

HIGHLIGHTS

New Magnesium Hydroxide Plant in Qld opened

Goulburn Valley Water signs contract for MHL

Developing AQUACal+ for fish farming



CEO Phil Hodgson (centre) with Gold Coast Councillor Paul Taylor (right) and Red and White MD Tony Mayer (left) at the official opening our new facility in February.

EDITORIAL

Welcome to issue number 15 of the Calix Newsletter.



Phil Hodgson
CEO

The Calix News has been designed to communicate with a variety of stakeholders, focusing on the company's achievements, capabilities, R&D insights and people.

Welcome to Issue 15 of the Calix Newsletter. In this issue, we cover our most recent significant milestone - the completion and official opening of our new Magnesium Hydroxide Liquid production facility on the Gold Coast in Queensland. Last year Calix won a Commercialisation Australia Grant to help fund the development of our Magnesium Hydroxide business (see Issue 13 of Calix News). With the assistance of this program Calix has now achieved a sustainable Magnesium Hydroxide Liquid business with production facilities in two states. The Magnesium Hydroxide Liquid business is the first of many "spin-out" opportunities being developed from our core calcination technology.

Inside you will also find a fascinating article on improving aquaculture productivity using Calix's newest product, AQUACal+ high reactivity liquid, and a pleasing announcement on our success in January in winning a 3 year contract with Goulburn Valley Water, one of the largest single users of Magnesium Hydroxide Liquid in Australia.

RECENT MILESTONES

CALIX OPENS NEW MAGNESIUM HYDROXIDE LIQUID PRODUCTION PLANT ON THE GOLD COAST IN QUEENSLAND.

Calix is pleased to announce its newest and most advanced Magnesium Hydroxide Liquid (MHL) production plant was successfully commissioned in late December 2014. The performance parameters for the plant, located on the Gold Coast in Queensland, have already exceeded those of our first plant built in late 2013 at Bacchus Marsh in Victoria.

The plant has a capacity of 6000 tonnes per annum per operating shift and can easily scale to grow with our customers' needs. Using Calix's unique high reactivity MgO powder as a feed source, the plant is capable of producing a batch of 60% solids MHL in less than 90 minutes, a world first.

The plant provides initial employment for 2 fulltime positions in Queensland carrying out a range of duties including plant

operations, business development and customer site servicing. Future growth should see these numbers double to include another plant operator and full time site service technician.

Magnesium Hydroxide Liquid is safe and environmentally friendly, and an indispensable part of both municipal and industrial waste water treatment processes. Major users in the region include Gold Coast City Council, Unity Water (Sunshine Coast), Gympie regional Council and Toowoomba Regional Council.

The plant is currently servicing all of Calix's Queensland customers with plenty of additional capacity available for further growth, and was built with the kind assistance of a Commercialisation Australia grant.



State MP for Gaven, Sid Cramp (left) talking with our Ralph Lloyd-Smith.

WASTE WATER

GOULBURN VALLEY WATER SIGNS ON TO USE ACTI-MAG™ WTN60 FOR WASTE WATER NEUTRALISATION.



Calix is pleased to announce its largest contract to date for supply of Magnesium Hydroxide Liquid (MHL) to Goulburn Valley Water (GVW).

GVW has used MHL for waste water alkalinity control for over 10 years at the Shepparton wastewater management facility in northern Victoria.

The facility receives a mixture of domestic and industrial wastewater from the Shepparton city area, which is then dosed with MHL and digested in a high rate anaerobic lagoon to treat the water. Methane produced in the treatment process is used to generate electricity which is exported to the grid.

Deliveries of MHL began in mid-January this year and will continue until late April / early May when the fruit canning season finishes. The rate of consumption of MHL during this period is high, with 25 tonne deliveries being made to the GVW facility every 2nd day on average.

Calix has relished the challenge of quickly ramping up production at its unique MHL manufacturing facility in Bacchus Marsh, Victoria, to meet this demand.

Overall Calix expects to deliver approximately 900 tonnes of MHL over the January to May period for this contract.



INTRODUCING

TROY MARSHMAN, PLANT OPERATOR.

Troy is originally from South East Gippsland in Victoria, grew up in Central Northern Tasmania on the family's large scale dairy farm, he left school at 16 to work on the family farm and went on to take over the farm in a share farming partnership with his elder brother, this partnership lasted for 5 years until the family farm was sold to pursue other opportunities.

Upon moving to the Gold Coast at 21 he took on a role as a plant operator at Nucrush Quarries, Troy stayed with this employer for 11 years and evolved to a Leading Hand position after 3 years and the last 4 years as Quarry Supervisor overseeing 9 full time staff and managing all sub-contractors including drill/blast operations, maintenance operations and purchasing/ procurement duties for the 400T.P.H crushing & screening plant. After such a long period of time, it was time for a change when the opportunity with Calix's new Gold Coast plant arose.

Troy now manages the Gold Coast plant and provides assistance to Calix's Queensland Business Development Manager Ralph Lloyd Smith, who also works out of the Gold Coast Office. Outside of work Troy enjoys spending time with his wife Nicole and 2 sons Zac and Brock and a large close knit extended family. Weekends usually consist of four wheel driving adventures to find new and interesting places to hunt, fish, and kayak and ride trail bikes.

R&D UPDATE

HELPING AQUACULTURE IMPROVE PRODUCTIVITY.

The Challenge: Meeting the Nutritional Needs of the developing world.

In January 2015 the world sourced more of its marine protein from "aquaculture" farms rather than oceans, lakes and rivers for the first time. The significance of this for the sustainability of wild marine stocks is heightened by growing concern over the depletion of these stocks from over-fishing. Aquaculture farming is a rapidly growing industry that is particularly important to the nutritional needs of the developing world.

Like all forms of farming, aquaculture concentrates natural processes to produce food in a more efficient manner. This concentration of activity also concentrates waste products from the farming which can restrict the overall efficiency of the farm and lead to environmental problems.

How can Calix Help?: AQUACal+ treating fish ponds.

Calix began work in 2014 looking at ways in which its highly active magnesium-based products might be used to improve the yields achieved in aquaculture production and also help improve environmental performance. After an extensive study of the relevant literature Calix developed a modified water treatment product (AQUACal+) based on its high reactivity powders. A number of small field trials were undertaken in Australia in which the farming ponds were treated with AQUACal+. These trials showed great promise with indications that fish were healthier and potentially adding weight faster. There were definite indications that the pond water and bottom sludge conditions were significantly more favourable to fish health and growth, and that downstream environmental impacts from aquaculture were more easily manageable.

In September 2014 a large scale trial began in the Philippines. In this trial two four-hectare fingerling ponds were used. One was treated with AQUA-Cal+ and the other was not. Both ponds were otherwise managed in the normal fashion for this particular farm. 250,000 fingerlings were introduced to each pond and grown for 12 weeks, after which they were transferred to ocean pens for final grow-out. At the time of transfer the fingerlings were counted and an average weight determined.

Initial Outcomes: 83.5% increase in fingerling pond yield.

The table below provides the results observed, with the treated pond exhibiting an 18% reduction in mortality and a 55% increase in average weight. The overall yield increase was a very significant 84 %. These results have the potential to create a step change in the productivity of aquaculture farming.

Pond Treatment	Initial Fry in pond (count)	Number of Fingerlings harvested after 12 weeks (count)	Average weight (grams)	Pond Yield (kgs)
Aqua-Cal+ treated Pond	250,000	162,151	34.9	5,659
Control pond	250,000	137,668	22.4	3,084
Change %	Nil	17.7% increase	55.8% increase	83.5% increase



Weighing fingerlings.



Fingerlings being transferred to ocean grow out cages.

The fingerlings from the trial will be followed throughout the grow-out phase to determine whether the improved survival rate is maintained and if the additional weight gain as fingerlings translates to reaching the 800g weight target faster.

Following fingerling transfer, the ponds were drained as per normal practice. The pond bottom of the treated pond was significantly cleaner than the untreated pond. Again - there appears to be significant advantage for treatment with AQUA-Cal+ in the turn-around time for the next growth cycle and the downstream environmental impacts.

A second trial is underway with the objective of verifying the results from the first trial and undertaking more detailed studies of the pond conditions.

Get in touch with us today

call +61 2 8199 7400 or email: info@Calix.com.au

For more information about Calix technology, products and services, visit www.Calix.com.au
Calix Ltd ABN 36 117 372 540 Head Office: Level 1, 9 Bridge Street Pymble NSW 2073



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