MODULAR MEMBRANE BIOREACTOR SYSTEM ALLOWS NOOSA YOGHURT TO EXPAND OPERATIONS

CLIENT

Noosa Yoghurt Company, named after an Australian town by the same name, produces a variety of delicious yoghurts in many flavors and sizes. Its production plant is located in a rural area in Bellvue, Colorado, USA.

Technology
ADI® Membrane Bioreactor (MBR)

Sector
Food & Beverage

Location
Colorado, USA

CHALLENGE

When Noosa first began making yoghurt, the plant was able to mix dairy wastewater with manure and apply it to land as a fertilizer. As production increased, this method of wastewater disposal became unsustainable, so Noosa made the environmentally-responsible choice of investing in on-site wastewater treatment.

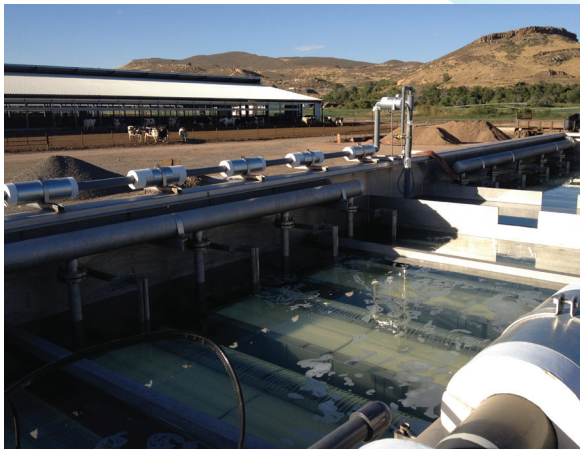
The company needed a reliable solution that would adapt to varying flows and wastewater characteristics, comply with strict environmental regulations, and generate an effluent suitable for reuse on-site or direct discharge.

SOLUTION

The ADI Systems team worked with a local engineering firm on the overall design of the ADI® membrane bioreactor (MBR) wastewater treatment system for Noosa. An equipment package supplied by ADI Systems was integrated into the plant design, which consisted of prefabricated modular membrane tanks, pumps, scour blowers, and instrumentation.

This prefabricated membrane tank was selected because of its compact footprint, simple "plug-and-play" installation, and its proven ability to produce high-quality effluent. The physical membrane barrier provides a great deal of flexibility and stability in the biological process, as the ADI® MBR system can operate at higher mixed liquor suspended solids (MLSS) concentrations than conventional activated sludge systems.

The system was sized and designed with expansion in mind. As demand for Noosa products continued to increase, the company soon realized that wastewater production would quickly exceed original projections. The future design flow would be generated much sooner than expected, and the increase in permitted discharge flow meant that Noosa would need to meet stricter discharge limits on nitrogen and phosphorus. Noosa contacted ADI Systems to supply a second prefabricated membrane tank in order to double the treatment plant capacity, as well as evaluate the overall MBR system process design in order to achieve biological nutrient removal.



RESULTS

Noosa's state-of-the-art MBR system ensures discharge limits on biochemical oxygen demand (BOD), total suspended solids (TSS), ammonia nitrogen (NH_3-N), total nitrogen (TN), total phosphorus (TP), and fat, oil, and grease (FOG) are consistently met:

- BOD < 30 mg/l (permitted), < 10 mg/l (operating results)
- TSS < 30 mg/l (permitted), < 2 mg/l (operating results)
- NH_3-N < 15.7 mg/l
- TN < 14.8 mg/l
- TP < 1.7 mg/l
- FOG < 10 mg/l
- pH range of 6.0-9.0

The treated water is reused for cleaning cow barns and irrigating crops.

Noosa's commitment to environmental compliance is evidenced by its investment in responsible on-site wastewater treatment. ADI Systems is pleased to be helping Noosa remain an environmental steward.

ADI® Systems
an EVOQUA brand

+1 (800) 561-2831 (toll-free) **1 (506) 452-7307** (toll) **www.evoqua.com**

ADI is a trademark of Evoqua its affiliates and subsidiaries in some countries.

All information presented herein is believed reliable and in accordance with accepted engineering practices. Evoqua makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. Evoqua assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products

© 2017 Evoqua Water Technologies LLC Subject to change without notice ADI-Noosa-CS-1117