

Case Study

Lion Dairy & Drinks

Water Filtration & Dechlorination Upgrade



The Problem

Water is a vital ingredient for Lion's fresh and long-life orange juices produced at their Smithfield plant in NSW. Maintaining water purity is essential to product quality, safety and shelf-life.

However, the plant's ageing water filtration and Granulated Activated Carbon (GAC) dechlorination system was leaking, wasting water and threatening electrical infrastructure. Failure risked costly downtime, product spoilage and recalls—while inefficient water use drove up costs.

Key Issues Identified:

- Ageing filtration and GAC dechlorination equipment leaking water
- Risk of plant shutdown and product safety compromise
- Need to improve water efficiency without interrupting production

The Solution:

Waterform made several practical recommendations to help Lion reduce water consumption, cut operating costs, and improve overall plant efficiency. The most significant initiative was the installation of a new PLC-programmed automated GAC dechlorination system at the Smithfield plant.

This upgrade came with a number of smart, well-executed decisions:

- The system was retrofitted into the existing setup, meaning no functional equipment had to be removed.
- This allowed the plant to remain fully operational throughout the installation — a major win in terms of time and cost savings.
- The new system was custom-designed to fit a tight installation space and had to be craned onto a mezzanine level before installation.
- Two out-of-service, rusty steel tanks occupying valuable space were cut up in-situ and removed manually, piece by piece.

Despite the complexity, Waterform worked carefully around the plant's production schedule, minimising disruption and ensuring there were no unexpected shutdowns. The whole process was tailored to support Lion's operational needs without compromising production.

The Outcome:

Lion's new FilterPak dechlorination and filtration system has already delivered measurable benefits. By addressing the failing infrastructure, the company has:

- Reduced water wastage by eliminating leaks from the old system.
- Avoided potential downtime and costly damage that could have occurred with equipment failure.
- Increased its treatment capacity, allowing the plant to comfortably scale with growing demand.

Most importantly, Lion continues to meet strict Australia and New Zealand food safety standards, giving consumers confidence in the safety and quality of its juice products — just as they've always trusted.



**WATER
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