consumption is and how much it costs, and secondly, to measure the effects of any changes and judge their effectiveness.

Consumption should be compared with production figures over the same period. If there is not a close correlation, this would point to inefficiencies in water use, and potential areas for improvement.

Specific things noticed during the site visit, such as leaks from the mineral water tank and the overflow from the pasteurisation water storage tank should be prevented.

## **6.3 SOLID WASTE MANAGEMENT**

### **6.3.1 WASTE MANAGEMENT HIERARCHY**

The order of preference when managing wastes is to:

- Reduce quantity and concentration of wastes produced before generation;
- Reuse materials without additional processing;
- Recycle materials, internally or externally;
- Treat other wastes to reduce concentration after generation;
- Dispose responsibly of the remainder.

This should be the order of priorities of the Cleaner Production programme at Pheonix when dealing with waste management issues.

### **6.3.2 RECYCLING**

The walks through the site and talks with staff indicated that loss of bottles to breakages etc was not thought to be major. Records from the recycling pick-up contractor indicates that over 5.5 tonnes of glass were picked up between June 1995 and May 1996. This equates to an average of over 100 kg per week, or more than 300 bottles. This is roughly 4.5% of bottles purchased. This figure is not surprising, but over one year still represents a significant cost in replacement.

Data collected from product job sheets, breakages during pasteurisation, labelling and other stages should be collated and the reasons for waste generation investigated.

In the case of pasteurisation, breakages occur due to the heat causing a buildup of pressure in the sealed bottles, and the thermal stress on the glass. Sudden thermal stress could be eased by gradually warming the bottles to pasteurisation temperature, but this would probably have a negative impact on the amount of electricity used in the process, and would slow production.

The cleanliness of bottles for recycling should be maintained as much as possible, along with exclusion of other wastes which make the glass unsuitable for recycling. This would help to maintain a good relationship with the recycler, and help prolong this free service. The cost of disposal would otherwise be prohibitive. This was put in jeopardy by the presence of window glass, which contains lead, in the glass recycling bin. The toxicity of lead means that this glass is not suitable for use in food containers. It should be ensured that the introduction of other waste by the public or staff is minimised by:

- making the bin inaccessible to the public;
- stressing the importance of keeping glass clean to staff;
- monitoring the bin to see if these initiatives have been successful.

It is equally important to keep kraft and plastic recycling bins free of unwanted material. Staff training and education should adequately explain how all waste materials are to be handled, so that the maximum amount of material can be recycled without contamination.

The possibility of recovering seeds, pulp and any other organic waste for animal feed should also be considered. Attention could also be given to reuse and recycling of office paper waste.

### **6.3.3 UNSORTED SOLID WASTE**

The composition of unsorted waste is known only roughly. The actual volume produced is not monitored. There is no financial incentive directly for Pheonix to record solid waste production and minimise it while the free Waitakere City collection system operates. It is likely in the near future that there will be some charges imposed, in line with the Government's 'generator pays' waste policy. This is also because of the imminent need to export municipal solid waste to landfills outside Waitakere City at some expense. Long-term then, it is definitely in Pheonix's interests to reduce the amount of solid waste generated.

Monitoring of waste volumes and composition is necessary to determine:

- what the waste actually is;
- how much it costs to replace, and in future, dispose of;
- where it comes from;
- why it is being generated; and
- what alternatives there are to its minimise generation.

There may be some benefit immediately in checking on waste composition to ensure that materials which could be reused or recycled are not finding their way into the solid waste stream.

#### **6.4 TRADE WASTE DISCHARGES**

No trade waste discharge consent is held by Pheonix Foods. Because of the lack of data on water use and disposal, it is not known whether a trade waste discharge consent is required.

Meeting and where possible exceeding environmental legislation requirements is stated as an objective of the environmental policy, and is important to maintain Pheonix Foods' commitment to the environment. There is also the prospect of prosecution if in fact any unlawful discharges are being made. The obligations under the Trade Waste Bylaw should be investigated by Pheonix when more data becomes available, and any necessary action taken to ensure compliance.

#### **6.5 HAZARDOUS SUBSTANCES**

Under the objectives of the environmental policy statement, alternatives for use of the cleaning, slimicidal and sterilising chemicals should be sought.

Material safety data sheets (MSDSs) should be provided by the supplier of the chemicals and displayed prominently in the factory. These provide information on protective equipment required, and procedures for first aid. Obviously, the required safety equipment for handling of these chemical and first aid supplies need to be provided. Training and raising the awareness of staff is essential to minimise the risks of using these substances.

Procedures for appropriate disposal of used containers and any unused substances should be developed and monitored. Advice on this should be available from the chemical supplier.

#### **6.6 HOUSEKEEPING**

Good housekeeping practices have the dual advantages of reducing wastage and improving worker and public safety.

While no acute examples of bad housekeeping were observed on visits to the premises, it is important to keep this as a priority. This could be through assigning responsibility to one staff member for ensuring that all areas are orderly and safe for workers.

Some lesser but significant examples of housekeeping practices to investigate are:

- leakage from the mineral water tank connection fitting;
- overflow from the pasteurisation water storage tank;

- presence of contaminants in the glass recycling bin.

A preventative maintenance programme should monitor when equipment is in need of servicing, and maintain equipment at maximum efficiency. This is especially important for the boilers and production line equipment where wastage is expensive.

Overflow from the hot water storage tank wastes energy and water, and should be avoided. This may be through use of a sensor and switch to prevent overfilling, or simply filling the tank to a lower level.

Better staff awareness could be promoted through regular reminders at the fortnightly staff meetings, as part of a regular Cleaner Production programme update.

## **6.7 CLEANER PRODUCTION PROGRAMME**

With a production staff of six, and total staff of eleven people, a complex Cleaner Production system was not called for. Instead, a less formal approach was taken. By working through the production manager as the coordinator of the programme, and involving other staff as needed, it is intended to achieve comprehensive environmental control without becoming overly burdened by a system. Overall direction is to be ensured by the directors, in line with the environmental policy statement.

The small company size means that communication should not be hindered by a management hierarchy, but attention to formal communication to all staff is necessary to have everyone involved.

Part of programme functions in the future will need to be better monitoring of resource use and waste production.

## **7.0 CONCLUSIONS**

### **7.1 ELECTRICITY**

The electricity cost may be reduced through reductions in:

- line;
  - unit;
  - anytime peak;
  - winter on peak
- components of charges.

This could be brought about through:

- changes in operational practices;
- changes in charging plan;
- equipment modifications;
- maintenance.

The most significant consumers of electricity are the two 75 kW boilers. It may be possible to eliminate the use of one of these.

An independent energy audit may better identify potential reductions in energy use.

## **7.2 WATER**

The lack of consumption records is a barrier to minimising water use.

Monitoring of consumption should be implemented to enable comparison with production and identify:

- correlation between use and production and hence efficiency of use;
- areas for reduction in consumption.

All leakages and overflows should be eliminated.

## **7.3 SOLID WASTE MANAGEMENT**

The order of preference with managing wastes is reduction, reuse, recycling, treatment and disposal. Most potential for recycling of materials has been realised. Other areas of this waste management hierarchy could now be given attention by the Cleaner Production programme.

Over five and a half tonnes of glass were recycled in one year, a wastage factor of around 4.5%. This is not an unusual figure, but the cost will still be significant over a year.

Bottle losses could be investigated through monitoring and existing records to determine where main causes of breakages are, and options for reduction.

Ensuring cleanliness of bottles collected for recycling has been a problem, due to other wastes being introduced to the bin, rather than food residues. It is important to maintain a good relationship with the glass recycler and continue to receive this free service. Contamination of glass may be reduced by:

- making the bin inaccessible to the public;
- educating staff;
- monitoring the bin to determine the effectiveness of these measures.

Kraft and plastic recycling needs to be maximised while maintaining the purity of the stock for collection. Organic and paper waste should also be separated for recycling.

User pays charges for unsorted solid waste disposal are likely to be introduced soon. There is a definite benefit in monitoring quantity and composition of solid waste produced, to help identify costs and opportunities for reduction. This would also monitor how much potentially recyclable material was finding its way into this waste stream.

## **7.4 TRADE WASTES**

The existing standing of Pheonix Natural Foods under the trade waste bylaw is unknown, due to a lack of information of water consumption and waste water disposal. Legal obligations and the Pheonix environmental policy are motivating factors for monitoring and ensuring compliance.

## **7.5 HAZARDOUS SUBSTANCES**

The chemicals currently used for cleaning, sterilising and preventing algal growth are to be phased out eventually as stated in the Pheonix environmental policy.

Safety and health considerations should be given priority in the storage, handling and use of these chemicals. Material safety data sheets, protective and emergency equipment and staff training should all be provided to achieve this.

Disposal of unused substances and used containers should be systematised and monitored.

## **7.6 HOUSEKEEPING**

Good housekeeping can improve safety and reduce waste generation. Areas which could be improved are:

- elimination of leaks and overflows;
- storage of raw materials;
- correct separation of wastes for recycling and disposal;
- preventative maintenance;
- allocation of responsibility and staff awareness.

## **7.7 CLEANER PRODUCTION PROGRAMME**

A smaller organisation such as Pheonix is suited to a less complex approach to cleaner production. The existing meetings every second week are a suitable forum for involving staff.

Facilitation of the Cleaner Production programme is to be through the production manager, and other staff are to be involved more directly as needed. This should ensure good control of environmental performance without an overly complex structure.

Fortnightly staff meetings would be a suitable venue for keeping staff involved and discussing ideas for investigation.

The overall direction of the programme should be set by the directors in line with the Pheonix environmental policy.



## **8.0 RECOMMENDATIONS**

### **8.1 ELECTRICITY**

Reduction in electricity costs should be targeted by investigating:

- changes in operational practices;
- change in pricing plan from Power New Zealand;
- equipment modifications;
- maintenance of equipment;

to reduce the charges incurred as:

- line connection;
- unit;
- anytime peak;
- winter on peak components.

Specifically, consideration should be given to:

- negotiating a reduction in line capacity charge with Power New Zealand;
- eliminating the use of one boiler through spreading the demand for hot water and minimising losses in transfer;
- reducing peak demand by spreading the operation of equipment throughout the day;
- operating the boiler(s) outside the winter on peak demand period of 5-9 pm;
- operating the boiler overnight to incur the lower night unit rate;
- reducing the 20°C preheating margin for water used in pasteurisation.

These ideas should be investigated in further detail. Discussion with Power New Zealand is recommended. A detailed energy audit should also be considered.

### **8.2 WATER**

Monitoring of water use should be initiated to identify efficiency of use and opportunities for improvement.

### **8.3 SOLID WASTE MANAGEMENT**

Attention should be given to minimising and managing solid waste through the hierarchy of:

- reduction;
- reuse;
- recycling;
- treatment;
- disposal.

Bottle losses in production should be monitored and options for reduction investigated.

Cleanliness of glass, kraft and plastic collected for recycling should be ensured by:

- increasing staff awareness on the importance of keeping these materials clean;
- making the collection containers inaccessible to the public;
- monitoring the composition of materials in the bins.

Recycling of organic and paper waste should be investigated.

Solid waste production should also be monitored by volume and composition.

#### **8.4 TRADE WASTES**

Compliance with the trade waste bylaw should be investigated and secured.

#### **8.5 HAZARDOUS SUBSTANCES**

Alternatives to the use of hazardous substances including Klenzade, Kloran and Takeoff should be investigated and the use of these chemicals phased out.

All information, training and safety equipment should be provided for the safe use of these chemicals by staff. Safe storage of these chemicals should be established, and emergency procedures developed. First aid and emergency equipment should be provided.

A system for the safe disposal of unused substances and used containers should be put in place.

#### **8.6 HOUSEKEEPING**

Improvements in the following areas should be investigated:

- eliminating leaks and overflows;
- storage of raw materials;
- separation of waste for recycling and disposal;
- preventative maintenance;
- allocation of responsibility and promotion of staff awareness.

#### **8.7 CLEANER PRODUCTION PROGRAMME**

The Cleaner Production programme should be facilitated through the production manager, and other staff involved as necessary.

The overall functioning of the programme should be overseen by the directors, with the environmental policy statement used as the focus of the programme.

Regular project updates and staff input should be through the fortnightly staff meetings.

## **ACKNOWLEDGMENTS**

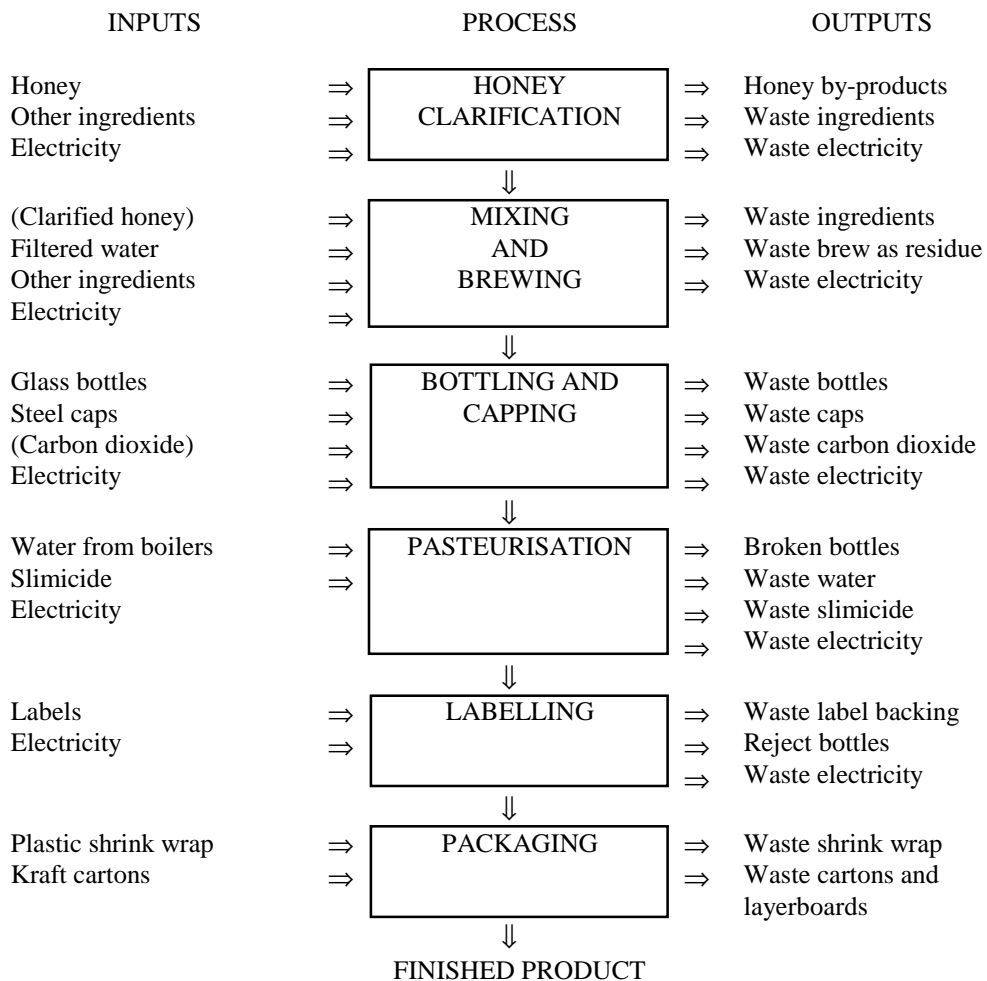
The Waitakere City Cleaner Production Partnership Programme is assisted by funding from Auckland Regional Council Environment.

Assistance provided by the Ministry for the Environment is also gratefully acknowledged, this publication being produced with funding from the Sustainable Management Fund.

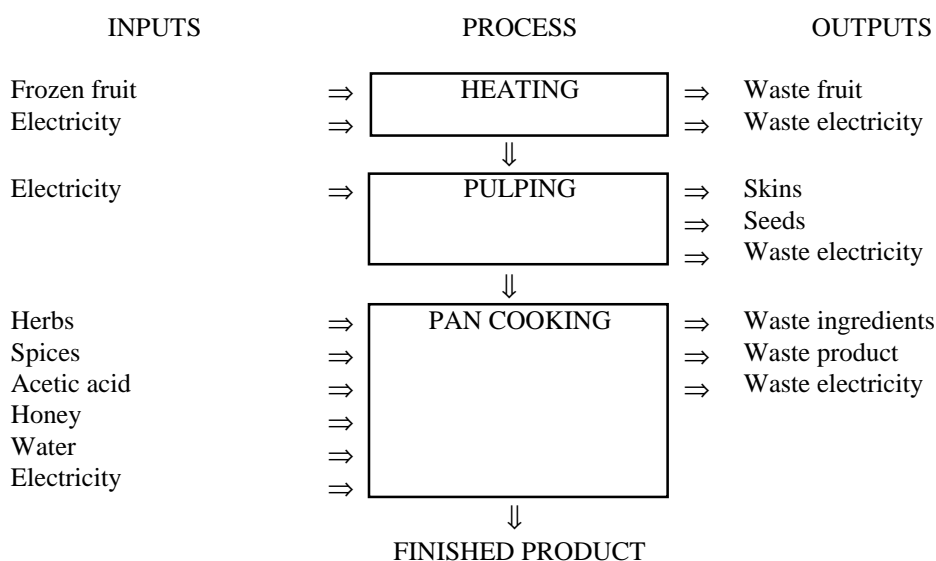
The author would like to thank the staff at Pheonix Natural Foods Ltd for their time and assistance in the CP3 study.

## APPENDIX 1: PROCESS FLOW DIAGRAMS

### DRINKS PRODUCTION



### SAUCE AND JAM PRODUCTION



## **APPENDIX 2: ENVIRONMENTAL POLICY STATEMENT**

# **Environmental Policy Statement**

## **Pheonix Natural Foods Ltd**

**At Pheonix Natural Foods we recognise our responsibility to the sustainable management of resources. To achieve this we are committed to continually improving our environmental performance, and will do this through:**

- **meeting and where possible exceeding environmental law requirements;**
- **progressively minimising environmental effects of our operations and products through their life cycles;**
- **operating an ongoing cleaner production programme involving all staff to monitor, review and continually improve environmental performance;**
- **using resources as efficiently as possible and minimising waste production at source;**
- **minimising use of non-renewable resources;**
- **phasing out the use of hazardous substances where alternatives exist;**
- **disposing of any waste in a responsible and approved manner;**
- **integrating environmental criteria with all significant purchasing specifications, purchasing and subcontracting;**
- **ensuring that all employees are informed and have suitable resources to implement this environmental policy;**
- **making this policy available to all employees and the public;**
- **having open communication with the community on matters of mutual concern.**

**This policy will be reviewed annually.**

## **EXECUTIVE SUMMARY**

The Waitakere City Council Cleaner Production Partnership Programme (CP3) seeks to assist businesses in Waitakere to establish Cleaner Production programmes. This has been initiated at Pheonix Natural Foods Ltd through the Waitakere City Cleaner Production folder, and providing the services of a consultant to advise on the programme establishment.

Pheonix produce a range of drinks, jams and sauces from a factory in Aetna Place, Henderson. The staff of eleven is already involved in recycling, and seeks to further improve environmental performance through the establishment of a Cleaner Production programme.

This report provides waste audit information for council's strategic waste management planning. Areas in which there is potential for Cleaner Production are advised on, as is the operation of an ongoing Cleaner Production programme and the methodology used.

An environmental policy statement has been prepared by the consultant, and this has been adopted by Pheonix. This sets priorities for environmental management and is to be used as the basis of a Cleaner Production programme.

The Cleaner Production programme is to be facilitated through the production manager, under the overall guidance of the directors. Other staff are to be involved as necessary.

Results are presented from two walk-through audits and other records obtained. These cover the production processes, resources used, wastes produced and other aspects of the operation.

In the discussion section, the issues surrounding resource use and waste production are related to the situation at Pheonix, and possible areas for investigation as Cleaner Production options are suggested.

It was concluded that there are a number of areas in which environmental performance could be improved and savings made. This most significantly, in financial terms, involves the use and charges of electricity. Various other practices and monitoring of information are identified as being of importance.

Key recommendations of this report are:

- investigation of reduction of energy charges through general and specific changes in operational practices and charging plan;
- monitoring of water use;
- monitoring and management of solid wastes;
- compliance with the Trade Waste bylaw;
- considerations for use of hazardous substances;
- improvements in housekeeping practices;
- operation of the Cleaner Production programme.

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