

MONASH INDUSTRY TEAM INITIATIVE (MITI)

The Science of Wastewater Treatment

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INTRODUCTION

BACKGROUND

Burra Foods is an Australian dairy ingredient processor that has been operating for in excess of 20 years. Initially started by the Crothers brothers, Grant and William, it is now a globally renowned company selling the highest quality products. The manufacturing plant is located in South East Victoria, Korumburra and is also where this project was carried out.

WASTEWATER TREATMENT PLANT (WWTP)

The WWTP at Burra Foods aims to sort, treat, and dispose or recycle the terminal streams from the production facility. Unit processes such as microfiltration, reverse osmosis and bioreactors are some of the stages used to treat the wastewater before it is discharged.



SCOPE

The scope of this project included the following areas:

- An excellent process description with supporting documented science that will be used as training material for current/future employees
- A calculated current design capability of the WWTP
- A prioritized and supported action plan to introduce improvement initiatives

Although the scope was initially detailed prior to the commencing of the project, there was also room for additional tasks to be taken on.

OUTCOMES

Based on the scope of the project and the various additional tasks that were addressed, the following outcomes were achieved:

- A training document that was utilized in onboarding a new WWTP operator
- Investigation and analysis into a prospective phosphorus removal technique and upgrade to the WWTP
- Launched initiative to upgrade the radial fan press at WWTP
- Presented a Tech Talk to other members of the business to introduce and educate about the WWTP



RECOMMENDATIONS

Based on testing, analysis, and observation the following recommendations have been made:

- Additional radial fan press module should be installed onto existing drive shaft to increase WWTP capacity
- Automate CIP processes on radial fan press to increase safety at WWTP
- Investigate opportunities for phosphorus removal via secondary DAF setup

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