



# HEALTH, SAFETY & ENVIRONMENT REPORT 2009

## Lytton, Australia

Lytton in Queensland, Australia, is one of the main Nufarm sites formulating insecticides

### The plant

The plant manufactures a range of insecticide, fungicide, plant growth regulators and adjuvant products principally for the agricultural market. The site also produces the suSCon range of slow release, solid, insecticide products for both domestic and export markets. During 2008 the consolidation of the two historical Queensland manufacturing plants was completed, culminating in the successful decommissioning and sale of the Brendale site.

### Health and safety performance

During 2008 we suffered one injury involving loss of time when an operator bent over to open a valve and strained his back. The site also incurred one MTI when an operator required stitches to his lip after a tool slipped from his gloved hand.

Andrew Smith was appointed HSEQ Specialist for the site in mid-2008 which is a new position. This additional resource has already delivered enhanced chemical safety training for shopfloor staff, as well as improved unusual incident investigations. Andrew is now focused on coordinating our 5-year MHF safety case review.

The inaugural site HSE Workshop was held in December 2008. Attended by the National HSE Manager, the role of the workshop was to enable a cross section of staff to discuss the site's HSE performance, provide specific training in HSE topics and set objectives for the following year.

As part of his Certificate IV "On-Site Environmental Officer" course, Michael Munro, Environmental Chemist, has significantly upgraded our Environmental Management System. This encompasses our environmental licence compliance, waste management, stormwater management and spill management plans. The site was audited by both the EPA (Environmental Protection Agency) and HICB (major hazard facility regulator) who both commented on the improvement of the site.



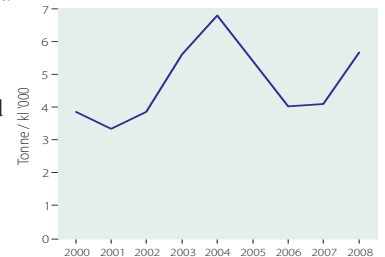
### Wastes (cont)

Part of our new controlled release plant

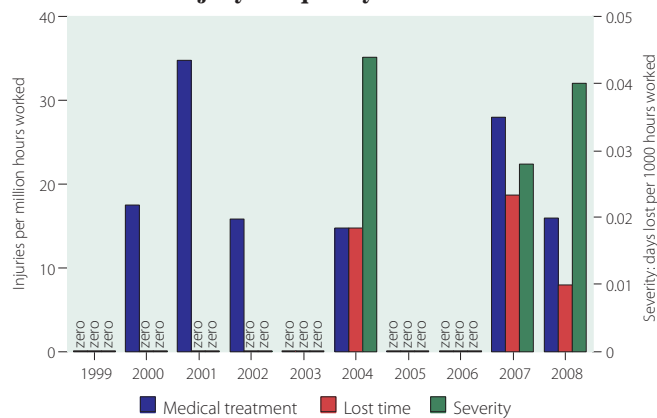
operations. The first full operational year of the SC plant has been the largest contributor to the increase in packaging waste. As this production was transferred from Brendale, the net waste/production of this plant is unchanged. However, it has become more difficult to send pesticides liquid waste to industrial waste treaters due to restrictions placed upon their discharges. We have been experimenting with different technologies of onsite waste treatment, such as oxidation, hydrolysis and enzymatic degradation. The latter, using a Landguard™ enzyme designed to destroy organophosphates has been the most successful. The table below indicates a substantial reduction in waste requiring industrial treatment during 2008. We report our waste in the graph below at the time we dispatch the waste for external destruction. Although waste generation has been significantly reduced, the lack of disposal

options over the last two years has contributed to under reporting of waste. Based on above mentioned work on enhancing our disposal methods, 2009 is predicted to show a significant rise in waste as the backlog volumes are cleared before a return to reduced baseline levels in 2010.

### Production



### Injury Frequency Rates



Note: All lost time injuries are also counted as medical treatment injuries

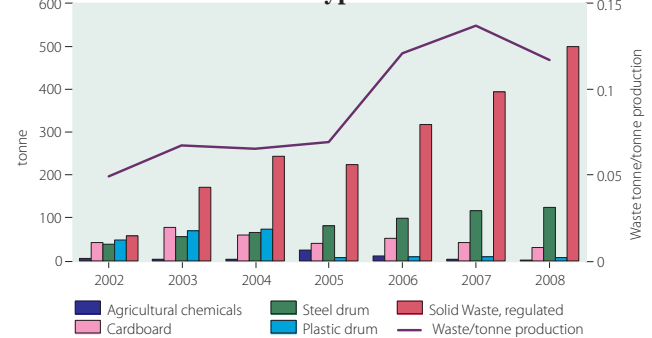
### Wastes

Last year we reported that improvements in data gathering have contributed to an increase in the reported waste quantities. We have since further refined the reporting system. The knowledge gained has helped us to improve efficiencies on the plant. Changes made by the plant in response have included:

- scheduling to minimise product changeovers in the plant thus reducing the amount of equipment washing required
- minimising the concentration of pesticides in waste streams
- segregation of waste streams containing problem actives
- better analysis and characterisation of waste streams

The bulk of our solid waste (called regulated waste below) is very lightly contaminated packaging and general waste from

### Waste types



### Waste destinations

tonne	2002	2003	2004	2005	2006	2007	2008
Industrial treatment	4	2	2	25	8	2.8	0.20
Landfill	57	171	244	223	317	393	500
Recycling	128	77	197	128	160	167	162
Bioremediation	NA	1.6	2	3	2	NA	NA
<b>Total</b>	<b>189</b>	<b>252</b>	<b>445</b>	<b>380</b>	<b>486</b>	<b>563</b>	<b>662</b>

## Complaints

We are pleased that we have not received any odour complaints from our neighbours for the fourth year running. The improvements to our scrubber system four years ago are responsible for the reduction in odour.

## Expenditure

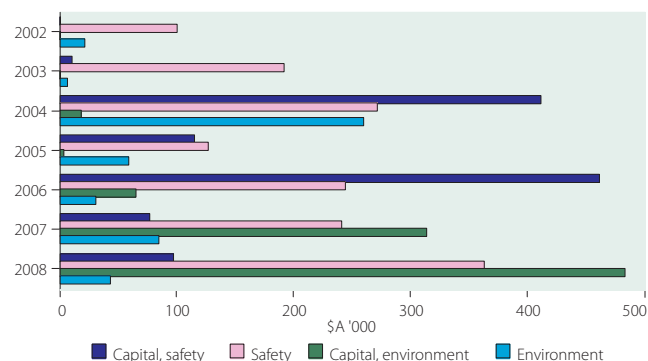
During 2008, our capital expenditure on safety included:

- an expansion of automatic fire detection system
  - upgrading lighting around sections of the plant, and
  - improvements in dry break couplings for hoses carrying pesticides
- The capital expenditure for environmental matters included:

- replacement of the old waste water tank and adding a tank for on-site treatment
- increase in storm water capture and increase in the capacity of the on-site irrigation system, and
- a research program to determine how we can re-use some (or most) of the captured rain storm water in production

An increase in expenditure on safety is predominantly due to increased training and additional people involved in HSE projects.

### Expenditure



Waste treatment and holding tanks

## Waste minimisation team

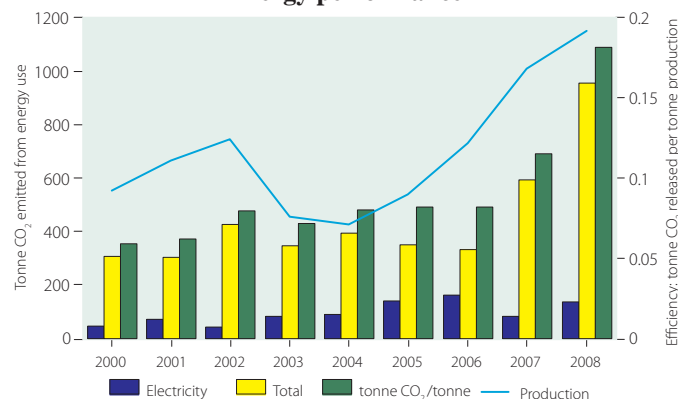
Late in 2008, a Waste Minimisation Team was formed. Through the initiation of the Waste Minimisation Team, the site envisages that the volume of waste generated in consequent years to be reduced while still increasing the output of the site. The Waste Minimisation Team covers a broad representation of the site from Production, Laboratory, Inventory and Management.

In late 2008 we installed a plastics compactor on site for all clean pallet wrap and redundant plastic bottles to be compacted, baled and collected by a recycling company. This material was previously added to the general waste and sent to secure landfill. This process has seen an economic return through both a reduction in the general waste for landfill and a rebate offered by the recycling company.

## Energy use

During 2008 there has been a significant increase in the use of electricity. In late 2007 an electrically heated water bath was installed and the suspension concentrates plant (SC plant), transferred from Brendale, was commissioned. The SC plant has a significant number of heaters and electric drives to grind and suspend particles of active ingredients in an aqueous concentrate, resulting in a significant energy demand. The suSCon production plant (CR Plant) commenced its commissioning in November 2008 and is also very energy intensive. As both plants having been transferred from Brendale, the net energy demand of this production has not increased.

### Energy performance



## Bridge to Brisbane fun run

On Sunday, 7th September, eleven Nufarm Lytton employees took on the challenge of the Bridge to Brisbane Fun Run. A 10km course starting at the Gateway Bridge was completed by the competitors following along the Brisbane River before arriving at the RNA showgrounds.

There was a healthy pace set by some members of the team while for others, the greatest achievement was to pop a bottle of champagne atop of the gateway bridge and toast each other for conquering the opening few steps of the course. At nearly 80 metres above sea level, the views were appreciated, as was the once a year opportunity to walk across the bridge. Being only a few kilometres from the Lytton site, many are all too familiar with the views, usually from their cars whilst stuck in the notorious traffic.



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