

# BOTANY INDUSTRIAL PARK PTY LTD

Welcome to the 2010 edition of the Botany Industrial Park Pty Ltd (BIP) community information brochure. This brochure, first produced in 1994, describes the businesses that make up the BIP, our continuing commitment to safety, our environmental performance, and our improved community outreach programs. More importantly, it highlights the emergency management procedures for BIP and how you can contact us for more information.

## Introduction

The BIP, previously owned in its entirety by Orica (the former ICI Australia), was subdivided in 1998.

The following three companies now share the majority of the site and make up the BIP, which occupies over 100 hectares and is the third largest complex of its type in Australia.

- *Orica Australia Pty Ltd now operates the ChlorAlkali Plant, Groundwater Treatment Plant and manages site legacy issues, including the HCB Waste Repackaging Plant.*
- *Huntsman Corporation Australia Pty Ltd operates the Surfactants Plant. Huntsman is entirely independent of Orica, and operates other facilities across Australia.*
- *Qenos Pty Ltd operates the Site Utilities, Olefines, Alkathene and Alkatuff Plants. Formerly operated as a joint venture plastics manufacturing company between Exxon-Mobil and Orica, Qenos is now a wholly-owned subsidiary of ChemChina. It operates another petrochemical complex in Altona, Victoria.*

More information on each company may be found on their web sites as listed on the back of this publication.

In addition to these three larger operating companies Qenos, Huntsman and Orica, the BIP also co-ordinates activities with other companies that lease land on site from Orica. These include Air Liquide and BOC Gases in Baker Street at the northern end of the site; KBR (engineering) which occupies offices on the corner of Denison Street and Beauchamp Road; and Transfield Services ("TSL") (maintenance, projects and turnarounds) which is located at the north end of the site, off Corish Circle.

The BIP was established in December 1998 as part of a requirement by the then NSW Department of Urban Affairs and Planning, in order to ensure that established safety, health and environmental standards were maintained.

## 1. Constituent companies

### Huntsman

Surfactants  
Coolant  
Brake fluid

### Qenos Plants

Alkathene  
Alkatuff  
Olefines  
Site Utilities

### Orica

Chemicals  
Botany Transformation Projects  
Legacy Sites & Property

## 2. Lessees

TSL  
Air Liquide (ALA)  
BOC  
KBR

Although the site has been subdivided, much infrastructure remains integrated, such as water, electricity supply, drainage, and roads. The provision of essential services, such as occupational health services and environment management, is still centralised through the BIP, which co-ordinates the common activities and provides a single point of contact for the regulatory authorities and the community.

## Commitment to Safety

All members of the BIP are strongly committed to the safety of their personnel, the community and the environment as reflected in their Safety, Health and Environment policies.

**Orica's** commitment to Safety, Health and the Environment (SH&E) is well recognised and is measured annually against challenging improvement milestones known as Challenge 2010. This vision is consistent with Orica's SH&E Policy: "We will manage all our activities with concern for people and the environment and will conduct our business for the benefit of society without compromising the quality of life of future generations." We have a vision 'that all work related injuries, illnesses and environmental incidents are preventable'. This is achieved by focussing on safety through Plant, People and Procedures. Our workforce is proud of our SH&E performance.

**Huntsman** is "committed to achieving excellence in Environment, Health and Safety (EHS) protection in all our activities. Our operations will be conducted safely, efficiently and in a socially responsible manner; we will protect the health of our associates, contractors, customers, and the local community; and we will comply with environmental standards."

At **Qenos**, "we believe that all injuries, occupational illnesses and environmental incidents are preventable. We are committed to, and everyone who works at Qenos must show responsibility for, operations, products and practices that protect the safety and health of our employees, contractors, customers and the community, as well as protecting the environment. "

## Responsible Care®

Each of the member companies on the site is a signatory to the Plastics and Chemicals Industry Association's (PACIA) Responsible Care® guiding principles. These principles ensure that the chemical industry meets community expectations for protection of people and the environment, the manufacture of safe products and the operation of a sustainable industry.



## Botany Industrial Park (BIP)

The BIP team offers a single point of contact with external authorities and the community through the BIP Operations Manager, who oversees the management of the site's interaction with the regulatory authorities, such as the Department of Environment, Climate Change and Water (DECCW), the Department of Planning, Sydney Water, WorkCover, local government, police and the NSW Fire Brigade. The BIP Operations Manager also ensures consistently high standards of SH&E management from all businesses on the site. The team provides BIP plants with specialist advice on occupational health and environmental management. The systematic and proactive approaches in these areas formerly used by ICI, and then Orica, are also employed by all operating companies. In addition, the BIP Operations Manager has the responsibility of co-ordinating the use of common resources such as the roadways and security.

Over the last year, the BIP team has:

- *successfully managed Dangerous Goods Storage notifications to WorkCover and trade waste agreements with Sydney Water. (These are living documents. The companies are updating their depots in accordance with the parts of the documents that are relevant to them.);*
- *conducted extensive workplace health assessments;*
- *provided ongoing support to each BIP plant;*
- *continued to represent all companies in professional and industry associations;*

- *played an active part in the DECCW-industry consultation process through membership of the Australian Industry Group, Australian Environment Business Network, Industrial Ecology Network and PACIA;*
- *joined DECCW's Sustainability Advantage Program as a participant;*
- *participated in a WorkCover Chemical Stakeholders Group;*
- *participated in Sydney Water's Customer Forum;*
- *interacted with the DECCW on revisions to licences; and*
- *conducted numerous tours of the BIP for educational and community groups*

The BIP formed the Community Consultative Committee in June 1999, comprised of local residents, representatives from local businesses, DECCW, WorkCover and Sydney Water, officers from the City of Botany Bay Council, local school principals and representatives from each of Qenos, Huntsman and Orica. The BIP Operations Manager chairs the meetings which are held on a regular basis to allow dialogue between industry, council and residents. Any concerns in relation to safety, health and environment are able to be raised by the local community and responded to at the meetings. If you would like to know more about these meetings, please contact the community hotline number printed on the back of this publication.

## Major Hazard Facilities

"Major Hazard Facilities" (MHF) may be regarded as large chemical manufacturing and/or storage facilities. Orica, Huntsman and Qenos have all completed Notification as MHFs. In line with NSW WorkCover requirements the BIP MHFs will prepare and submit their Safety Reports. A Safety Report is a written presentation of the technical, management and operational information covering the hazards and risks that may lead to a major accident at a major hazard facility and their control, and which provides justification for the measures taken to ensure the safe operation of the facility.

## Other Companies Located within BIP

Transfield Services ("TSL") has a significant presence on the BIP site, as it is the principal alliance contractor to provide logistical support to maintenance and repair activities for all plants.

KBR provides specialist engineering support and a central drawing office to all BIP plants.

BOC and Air Liquide provide some gases to the BIP plants, but operate independently.

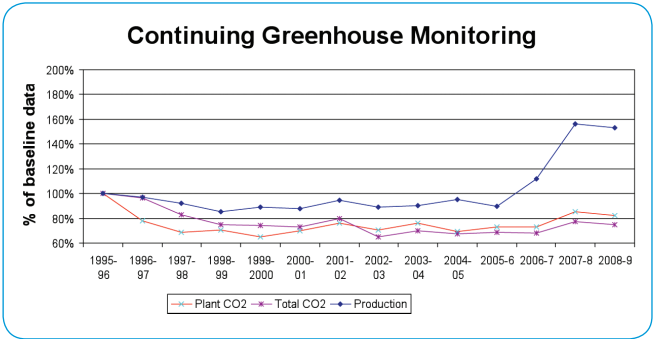
## BIP Environmental Data 2008-9

For many years, Orica published its emissions as part of its waste minimisation strategy. Materials subject to reporting under the National Pollutant Inventory (NPI) have always been a part of this reporting program. The following table is a summary of the data supplied to Environment Australia for the combined BIP companies for the years ending June 2009 (Orica and Huntsman) and September 2009 (Qenos), detailing emissions to atmosphere, as well as transfers to effluent and waste treatment/disposal. This table includes only those materials for which emissions/transfers were over 1 kg per annum and are expressed here in tonnes per annum. There were no emissions to waters exceeding 1kg.

<b>NPI Compounds Released to Atmosphere (tonnes per annum)</b>	
Acetic Acid	0.002
Acetone	0.558
Ammonia (total)	0.100
Arsenic and Compounds	0.019
Benzene	6.378
Beryllium and Compounds	0.005
2-Butanone ("MEK")	0.024
Cadmium and compounds	0.004
Carbon monoxide	64.978
Chlorine	0.455
Chloroform	0.002
Chromium (III) Compounds	0.017
Chromium (VI) Compounds	0.003
Cobalt and Compounds	0.009
Dichloromethane	0.027
Ethanol	0.771
Ethylbenzene	0.011
Ethylene oxide	0.600
Fluoride compounds	4.463
Formaldehyde	0.126
n-Hexane	0.003
Hydrogen sulphide	0.054
Hydrochloric acid	3.832
Lead and Compounds	0.021
Magnesium oxide fume	0.441
Manganese and compounds	0.062
Mercury and Compounds	0.028
Methanol	2.867
Nickel and compounds	0.013
Oxides of Nitrogen	828.176
Particulate Matter 10.0 um (flyash/soot)	14.719
Particulate Matter 2.5 um (flyash/soot)	3.969
Polycyclic aromatic hydrocarbons	0.001
Selenium and compounds	0.057
Sulphur dioxide	173.549
Sulphuric acid	7.735
Tetrachloroethylene	0.002
Toluene	0.776
Total VOC (from combustion)	3.978
Total non-combustion NPI VOC (not otherwise listed)	569.716
Xylenes	0.018
Zinc	0.004
<b>NPI Transfers in Wastes</b>	
Arsenic	0.002
Chlorophenols	0.002
Chromium	4.239
Copper	0.007
Lead	0.012
Mercury	0.004
Nickel	0.002
Sulphuric acid	600.000
<b>NPI Transfers in Effluent</b>	
Ammonia (total)	9.139
Chloroform	0.530
Cobalt and Compounds	0.006
1,2-dichloroethane ("EDC")	0.497
Ethylene oxide	4.167
Petroleum HC (flammable)	0.211
Phenol	0.016
Zinc and compounds	1.296

# Greenhouse Gas Emissions

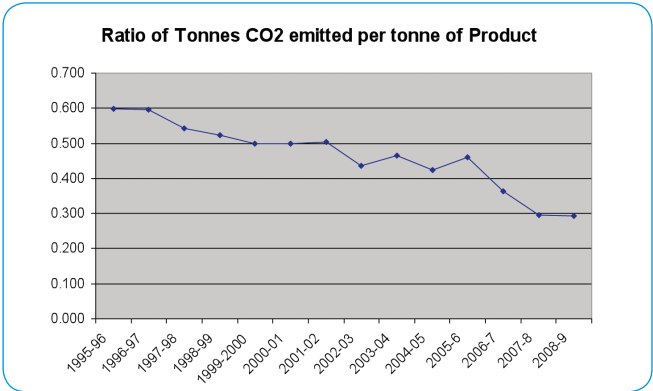
BIP plants continued to monitor greenhouse emissions throughout the past year.



**Plant emissions** are greenhouse emissions directly from plant.

**Total emissions** are total greenhouse emissions; that is, plant emissions plus remote power generation.

Even though the absolute tonnage of CO2 has increased over the last few years (with a slight decrease last year), the following graph shows that the ratio of emissions to production has, overall, gradually reduced. This reflects the efficiencies achieved by the various operations on site throughout 2008-9. It also illustrates the continuous attention paid to achieving energy efficient operations across the BIP.



# Health and Safety Initiatives 2010

The BIP Occupational Health Service provided ongoing health surveillance programs, providing the employee with information and advice on risk factors such as hypertension, obesity and smoking.

The Occupational Health Service also provided effective injury and illness management to injured employees resulting in a safe and timely return to work (RTW). The success of this injury management system relies on the cooperative efforts of management, the injured employee and the RTW coordinator.

The Site Safety Unit has many wide-ranging roles, which include providing a round-the-clock emergency response service within the BIP. It has a dedicated fire truck manned 24 hours per day and a volunteer group comprising shift technicians, known as the Botany Emergency Response Team (BERT), who assist the fire crew with the control of any incidents.



*BIP Emergency Response Team Leader with Matraville Fire Crew*



Qenos is the largest manufacturer of plastic in Australia and employs some 1000 people on two sites in Botany, NSW and Altona, Vic.

At Botany, Qenos operates the following plants:

- *Olefines – which manufactures ethylene from ethane (a component of natural gas) piped to Botany from South Australia. Ethylene is the building block for many products made on the site, such as polythene and detergents;*
- *Alkathene – which uses ethylene to make low density polythene, which is found in drink cartons, bin liners, garbage bags, toys and garden equipment;*
- *Alkatuff - which uses ethylene to make linear low density and high density polythenes, which are found in frozen food packaging, shrink wrap, heavy duty piping and rainwater tanks; and*
- *Site Utilities – which operates three boilers and supplies steam, cooling water, townswater, firewater, compressed air, electricity and drainage services to all BIP plants.*

Qenos has an excellent record in safety, health and environmental management, with no serious incidents being recorded for several years. Nonetheless, Qenos continues to take the protection of the workforce, the community and the environment very seriously and is committed to the maintenance of its world-class safety, health and environment operating system. At the heart of this commitment is a team of experts to support Qenos' manufacturing facilities in Botany and Altona in Victoria. This team works with the operations teams to help them manage all aspects of process and personnel safety, occupational hygiene and environment protection.

### **People count**

Qenos recognises that maintaining its excellent performance in health, safety and the environment lies with those men and women running the plants day-to-day. Qenos not only ensures that these employees are well trained and understand their responsibilities, but also that they have the ability to make decisions and positively influence Company direction. Qenos' employees share its vision and are totally committed to protecting their colleagues, the community and the environment.

### **Safety, where to from here**

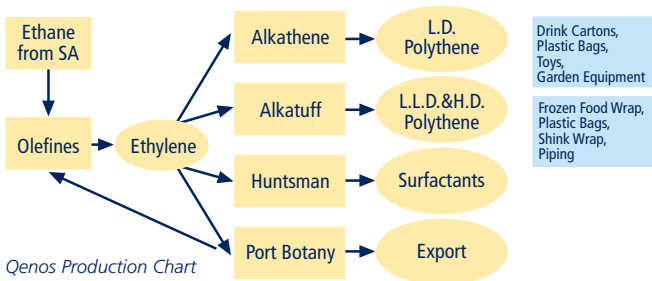
The NSW Government introduced legislation governing major hazard facilities (MHFs) that require companies to prepare a Safety Report. Qenos is already well prepared for this, with detailed information gathered from a series of systematic safety reviews of plant design and operation. These reviews have been running

over several years and together with our understanding of MHF legislation in Victoria, will help us produce a comprehensive Safety Report for Qenos' Botany Operations

### **Safety & Environment, spreading the word**

Qenos continues to support the development of a new health, safety and environment culture in ChemChina's Bluestar Group, with on-going cooperation between Bluestar Plants in China and Qenos' facilities in NSW and Victoria.

Locally, Qenos continues to work with Orica to reduce townswater usage on the BIP. By the end of 2010, Qenos will be using recycled water from the Orica GTP to replace cooling water in three out of four of its cooling water systems and in the feed water to the steam boilers. The goal of achieving an 80% reduction in townswater usage is still very realistic.



## **Flare Systems**

Two of the Qenos factories which use large amounts of flammable gases are equipped with flare systems to manage the safe disposal of excess gases. These flare systems are located at the northern end of the BIP, near Baker Street, just across the railway line from Swinbourne Street. When the plants are operating normally, small amounts of off-gases are destroyed under control in ground furnaces, which have no externally visible flames and which do not emit externally noticeable noise.

However, when the demand is higher, such as during the operations to shut down the plants, the ground furnaces are supplemented by high capacity elevated flares. The Olefines Plant flare is a tubular structure over 70 metres tall. On the infrequent occasions when we use this elevated flare, there is a large, visible flame and accompanying noise. When a planned shutdown occurs, this flare is operated at the lowest rate we can manage, for as short a time as possible, in daylight, to minimise any concern in the community. However, should the plant experience a malfunction which will automatically shut it down for safety reasons, we cannot select the time, duration or intensity of its operation. At such times, it may be very noticeable.

The smaller Alkatuff flare looks like a vertical grey cylinder with burners surrounding the top edge. When it activates, all the burners light up. Again, there is a visible flame and accompanying noise. Just like the Olefines flare, operations due to an automated safety shutdown of the plant are not planned and may therefore occur at any time.

Most of our flare systems rely upon the injection of steam to the flames to obtain complete combustion and ensure a clean flame

It should be remembered that these flares are safety devices, installed for the protection of the community and the plants.

Should you witness their operation, be confident that they represent an assurance of your safety, not a risk to you or your assets. However, if you still have any questions, please call the community hotline provided on the back page.







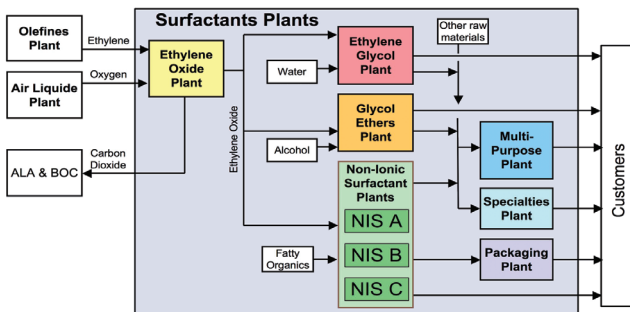
## Huntsman Surfactants

Huntsman is a global manufacturer and marketer of differentiated chemicals. Its operating companies manufacture products for a variety of global industries, including chemicals, plastics, automotive, aviation, textiles, footwear, paints and coatings, construction, technology, agriculture, health care, detergent, personal care, furniture, appliances and packaging.

Originally known for pioneering innovations in packaging and, later, for rapid and integrated growth in petrochemicals, Huntsman today has more than 11,000 employees and operates from multiple locations worldwide.

At Botany, its Surfactants Plant manufactures a range of over 300 products for many essential industries including detergents, personal care, agriculture, automotive, mining, textiles and chemicals. Some common product groups include cleaning products, brake fluids and radiator coolants.

### Surfactants Block diagram



Safety highlights in 2009 were:

- The total injuries rate for 2009 was the 2nd lowest in the last 10 years
- 1 workgroup achieved 4000 days and 2 workgroups achieved 3000 days without a Recordable or Lost Time Injury
- Only 3 minor injuries during the August 2009 major maintenance activity in approximately 60,000 workhours
- Safety improvements projects during 2009 included the replacement of pipework, upgrading of our packaging facility to improve ergonomics and purchase of additional fire fighting equipment

Huntsman is certified to a number of international standards - ISO 9001 (International Standard for Quality Systems), ISO/TS 16949 (International Standard for Quality Systems - Automotive Products) and ISO14001 (International Standard for Environment Management Systems)

Orica is one of Australia's leading publicly-owned companies and has operations in around 50 countries and customers in twice that many. Orica has evolved from a supplier of explosives to the Victorian goldfields in 19th Century Australia into a multi-billion dollar company.

Orica's traditions of leadership, innovation, quality and safety are shared by its 15,000 people located in around 50 countries across six continents,

Orica turns science into solutions that satisfy basic human needs. Each of its businesses - Orica Mining Services, Minova, Orica Chemicals and DuluxGroup - is a leader in its chosen market and enjoys a world class reputation.

Orica continues to have a presence on the BIP through its manufacture of ChlorAlkali products, operation of the Groundwater Treatment Plant and management of environmental legacy programs.

## ChlorAlkali Manufacturing

Orica has been producing chlorine for over 60 years at the Botany Industrial Park. Since 2002 Orica has been successfully operating its new 'gas-only' chlorine plant based on modern membrane technology. The new plant has resulted in significant improvements in safety, environmental performance and energy efficiency through the implementation of best practice design and technology.

The site operates continuously, 24 hours a day and employs approximately 40 people. Salt (from Queensland and South Australia), electricity and water are used in the plant. Chlorine, caustic soda, hydrochloric acid, sodium hypochlorite (liquid pool chlorine) and ferric chloride are produced. These products are sold to a range of industries such as:

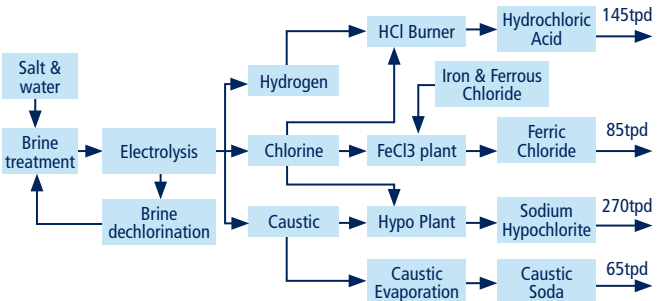


- *water treatment and swimming pools*
- *pulp and paper*
- *mining*
- *soap and detergent*
- *steel*
- *food, beverage and dairy*

Some significant achievements for the plant in 2008-9 included:

- *an injury free year*
- *record production*
- *expansion of markets which will lead to further investment in the Plant*

### Orica ChlorAlkali Production Chart



## Environmental Legacy Issues

During former operations at the Botany site, contamination of soil and groundwater occurred as a result of manufacturing activities, when environmental considerations, regulations, and understanding were not of today's standards. Orica acknowledges that it contributed to this contamination and is committed to implementing a range of remediation projects that address land and groundwater contamination, and to destroying waste stored at its Botany site.

Throughout 2009, Orica continued its activities of transforming the site, whilst safely managing legacy matters in close consultation with the local community, agencies, government and other stakeholders.

Orica continues to operate the Groundwater Treatment Plant (GTP) as well as conducting extensive monitoring to ensure risks to human health and the environment are managed at acceptable levels.

Treated water from the GTP continues to be provided to several factories at or near the BIP.

Orica has applied to destroy its hexachlorobenzene (HCB) waste at one of the world's best and most environmentally sound destruction facilities in Europe, and remains hopeful that its applications will be approved. Orica's HCB Repackaging Plant, which is repackaging stored HCB waste so that it is suitable for overseas shipment, continues to operate well.

In 2010 Orica will commence remediation of contaminated soil that is encapsulated in a synthetic liner under a car park (also known as the Car Park Waste Encapsulation - CPWE) near Corish Circle.

Orica is planning to remove mercury from soil located at the former Chlor-Alkali Plant site at BIP by excavating and treating the soil using a soil washing technology. A Remediation Action Plan is being prepared.



*Car Park Waste Encapsulation site to be remediated*

## Community Consultation and Outreach

There are two community groups: the Botany Groundwater Community Liaison Committee (CLC); and, the HCB Community Participation and Review Committee (CPRC) that meet regularly to discuss Orica's remediation projects at Botany.

Each community group has access to independent technical advice from experts in fields relevant to the various remediation projects.

Orica greatly values the commitment and contribution that local residents, environment groups, businesses and the three levels of government have made to these committees. Orica encourages feedback on the various projects at Botany, and seeks to meet the needs of stakeholders as it works to address legacies of the past. Everyone is welcome to attend the CLC and CPRC meetings, as well as the BIP CCC meetings.

Orica is committed to the following community outreach programs:

- *Residential bore monitoring program: this aims to provide eligible local residents with information about the quality of their bore water, with respect to Orica related contaminants.*
- *Ronnie Harding Award: an annual award provided to environmental studies students at the University of NSW.*
- *Guided bus tours of the BIP: these allow members of the public to see the BIP, and to learn more about the Botany Transformation Projects.*
- *Botany Bay National Park: Orica has pledged \$140,000 to fund flora surveys and construct a coastal walking track in Botany Bay National Park.*



*Bus tour of Orica remediation projects at BIP*

Orica provides monthly updates in the Southern Courier and quarterly updates in the St George and Sutherland Shire Leader newspapers. It distributes regular publications of CLC and CPRC newsletters in the local area and holds workshops to share information and seek community input on the various cleanup projects at Botany.

Details of the Orica community consultation programs and further information about the Botany cleanup projects are available on [www.oricabotanytransformation.com](http://www.oricabotanytransformation.com) or via the BIP community feedback line **1800 025 138**.