



# Ensuring Our Future

Welcome to Orica's tenth annual safety, health and environment (SH&E) performance report.

In 2004 Orica made good progress on its SH&E objectives, in a year when acquisitions produced significant increases in activity across the company.

The majority of our Challenge 2005 SH&E milestones were met or exceeded in the 2004 year. It is deeply saddening to report however, that a fatality occurred at the Chile Collahuasi site in July 2004. This tragic fatality further confirms the need for constant vigilance in safety.

## Safety & Health

Safety has always been a cornerstone of Orica's culture and it is pleasing to report that during 2004 we achieved a 31% reduction in our primary safety measure, the All Worker Recordable Case Rate. We also achieved our highest ever compliance with exposure standards, a key measure in protecting the health of our workforce from the effects of hazardous substances.

## Environment

Remediation activities were undertaken at a number of contaminated sites during the year, with significant focus on Botany groundwater. While addressing legacy issues will not always be easy or instant, we are committed to achieving the best possible outcomes required for our communities and our employees.

An area of ongoing concern is the frequency of incidents involving the transport of our products. We are continuing to work with our carriers and drivers to reinforce company procedures and high standards, so that we can continue to reduce the occurrence of these incidents.

## Sustainability & Resource Conservation

Orica continued to make good progress in resource conservation during 2004 and the company exceeded its Challenge 2005 milestones in three key areas. The company's energy consumption per tonne of production has reduced by 18% since 2000, while carbon dioxide emissions from energy use per tonne of production have reduced by 27%. Water consumption per tonne of production has reduced by 23% since 2000.

We are committed to the principle of sustainability and have embarked on a project to further develop our vision of sustainability by understanding the full impact of our activities, which will assist to ensure our future through valuing people and valuing the environment.

We are also establishing Challenge 2010 SH&E milestones in order to continue our commitment to further improvements in our performance.

I spend much of my time talking with employees, customers, investors, community representatives, Government, and other stakeholders. It is clear that they all strongly support Orica's determination to move to sustainable operations. We are achieving strong improvements on our SH&E measures, but we all recognise that there is much to be done. We will need to work with all stakeholders to achieve our goals.



**Malcolm Broomhead**  
Managing Director and  
Chief Executive Officer  
Orica Limited

# Orica's Safety, Health & Environment Policy

At Orica we believe that all work related injuries, illnesses and environmental incidents are preventable.

We will manage all our activities with concern for people and the environment and will conduct our business for the benefit of society and without compromising the quality of life of future generations.

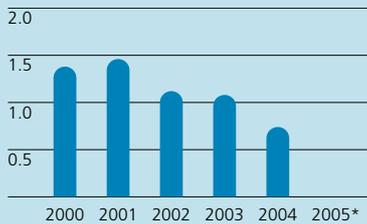
In particular we will:

- Strive to ensure our facilities operate to the highest standards to protect our employees, contractors, neighbours and the environment
- Continue to seek ways to efficiently use materials and energy
- Sell only those products that can be produced, transported, stored, used and disposed of safely
- Provide appropriate information and/or training on the safe use and disposal of our products to our customers and consumers
- Seek to develop new or improved products and processes to improve the contribution we make to the quality of people's lives and to minimise the impact on the environment
- Require every employee and contractor working for us to comply with relevant legislation and with this policy and we will provide them with the necessary training
- Encourage employee initiatives that contribute to a safer and improved environment at work, at home and in the community
- Set challenging targets and measure progress to ensure we continuously improve our safety, health and environmental performance
- Communicate openly about our activities and report progress on our safety, health and environmental performance

We make this commitment to our employees, contractors, customers, shareholders and the community as we work towards our vision of:

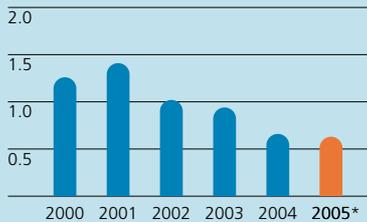
**'No Injuries to Anyone, Ever'**  
**'Value People and the Environment'**

# Challenge 2005 Progress Report



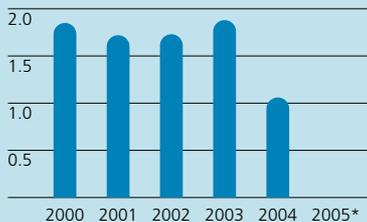
## All Worker Recordable Case Rate

The Recordable Case Rate is the number of injuries and illnesses per 200,000 hours worked (US OSHA system). This is equivalent to the hours worked by 100 people in a year. The All Worker Recordable Case Rate includes both employees and contractors. From 2004, it was adopted as the primary safety measure for the workforce engaged by the company at its operating sites. The All Worker Recordable Case Rate for 2004 was 0.74. No Challenge 2005 milestone was set.



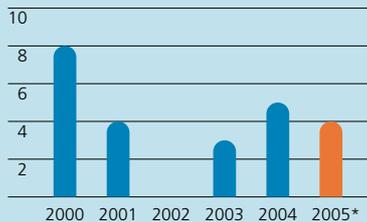
## Employee Recordable Case Rate

The Employee Recordable Case Rate for 2004 was 0.66, close to the Challenge 2005 milestone of 0.63. This was the primary safety measure for the company until 2004.



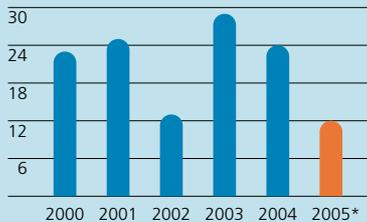
## Contractor Recordable Case Rate

A large number of contractors also work at Orica sites, but some are not under the direct control of Orica. The 2004 Contractor Recordable Case Rate was 1.06. This included one fatality. No Challenge 2005 milestone was set.



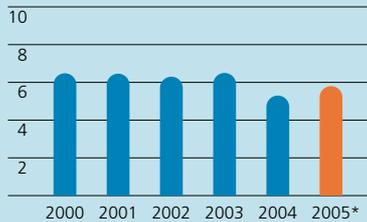
## Site Incidents

This measure is the number of serious site losses of containment. For 2004, the number was 5. Sites also record and investigate all minor spills.



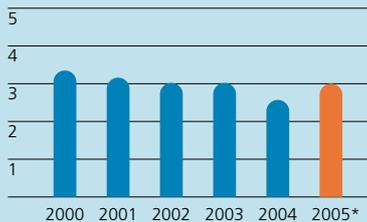
## Distribution Incidents

This measure is the number of serious incidents involving Orica products during transportation. For 2004, the number was 24. There were 2 contractor driver fatalities and 7 injuries associated with these incidents.



## Energy Usage per Tonne of Production (GJ/te)

Energy usage per tonne of production decreased by 18% from the 2000 baseline. Total energy consumption for 2004 was 23,449 TeraJoules.



## Water Consumption per Tonne of Production (KL/te)

Water usage per tonne of production decreased by 23.4% from the 2000 baseline. Total water consumption for 2004 was 11,346 million litres.

\* Challenge 2005 Milestone



The ultimate goal is for Orica to conduct its business with zero injuries, zero illnesses, zero losses of containment of chemicals and zero wastes.

However, it is recognised that this will not be easily achieved and so the company set itself performance improvement objectives with milestones it wanted to reach, and preferably pass, in a number of key areas by the year 2005. These Challenge 2005 milestones and relevant measures were first described in the 2000 Annual SH&E Report and progress has been measured each year.

In 2004, Orica met or exceeded many of the Challenge 2005 milestones. In order to continue moving towards its goals of becoming safer, healthier and more environmentally responsible, Orica has developed Challenge 2010 milestones for the remainder of this decade, which are in the process of being released.



## Safety and Health

### Challenge 2005 Targets:

- Reduce the rate of injuries and illnesses by at least half over the five year period (Employee Recordable Case Rate to be halved from 1.26 in 2000 to 0.63 in 2005 - based on the US OSHA system where rates are per 200,000 hours, which is equivalent to the hours worked by 100 people in a year).
- High compliance will be maintained in the illness prevention programs (>98% in 2005).

In 2004 the company adopted the All Worker (ie. employees and contractors) Recordable Case Rate as its primary safety measure. Despite a 27% increase in total workforce hours across the company due to acquisitions, there was a 31% improvement in the All Worker Recordable Case rate from 1.08 in 2003 to 0.74.

The Employee Recordable Case Rate for 2004 was 0.66, down from 0.94 in 2003. This compares favourably with the Challenge 2005 milestone of 0.63. The Contractor Recordable Case Rate for 2004 was 1.06, significantly better than the trend over previous years.

This improvement in our safety performance was overshadowed by the distressing death of a worker during the year. In July 2004, a mechanical contractor at our Chile Collahuasi Mining Services site, was fatally injured when a moving vehicle struck the stationary vehicle he was working on. A thorough investigation has been conducted, from which a number of procedures are being reviewed and the learnings shared across the company.

The number of all worker recordable injuries and illnesses (employees and contractors) was 95 in 2004, fourteen less than for the 2003 year, and 64 less than for the 2000 year when our Challenge 2005 targets were established. Analysis of these cases for 2004 showed that manual handling activities and ergonomic issues were associated with 21% of cases, the proportion from trips and falls was 25%, while those from hand injuries was 29%. There was a significant and continuing decline in injuries and illnesses due to chemicals, with no such cases recorded during the year.

Hygiene (workplace exposure) monitoring programs during 2004 showed a compliance with exposure standards of 98%, the company's best performance over the last five years. The completion rate for annual hygiene sampling programs (3,367 tests) was 96.4% in 2004. The annual health assessment program (6,767 tests) achieved a compliance of 95.8% to plan.

During the year a number of specific safety and health activities were conducted focusing on key issues:

- A number of critical procedures were reviewed and updated, in order to capture learnings from incidents and maintain developments in best practice. Some of these procedures included Work at Heights/Work on Roofs; Clearance to Work; Isolation of Plant & Equipment from Hazardous Materials; Scaffolding & Ladders; Transport of Dangerous & Non-Dangerous Goods; and Travel Health, Safety & Security.
- Incitec Pivot launched the TAB (Think Safe, Act Safe, Be Safe) Program with comprehensive, tailored training for each site being progressively rolled out across all locations. There has been a 50% reduction in recordable injuries since the launch of the program.
- A training CD was developed within the company to assist in raising awareness and reducing injuries associated with Slips, Trips and Falls.
- Mining Services expanded their SH&E fitness training, which is an annual refresher training for supervisors in key SH&E systems and initiatives. This approach focused on implementing and embedding the Job Safety Risk Assessment (JSRA) and Job Cycle Check (JCC) process globally.

## Environment

### Challenge 2005 Targets:

- At least halve the number of accidental losses of containment of chemicals at our sites. The 2005 milestone is no more than 4.
- Improve the use of resources, increasing energy efficiency (reducing greenhouse gas emissions) and increasing water consumption efficiency.
  - The energy efficiency related to production will be increased by at least 10%.
  - The water consumption efficiency related to production will be increased by at least 10%.
- Continue the program of restoring land and groundwater affected by past activities.

### Site Losses of Containment

There were five serious site losses of containment recorded in 2004 (three in 2003). This number is higher than the 2005 target of 4 and has been reduced from 8 in 2000. There were no injuries associated with four of the five incidents in 2004, while one employee and a contractor driver received minor eye irritation during the fifth incident. Sites also record and investigate all minor leaks of product that are quickly brought under control.

### Resource Conservation

Company production volumes were 20% higher in 2004, primarily due to acquisitions, however the company continued to make good progress in reduction of energy use, greenhouse gas emissions, and water use. Challenge 2005 milestones for each area were exceeded.

### Energy & Greenhouse Gases

The company's operations consumed 23,449 TeraJoules of energy in 2003/04. Natural gas for ammonia production at the Gibson Island and Kooragang Island facilities accounted for 87%, with electricity accounting for 10%. The energy use per tonne of production was 18.2% lower than the 1999/00 baseline, exceeding the Challenge 2005 milestone. For the 41 sites with relevant historical data, fifteen achieved the milestone, and this includes two of the top ten energy consumers, with several just below.

Water usage decreased to 2.57 million litres per kilotonne of production, a 23.4% reduction compared to the 1999/00 baseline. The Challenge 2005 milestone (10% reduction) was exceeded.



This reduction was due to several manufacturing sites continuing to make good progress via energy management programs, the construction of new energy efficient plants (eg. chlorine), and the acquisition of low energy intensive Pivot sites.

Absolute emissions of carbon dioxide from energy use were 1,840 kilotonnes. Carbon dioxide emissions decreased to 0.42 tonnes per tonne of production, a 26.8% reduction compared to the 1999/00 baseline. The primary reason for the change was due to the energy savings achieved by a number of sites, as well as the acquisition of the relatively low energy intensive Pivot sites.

Emissions of nitrous oxide ( $N_2O$ ) from nitric acid manufacture are being established and will be included as carbon dioxide equivalent emissions from 2004/05 onwards.

#### Water

In 2003/04 the water used by Orica operations was 11,346 million litres. Water usage decreased to 2.57 million litres per kilotonne of production, a 23.4% reduction compared to the 1999/00 baseline. The Challenge 2005 milestone (10% reduction) was exceeded. For the 39 sites with relevant historical data, 23 achieved the company milestone, this includes seven of the top ten water consumers.

These results were influenced by water reduction activities at many sites and through acquisition of low water intensive operations.

#### Legacy Issues

As a chemical company that has been in operation for over 100 years, Orica has a number of sites that have been contaminated as a result of the legacy of operations over this long period and from a time when the standards of environmental management were less stringent than those applied today. Orica remains committed to resolving these issues and, over the last ten years has remediated a number of sites and made them available for other productive uses. The company has continued this program of managing site contamination issues throughout this period.

Key activities in 2004 were:

- Work continues on the clean-up of groundwater at Botany. Since the last report, a decision has been made to postpone the implementation of full-scale bio-remediation following inconclusive results from field trials, which commenced in early 2004. A program of hydraulic containment (pump and treat) has since been implemented which will see groundwater extracted from various parts of the Orica site as well as from off-site wells which have been installed along the median strip of Foreshore Road adjacent to Botany Bay. An interim treatment facility is to commence operation in late 2004, which will utilise a recommissioned steam-stripping unit. This interim facility will commence with the treatment of 300 kilolitres of groundwater per day and its capacity will be progressively increased to treat up to 2 megalitres per day by mid 2005. A full-scale treatment facility will be constructed during 2005, which will be able to treat up to 15 megalitres per day. It is anticipated that this plant will be commissioned in late 2005.
- An Independent Review Panel appointed by the NSW Minister for Infrastructure & Planning has endorsed the choice of AMEC GeoMelt technology to destroy the stored HCB waste that is currently located at Botany. The Panel has however recommended that the destruction be undertaken at a location in NSW that is both remote and of low environmental sensitivity rather than at Botany. The material continues to be safely and securely stored while the company works with the NSW Government on the identification of a suitable site.
- Agreement has now been reached with the NSW Department of Environment & Conservation with respect to the remediation of part of Homebush Bay adjacent to the former Rhodes site. It is expected that this work will be completed by the end of this year.
- Work has continued on the characterisation of the nature and extent of contamination on the former Villawood site. This work will continue to allow the formulation of remediation options for the site.

- Work has commenced on the demolition of redundant plant and buildings on the former chlorine plant at Yarraville, Victoria. Options for the remediation of mercury contaminated soil and building materials are being investigated.
- An independent auditor has been appointed to review all of the available data in relation to contamination of groundwater with chlorinated hydrocarbons at the former PMA manufacturing site in Laverton, Victoria, and to recommend any further action that may be necessary. The auditor is due to report to the Victorian EPA in early November 2004.
- Remediation of part of the Deer Park, Victoria, site was completed during the period and land sold.

### Challenge 2010

Given the progress the company has made towards the Challenge 2005 milestones, and in order to continue moving towards our goal of a sustainable future, Orica has developed Challenge 2010 milestones. These are in the process of being finalised in accordance with the elements of the company's proposed sustainability framework and will be released shortly.

The Challenge 2010 milestones are based on specific reduction measures for:

- All Worker Recordable Case Rate (injuries and illnesses)
- Health & Hygiene Assessment Performance
- Site Losses of Containment
- Distribution Incidents
- Resource Conservation
  - Energy Consumption
  - Greenhouse Gas Emissions
  - Water Consumption
  - Waste Generation

# Challenge 2005 Progress Report

## Product Stewardship

### Challenge 2005 Targets:

- At least halve the number of distribution incidents involving the company's products. The 2005 milestone is no more than 12.
- Life cycle risk assessments will be completed for all major product groups. These will review potential impacts of products from their origin to their disposal.

### Distribution Incidents

The number of serious distribution incidents involving the company's products was 24 in 2004, compared with 29 in 2002. The Challenge 2005 target is 12.

The result was disappointing given the efforts made over the year to reinforce compliance to procedures and the development and implementation of guidelines for heavy vehicle driver selection, training and management. To reduce the frequency of these incidents, the company is continuing to work with its own fleet and transport carriers to identify ways/programs to influence driver behaviour.

With the major changes to international transport of dangerous goods codes, focusing on security of high consequence products, much emphasis has been placed on ensuring Orica will conform to these changes. This will continue through 2005.

### Emergency Response

The safe use and distribution of the company's products remains an issue with customers and the general community. The company's Emergency Response Service responded to 316 incident calls relating to the company's products in the Australia/New Zealand region, a slight reduction on the previous year.

Of the 316 calls, 56% related to human exposures (mostly paint and DIY product exposures in the home), 12% to site leaks or spills and 11% to transport incidents.

Outside of Australia and New Zealand the company engages contract services to handle emergency response calls.

### Life Cycle Assessments

The Company product stewardship index determined from the various business self assessments was 84%, up from 81% in 2003 (2005 milestone >90%). Progress during 2004 included:

- SEMAPRO has been adopted as the standard Life Cycle Analysis (LCA) software program for completing modelling by the businesses.
- Incitec Pivot completed EcoEfficiency surveys on its operations and environmental performance for the last two calendar years (2002 and 2003). Industry results will be reported publicly.
- A global review of ammonium nitrate security was completed and a strong focus maintained on security and traceability of all Mining Services products. GPS systems are being installed on all vehicles carrying explosives.
- A major focus has been on achieving 100% compliance with the International Cyanide Management Code, with the business in a good position to achieve this target. A policy of not using tropical hardwoods and timbers is being implemented to reflect a sustainable approach for the packaging being used.
- Four Consumer Products divisions completed a series of sustainability workshops with The Natural Step organisation and identified a number of projects that will make operations and products more sustainable.

## Community

### Challenge 2005 Targets:

- All major sites will issue site safety, health and environment reports to their local communities.
- All employees will be encouraged to participate in customer and community safety outreach programs.

### Site Reports

During the year many sites prepared and/or updated reports for distribution to their local communities - these often take the form of pamphlets, calendars, or letters. As an example, Mining Services ammonium nitrate plants (Monclova, Mexico; Kooragang Island, NSW; Yarwun, Qld; Seneca, USA; Carseland, Canada) all prepared and distributed community consultation brochures to their neighbouring communities.

A number of major sites (eg. Deer Park, Vic; ChlorAlkali Laverton, Vic, and Botany, NSW) continue to operate Community Liaison Committees which involve members from the relevant site, together with representatives from their local council and local community discussing issues which may affect the neighbouring communities.

### Safety Outreach to the Community

Businesses continue to make available Material Safety Data Sheets and detailed safety notes on their web site's 'frequently asked questions' page. Individual sites continue to engage local communities and businesses in various ways where these opportunities exist. Some examples are:

- Selleys and Dulux employees on the Padstow site participated in the annual Clean Up Australia day by conducting their fifth consecutive 'Make Australia Shine' Business Clean-up day. Fifty volunteers collected over 80 bags of rubbish from the adjoining Salt Pan Creek reserve.
- Dulux conducted a second waste paint collection trial, via Bunnings warehouses, dubbed 'Paintback'. Over 42 tonnes of unwanted paint was collected in a one month period. In addition, some 10 tonnes of steel packaging was recycled and 6,300 litres of re-manufactured paint is now on sale back in Bunnings.
- Incitec Pivot focused on reaching families and friends via the Think Safe, Act Safe, Be Safe Program. The Be Safe component of the program focuses on 24 hour SH&E awareness for workers and their families.

## Prosecutions

In October 2003, Incitec (Orica IC Assets) received a fine of AUD 90,000 from the NSW Land Protection Court for breaches of the Kooragang Island site licence conditions. This related to an incident in July 2002 when a quantity of nitric acid was discharged from the site into the Hunter River.

In December 2003, Orica New Zealand was convicted on one count of discharging six tonnes of nitric acid into the environment of Timaru harbour during ship to shore transfer at the Chemnet site in February 2002. A fine of NZD 18,000 and costs of NZD 3,719 were awarded against the company.

## Awards

PT Orica Mining Services, Indonesia, received a Zero Accident Award (Ministry of Labour and Transmigration) from the President of Indonesia in January 2004 for reaching over 1 million hours without a lost workday case.

Consumer Products Shah Alam, Malaysia, scored 98% in an audit by the Department of Occupational Safety and Health, setting a local record. The auditors were so impressed that they asked the site to make a presentation to others in the manufacturing industry.

Orica was a runner-up for the annual Blake Dawson Waldron Safety Award with its entry of the manual handling training CD and risk wheel.

Mining Services Monclova, Mexico, was certified to ISO14001, the international environmental standard, in August 2004. This site is the second Mining Services plant in Latin America to gain this certification.

Consumer Products Dulux R&D Team, Clayton, Vic, were recognised for their work with paint recycling and were awarded the City of Monash Environment Day Award. The initiative to reduce the amount of waste paint in the community was conducted in partnership with Bunnings, Eco-Recycle Victoria and the APMF in March 2003.

# About Orica

Orica is one of Australia's top 50 companies. With headquarters in Melbourne, Australia, we operate in over 35 countries in Australasia, Europe, Asia, Africa, Latin America and North America.

From a modest start in 1874 as a supplier of explosives to the Victorian gold fields, Orica is now a publicly-listed company with annual revenues and market capitalisation each in excess of four billion Australian dollars – and growing!

Over 10,000 skilled and enthusiastic employees are responsible for making our four businesses – Orica Mining Services, Fertilisers, Orica Chemicals and Orica Consumer Products – leaders in their chosen markets, globally in mining services and locally in fertilisers, chemicals and polymers, and paints.

Orica's products and brands are well-known and trusted. You can rely on the services we provide. We seek to understand the needs of both our direct customers and the consumers of end-products to which we contribute, and we constantly strive to meet those needs.

## Learn more at [www.ora.com](http://www.ora.com)

Visit [www.ora.com](http://www.ora.com) for our latest Safety, Health and Environment reports and documents. We constantly update our website to provide you quick and easy access to all our information.

Follow the links under Safety, Health and Environment to see our complete Orica SH&E Policy, 19 SH&E Standards, Strategy & Management System and more. Below are documents available for you at our website.

We look forward to your feedback.

## Site Community SH&E Reports

AUSTRALIA  
Botany, NSW  
Cockle Creek\*, NSW  
Deer Park, Victoria  
Geelong\*, Victoria  
Gibson Island, Queensland  
Kooragang Island\*, NSW  
Laverton, Victoria  
Port Kembla, NSW  
Portland\*, Victoria  
Rocklea, Queensland  
Yarwun, Queensland

\*Incitec Pivot Limited sites

NEW ZEALAND  
Gracefield  
Hornby  
Mount Maunganui (Chemnet)  
Mount Maunganui (Resins)

ASIA  
Samarinda, Indonesia  
Weihai, China

AMERICAS  
Brownsburg, Quebec, Canada  
Carseland, Alberta, Canada  
Monclova, Mexico  
Lorena, Brazil  
Seneca, Illinois, USA

EUROPE  
Troisdorf, Germany  
Würgendorf, Germany

## Other Documents

SH&E Policy  
SH&E Standards  
SH&E Management  
– Vision  
– Strategy  
– Due Diligence  
Challenge 2005  
– Objective and Milestones  
Health and Hygiene  
Land and Groundwater Issues  
Summary of Chemical Releases  
Greenhouse Gas Reduction  
Product Stewardship  
Emergency Response Service  
Responsible Care  
Coatings Care  
Agsafe

## Feedback

Email us any comments via [corpshe@ora.com](mailto:corpshe@ora.com) or by contacting us directly.

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## Paper used for this report

The paper used for this Safety, Health & Environment Performance Report has a 50% recycled fibre content with wood sourced from sustainable plantation forests.

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