MONASH University

MONASH INDUSTRY TEAM INITIATIVE (MITI)

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SITE WATER RESOURCE STRATEGY

Tom O'Donnell, Tom Stevenson

INTRODUCTION

COMPANY BACKGROUND:

Established by the Crothers Brothers over two decades ago, Burra Foods is an Australian dairy ingredient processor, located in Korumburra, South Gippsland. Since the company's inception, it has been producing and marketing value-added dairy products, now competing on the global food manufacturing market.

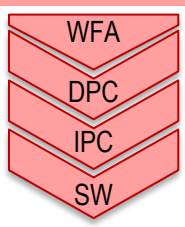
PROJECT SCOPE:

- Managing water as a resource onsite through four tiers; water for addition, direct product contact, indirect product contact and service water
- Identification and mapping of water users for the determination of future site expansion and asset maintenance
- Control of water quality standards, particularly foreign matter and dissolved components

PROJECT OUTCOMES

WATER QUALITY SPECIFICATIONS

The first task was to clearly define the many different types of water used onsite. Quality specifications were then determined for each water type, as well as the total number of users onsite.



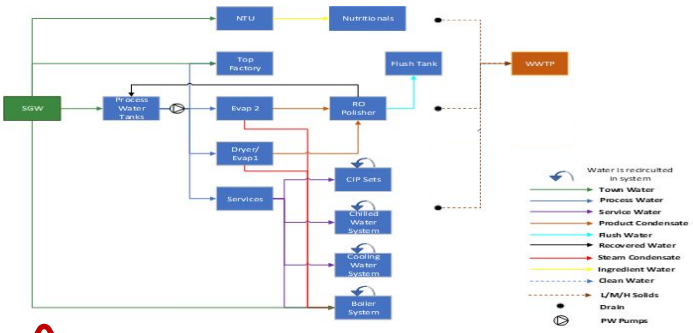
Water For Addition: water treated by the nutritionals treatment unit, before it is suitable as ingredient water.
Direct Product Contact: residual water that may come into contact with product during processing or CIP.
Indirect Product Contact: water that comes into conduct with the same surfaces as product.
Service Water: water that stems from the process water tanks and is used for a variety of roles

SERVICE CAPACITY MODELLING

Limitations to site expansion were identified and suggestions were made following analysis of Burra Foods pumping systems. Process water pumps had the largest capacity limitation

SITE WATER BLOCK FLOW DIAGRAM

A block flow diagram was created to help visualise the flow paths of different water types onsite.



CONDENSATE RECOVERY

An opportunity to recapture steam condensate from the dryer, as boiler feed water was identified, as it was currently going to wastewater. A control scheme was implemented to ensure the quality of the water remained suitable for steam production.

DAILY WATER TRACKER

Each day the tracker calculates the amount of water entering and exiting the site, in addition to the water usage by each area. Limitations occurred during development due to a lack of accurate data.

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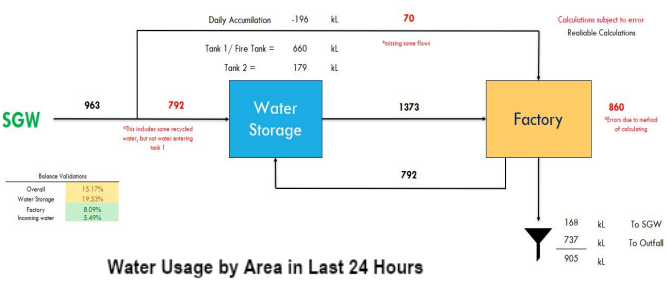
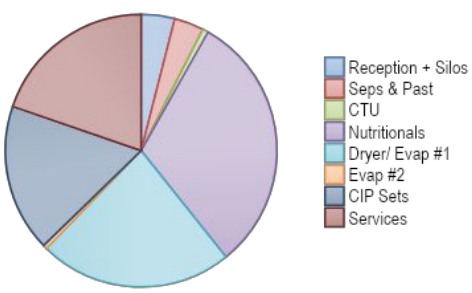


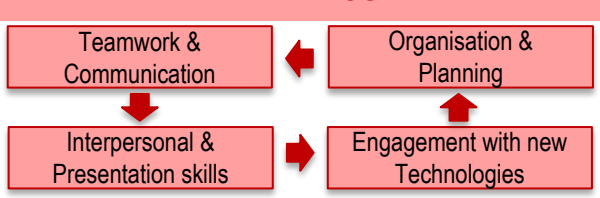
Water Usage by Area in Last 24 Hours



FUTURE RECOMMENDATIONS

- Installation of additional flow meters at key points around the site
- Increase process water supply and storage capacity
- Increase water filtration capacity to meet nutritionals demand
- Further investigate the capacity of the Wastewater Treatment Plant to meet increase production demand

LEARNINGS



A project initiative of the Victorian dairy industry proudly sponsored by the Gardiner Dairy Foundation in partnership with Monash University

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