



CASE STUDY

Natures Organics water saving investigative study

1. Company profile

Natures Organics is located in Ferntree Gully and began as a small business in the late 1950's producing bath cubes, hair colourants, and various toiletry ranges. Natures Organics' product base has grown significantly since then and the company now specialises in the manufacture of environmentally sensitive products including shampoo and conditioners, bodywash, skin care, hair gel and cleaning products which are distributed primarily through supermarkets Australia-wide and internationally.

Natures Organics is currently involved in the Victorian Government's water management action plan (waterMAP) program. As part of the program users of > 10 ML of drinking water per year are required to:

- Assess their current water use
- Identify inefficiencies and opportunities for water savings
- Prepare an action plan to implement water conservation activities
- Annually report on implementation of water conservation activities

2. waterMAP Assist

The Australian Industry Group (Ai Group) is committed to working with member companies to encourage continuous improvement, resource efficiency, use of recycled water where possible, and reduced usage of drinking water. Ai Group's waterMAP Assist program has provided resources and funding to member companies to assist them implement initiatives contained in waterMAPs and deliver water savings in industry.

3. Project overview

Natures Organics is committed to reducing water use. The major source of water use is in the manufacture of the company's products.

Ai Group's waterMAP Assist program provided funding to enable Natures Organics to conduct an investigative study to identify practical solutions to minimise water use and maximise reuse. The key objectives of the investigative study were:

- To determine and define major areas of water use
- To identify inefficiencies and efficient water savings opportunities
- To highlight the water and cost saving benefits of implementing identified opportunities

The project encouraged Natures Organics to address their water usage and provided information on ways to reduce potable water consumption on-site.

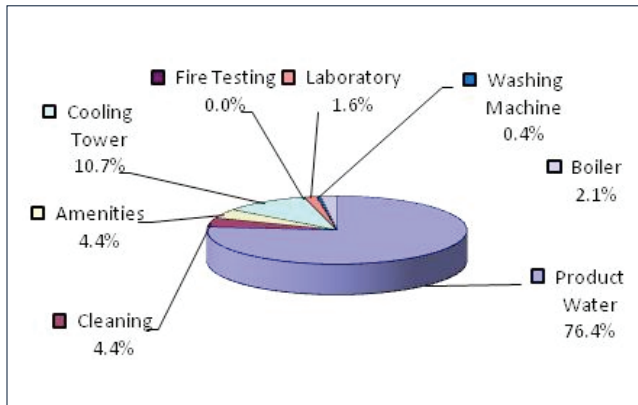
4. Water use

Figure 1 displays the major areas of water use at Natures Organics. 77% of the site's water is used in the manufacture of Natures Organics products. The other major water users at the site are:

- Cooling Tower
- Cleaning
- Amenities



FIGURE 1 WATER USE BREAKDOWN



5. Key findings

The investigative study identified efficiencies in operation of cooling towers, cleaning and amenities as the key opportunities for water saving for Natures Organics. These opportunities to save water were then considered in terms of efficiency, reuse, culture and operation.

The key water saving opportunities identified for the amenities are displayed in Table 1 and involve installation of simple water saving devices.

The opportunity also exists to minimise the need for cleaning, hence reducing water use, by installing collection trays under the compounding tanks hose connector to capture waste product before it leaks onto the floor. This will allow any leftover waste dripping from the hose connector to be

collected and reduce both the time spent in cleaning and water use.

The investigative study also identified several reuse opportunities for Natures Organics, in particular for cooling tower and cleaning. These included: rainwater harvesting; upgrading the wastewater treatment plant to achieve the water quality required for re-use cleaning and cooling towers; design and installation of filtration systems to ensure the operational efficiency of the cooling towers.

Assuming the whole roof area of the production facility is used to harvest rainwater, the potential water savings for each area are displayed in Table 2.

The study also identified potential water savings from improvements in the management of the cooling towers. These included:

- Sub-metering to make up, bleed and drain lines
- Monitor procedures and fix all leakages
- Check that the ball float valve is set correctly
- Periodic maintenance of bleed solenoid valve and conductivity probe
- The option of potentially increasing water recycling within the cooling tower by increasing its cycles of concentration

In terms of developing a water saving culture, the study recommended visual tools such as charts and graphs, as well as posters and stickers, to encourage and engage with employees, enhancing water efficient behaviour within the workplace.

TABLE 1 POTENTIAL WATER SAVINGS IN THE AMENITIES

Recommendation	Estimated Water Savings
4.5/3 L flush Toilets with hand basin	270 kL/yr
Waterless urinals	90 kL/yr
5 L/min hand basin mixers	75 kL/yr
4.5 L/min kitchen mixers	563 kL/yr
5 L/min showerheads	2 kL/yr

TABLE 2 RAINWATER HARVESTING POTENTIAL SAVINGS

Area	Tank size	Estimated Water	% savings
Toilet flushing	15 kL	382 kL/yr	96 %
Cleaning	25 kL	1,263 kL/yr	82 %
Cooling tower	150 kL	4,740 kL/yr	60 %

6. Project benefits

The benefits of the study for Natures Organics included:

- Provision of a water balance for the site and identification of key areas of water consumption
- Identification of options for reducing water consumption in the three major water use areas with a total potential water reduction of 2 ML/yr (6% reduction of total water consumption, or approximately 25% reduction excluding water consumed in the manufacture of products)
- Provision of a platform for further investigation of water efficiency projects

Further information

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Ai Group's waterMAP Assist program, supported by the Department of Sustainability and Environment (DSE) has enabled Ai Group to work with large industrial water users to identify and implement water savings.