

## ***“Every drop counts” – The Australia Meat Holdings Pty Ltd water efficiency campaign***

### **Australia Meat Holdings – Dinmore, QLD**

#### **The problem**

Prior to the commencement of a water efficiency program, water consumption on plant at Dinmore was at an all-time high – up to 5.5 ML per day. The existing wastewater treatment plant was designed to accommodate 6 ML per day, and the design capacity was beginning to be stretched to its limit. Wastewater treatment performance was suffering as a result, which put at risk compliance with the company's regulatory requirements with the EPA.

In addition to this, it was costing AMH many thousands of dollars per week in purchase of water and the additional cost of treatment. They were also looking at a major investment to expand the wastewater treatment system to accommodate these flows. The Company decided that this was not a viable alternative and, at the end of the day, building additional capacity was not addressing the source of the problem, merely the symptoms.

#### **The solution**

It was agreed that rather than build additional capacity, they would recover the capacity in the existing wastewater treatment system by reducing their water consumption. From that point in time, AMH commenced the Water Efficiency Campaign and introduced a target consumption figure of 4.5 ML/day. At the beginning of the Campaign, it was not certain that the goal could be achieved, but the results have proven that it could be, and is being, achieved consistently.

To achieve this goal, firstly a water reduction committee was established, which included representatives from Senior Management, Engineering, Environmental and Production. A logic-based mapping exercise then followed, using a portable flow meter that was installed across various water supply lines to determine flows over time. Once a snapshot of relative flows across the plant were determined on a line by line basis, with the assistance of MLA, over 12 permanent flow meters were installed and linked to the existing SCADA network to enable each flow to be measured continuously and to establish baseline data.

Engineering, Environmental and Production employees were involved in the mapping of the water consumption across the plant and a comprehensive training and awareness program was developed and presented to over 200 staff on the importance of environmental issues and, in particular, how to use less water. Senior Management has been and continues to be highly supportive of the Program throughout its duration, with reporting on progress being tabled at each Corporate Environment Committee meeting.

A wide variety of innovative and eco-efficient measures were undertaken to help reduce consumption. Training and awareness to help modify employee behaviour was a critical component. The installation of AAA rated water nozzles for wash basins; installing effective and efficient spray nozzles; placing solenoids on various areas of the plant to control the application of water depending on production; controlling pressures to various supply points; and optimising recycling, have all contributed to achieve this outstanding result.

The installation of the flow meters allows AMH to measure water use. With innovative use of a series of novel changes to programming, the data is able to be collected through the SCADA network and tracked through linking software programs. This allows data to be presented against a 30-day rolling datasheet on a daily basis. This innovation allows the company to identify when there is an obvious increase in otherwise 'expected' flows, thereby providing a tracking mechanism to flag possible leaks or excursions from standard practice.

### **The benefits**

As a result of AMH's Campaign, the following environmental and financial benefits have been realised:

- Town water consumption has reduced to 4.5 ML per day. This is a reduction in water consumption by a very significant 184 ML p.a. This has significantly reduced AMH Dinmore's demand on this precious natural resource. The 184 ML is now available for use by other members of the local community;
- Overall performance of the wastewater treatment system has increased due to the increase in the hydraulic retention time. This gives the treatment system more time to do its work;
- Delayed indefinitely further capital expenditure of around \$2 million to increase treatment capacity by installing an additional Sequencing Batch Reactor (SBR).
- Saved around \$300,000 p.a. straight off the bottom line on water purchasing and treatment costs alone.
- The plant has now reached new reduced levels of water consumption which staff at Dinmore believe are 'cutting edge' and extend beyond world's best practice on kL/tHSCW and a litres/head basis for an integrated beef plant.
- Through the training programs that have been undertaken, staff and employees are fully aware of the importance of saving water and actively pursue water reduction opportunities where possible throughout the plant.

Because of its success and its cost-effectiveness to implement, this Campaign is now being implemented throughout all of AMH's Processing Facilities as it can be readily applied to any plant with minimal capital outlay.

**The cost**

The capital and operating costs to deliver this highly successful achievement for Dinmore includes:

Capital: \$65,000 (approx.) Operating: \$10,000 p.a. (approx.)



*One of Dinmore's Environmental Officers monitoring water flows through the plant on a 'real-time' basis on the SCADA Network*