

ENVIRONMENT

IMPROVEMENT PLAN
2003-2004



PORTLAND
ALUMINIUM



australia's aluminium
since 1963

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Aluminium...
part of our
everyday lives.

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an introduction to the environment improvement plan

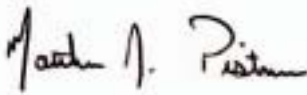
An Environmental Improvement Plan (EIP) is a company's public commitment to environmental improvement. Improved environmental performance, reduced environmental impacts and liabilities, and development of more sustainable practices are key components of Portland Aluminium's overall business plan.

The Environment Improvement Plan you are reading was prepared on behalf of Portland Aluminium and the Portland community to give an overview of smelter operations, improvements accomplished in the past, and the current initiatives program. Portland Aluminium's EIP is an essential part of the overall environmental management system for the smelter and the community consultative process is an integral part of our EIP.

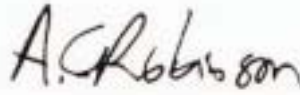
Portland Aluminium will report regularly to the community on the progress of agreed Environment Improvement Plan actions.

The EIP will be reviewed annually by the community to assess progress and provide input to future goals and actions.

03



Matt Pistner
Operations Manager
Portland Aluminium



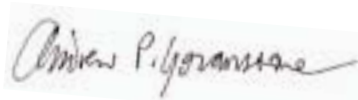
Tony Robinson (EPA)
Manager, Southwest Region
EPA



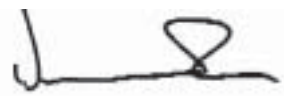
Cr. Tom Munro
Mayor of Glenelg Shire Council



Amanda Merryful
Community Consultative Partner



Andy Govanstone
Community Consultative Partner



Warren Finck
Community Consultative Partner



LEFT:
Portland Aluminium has been successful in partnering an award winning project to study the interaction between humans and Australia's only mainland breeding colony of Australasian Gannets.

portland aluminium

Portland Aluminium is a modern aluminium smelter, located 5kms south of the town of Portland in south-western Victoria.

Portland Aluminium produces approximately 345,000 tonnes of aluminium ingot each year, most of which is exported through the Port of Portland to customers in South East Asia. Aluminium produced at the plant generates a net export income for Australia in excess of \$800 million a year.

In August 2003, Portland Aluminium reached a milestone in production by producing our 5 millionth tonne of aluminium since smelting began in 1986.

Construction of the Portland Aluminium smelter commenced in 1981, with the first stage coming on line in 1986. The second potline was started in 1988.

Portland Aluminium is an unincorporated joint venture between Alcoa of Australia Ltd (45 per cent), Eastern Aluminium (Portland) Pty Ltd as trustee of the First National Resource Trust (10%), CITIC Nominees Pty Ltd (22.5 per cent), and Marubeni Aluminium Australia Pty Ltd (22.5 per cent). Portland Aluminium is managed by Alcoa Portland Aluminium Pty Ltd, a wholly owned subsidiary of Alcoa of Australia Limited.



Portland Aluminium sits on just over 600 hectares of land. Smelting operations, ancillary buildings and roads occupy around 100 hectares. The remaining land has been turned into a "Smelter in the Park" with the creation of parklands around the plant for local community relaxation, areas of research and learning, and habitats for wildlife.

Portland Aluminium's Smelter in the Park is recognised worldwide as a benchmark in industrial and environmental harmony.

Portland Aluminium values your input on the format and content of this report. A feedback form can be found at the end of the document, and we would appreciate any comments you may have. Alternatively you can contact Gillian Macmillan, Community Relations Manager on 03 5521 5463.



portland aluminium environmental initiatives for 2003-2004

land management initiatives:

PORTLAND ALUMINIUM WILL:

- continue to work with local primary schools, various tertiary institutions and landcare groups to provide both a place of study and to share knowledge about local flora and fauna.
- continue to facilitate the sharing of knowledge in the community and to expand programs to involve the broader community groups.
- work closely with all interested stakeholders in developing plans for the reintroduction of the Growling Grass Frog back into the Portland district by the end of 2004.
- continue to support environmental efforts and initiatives, and work with local landcare groups on projects i.e. National Tree Day, World Environment Day.
- continue to support the Point Danger Management Committee in the development of a Strategic Business Plan.
- continue on an ongoing basis the vermin and weed control programs in the surrounding parklands and smelter property.

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water management initiatives:

Portland Aluminium will continue to reduce total water usage and recycle where possible. The target is at least 60% reduction in process water discharge by 2008, with the possibility of reducing this to zero.

Reducing water usage

- by end 2006, complete the transition of moving to dry landscaping that began in 2001 to avoid artificial irrigation (saving 100 kilolitres per day).

Recycling water

- continue to work closely with Portland Coast Water for improved water quality and reuse options (to increase recycling and lower consumption).
- by end 2003 complete an investigation of the harvesting of rainwater onsite and treatment (reverse osmosis) for reuse in the smelter process (to increase recycling).

Reducing discharge water

- by end 2004, complete investigation by Deakin University for recycling of remaining process discharge water through the smelter wetlands and eliminate discharge into Grants Bay.
- by end 2004, complete trials of Portland Coast Water treatment plant water for irrigation of tree plots, offsetting water usage.

SPL initiatives

PORTLAND ALUMINIUM WILL:

- continue to improve the reliability of the SPL plant to increase processing rates and enable the stockpile of stored SPL to be processed.
- continue to look for lower cost alternatives with the same or improved SPL processing methods environmental impact.

solid waste initiatives

PORTLAND ALUMINIUM WILL:

- establish a 'cleaner production' lead team by end 2003 to identify further improvements around recycling and reuse.
- complete environmental awareness education packages for employees by June 2004.
- continue to ensure that all material handling programs are fully compliant and aligned with the EPA industrial waste strategy.
- support the implementation of improvements to equipment and services provided through the Material Handling Contract for process by-product management. Target date June 2004.

fluoride initiatives

PORTLAND ALUMINIUM WILL:

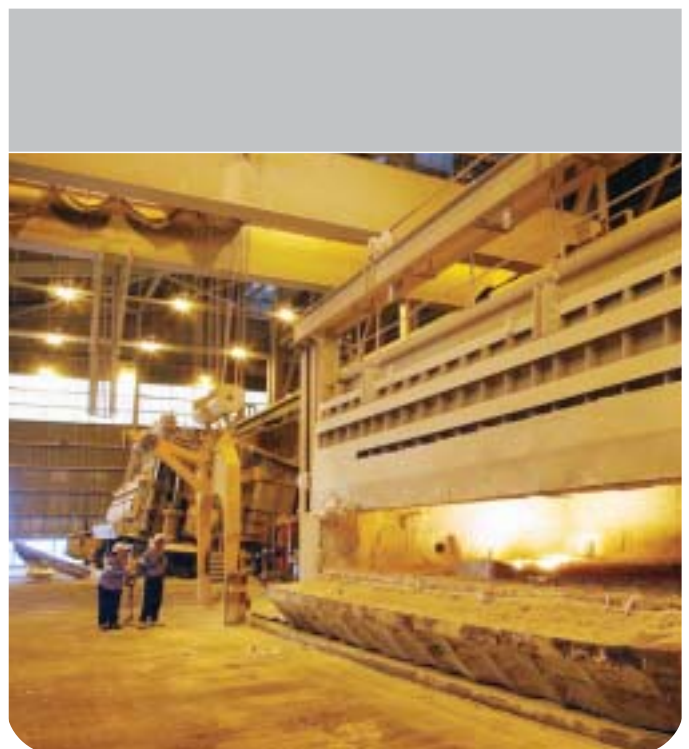
- aim to achieve 10% reduction in fluoride emissions (kgf/t Al) by end 2004, compared to historic (1999) performance. This is expected to be achieved by acting on information from continuous fluoride monitors recently installed in Potrooms.

sulphur dioxide initiatives

PORTLAND ALUMINIUM WILL:

- continue to monitor sulphur dioxide levels to ensure compliance with ambient air quality objectives.

As a responsible employer we ensure worker health and safety on the job and help educate and promote healthier lifestyles off the job.



greenhouse gas initiatives

PORTLAND ALUMINIUM WILL:

- target a 10% reduction in anode effects (measured as time on anode effect per pot per day) by end of 2004 based on 2002 base figure.
- by end 2004, set targets on compressed air usage across site and monitor against them.

carbon bake scrubber initiatives

PORTLAND ALUMINIUM WILL:

- achieve 10% reduction in voltage of bolted 'strap' high voltage pot connections by end 2004, based on 2002 performance.
- continue further testing by end March 2004 to establish that there is a link between VOC's emitted from the bakes scrubber and opacity in the bakes gases.
- continue focus on reducing opacity in the gases entering the bakes scrubber. This is expected to reduce Volatile Organic Compounds being emitted from the scrubber stacks.
- install opacity meters on each individual fire group in the bakes. Target completion by end 2004, subject to capital availability.

We will aim to decrease greenhouse gas emissions within our control.

07

anode Greenmill initiatives

PORTLAND ALUMINIUM WILL:

- by end 2003, measure Greenmill emissions under different operating conditions to ensure we have an accurate understanding of the total Greenmill emissions.
- by March 2004, sampling will be completed and discussions commenced with the EPA to include Greenmill emissions in our EPA accredited licence.
- implement educational programmes by end 2003 to increase the awareness of energy wastage from unnecessary lighting for all personnel on site and to the broader community.



plant lighting initiatives

PORTLAND ALUMINIUM WILL:

- carry out a detailed engineering study on an area-by-area basis so that recommendations can be made about potential lighting improvements. Target date 2004.
- where an opportunity exists; modify lighting installations to incorporate the required technologies to minimise energy waste.
- continue to use energy efficient globes on site.
- continue to look at turning lights off that are not needed (ship unloader lights are now switched off when not in use), and consider the use of solar powered lighting in specific areas, drawn from survey results.

NB: More information of the specific areas outlined in the initiatives can be found in pages 8-17 of this document.

land management

Portland Aluminium sits on just over 600 hectares of land, with smelting operations, ancillary buildings and roads occupying around 100 hectares.

Traditionally the remaining land would have been used as a buffer zone around the operations, to keep the public at arm's length. Instead, extensive effort has been applied to developing this land into a 'Smelter in the Park' which demonstrates the company's commitment to protecting the environment.

To turn the Smelter in the Park vision into reality, Portland Aluminium worked with the University of South Australia to create a master plan for the area. The plan included an area for visitors, areas for relaxation for the community, areas for learning and research, habitats for wildlife, and landscaping for operating areas within the smelter.

Instead of keeping the public out, the land surrounding the smelter is open to all for recreation and learning.

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EXTENSIVE EFFORT HAS BEEN APPLIED
TO DEVELOPING THIS LAND INTO A
'SMELTER IN THE PARK',

study reports

Under Portland Aluminium's environmental monitoring program a range of routine and non-routine studies and research projects have been conducted since the initial Environmental Effects Statement work began in 1979. Over this time such reports have been shared with a range of interested groups and individuals as requested. Other in-house studies conducted by Universities that were initiated either by the Portland Aluminium or the University can be made available upon request.

Queensland University's Dr David Doley (at right) visited Portland in January 2003. Here are excerpts from his report conclusion:

"The effects of gaseous emissions from the smelter on current season foliage were slight, but on one-year-old foliage the effects were more evident than in 2002. For Eucalyptus species in situations protected from storm winds, the limits of injury were contained within the buffer zone. On the northern side of the smelter, some injury could be detected at a distance of about 600 m from the smelter perimeter, on the eastern side at about 250 m, and on the southern side at 100 m. Injury to vegetation on the western side of the smelter was dominated by wind effects, and was generally restricted to the eastern side of Quarry Road."

While Dr Doley highlights the impact of fluoride to blue gums (*Eucalyptus globulus*) in a plantation in the smelter's parklands he goes on to say in his conclusion that "As in previous years, smelter emissions are considered to have a minimal effect on the condition of the heath at Point Danger, but the management of the area to retain heath species continues to become more urgent."

A copy of the full report can be viewed by contacting Portland Aluminium.



LEFT: Nurturing the future well-being of the environment remains our high priority and we maintain our commitment in many ways, including our partnership with Alcoa Frog Watch.

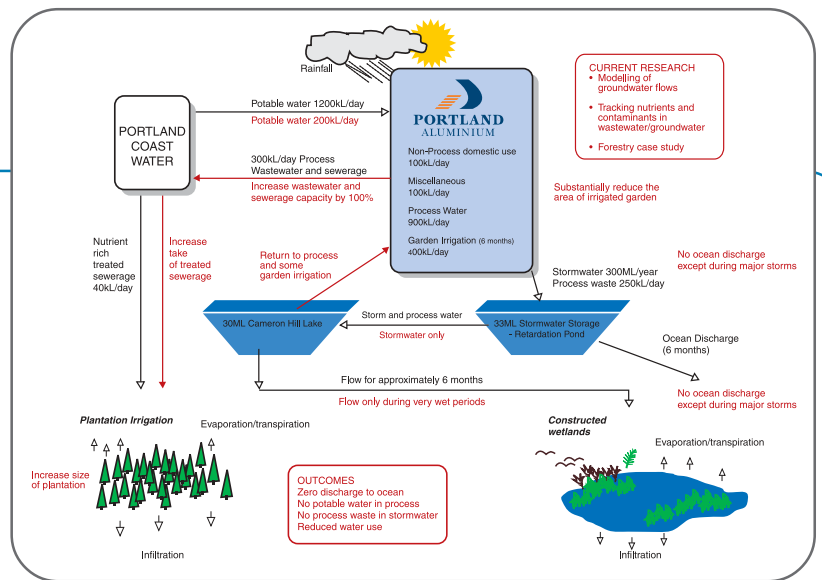
growling grass frog reintroduction

It is understood that prior to the smelter development, the Growling Grass Frog was lost within the Portland region due to the effects of a severe drought. During 2001 - 2003 a Melbourne University Masters student conducted a study to determine the environmental parameters in water bodies where the Growling Grass Frog currently lives and the parameters present in water bodies in Portland Aluminium's parklands.

The research found that a number of suitable sites existed and further investigation towards the reintroduction of the frog would be worthwhile.

More recently it was decided that Portland Aluminium, with the guidance of the Amphibian Research Centre are taking the first steps into reintroducing the Growling Grass Frog into the Smelter parklands. With the increased number of wetlands to Portland Aluminium's existing wetlands and their ongoing management, the impact of drought on the Growling Grass Frog can be greatly minimised.

water management



WATER USE

Purchased potable water is used in the smelter for cooling, garden irrigation and domestic purposes. The major process water use is to cool ingots in the casting area. Other uses include cooling the compressed air system, switchyard rectifiers and the Spent Potlining (SPL) treatment facility.

Portland Aluminium consumes 1.5 megalitres of water per day. This is equivalent to one Olympic size swimming pool.

Portland Aluminium recognise that water is one of the key inputs for sustainable operation of the smelter and has several programs in place to reduce water usage and eliminate process discharge from the smelter site.

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PROCESS WATER AND STORMWATER DISCHARGES

Cooling water is treated with chemicals (rust inhibitors and biocides) and cycled approximately three times in cooling towers. Waste process water is discharged from these systems to avoid the build up of naturally occurring salts through evaporation.

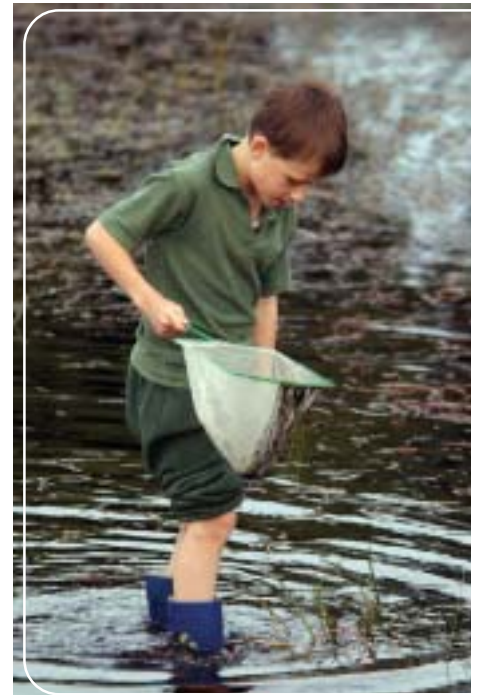
Process wastewater and stormwater from the site are discharged through a retention pond on the southwest side of the plant prior to entering Grants Creek and finally Grants Bay. The retention pond allows for the separation and retainment of sediment before the water enters the natural systems via an EPA-licensed outlet.

Around 15 Megalitres per year of treated sewage effluent is returned to the smelter from the treatment plant for use in irrigating trees in the parklands.

MONITORING WATER DISCHARGE AND USAGE

Discharge from the site is monitored in a variety of ways, from daily inspections to monthly and quarterly sampling for water quality compliance.

Installation of flow meters has been completed to monitor major usage areas and optimise internal processes.



RESEARCH IN WATER USE AND WASTEWATER GENERATION

A PhD study was completed in 1998. This characterised water use in all smelter process and non-process areas and investigated potential improvements or alternatives.

Several honours projects have been completed on water quality and consumption in constructed wetlands under the typical atmospheric conditions of the Portland site. The possibility of reducing solute build-up using algae and other wetland plants, and by periodic flushing with wastewater, was also investigated.

A forestry project was completed in 1999 on the use of sewage effluent for tree irrigation. It investigated suitability of selected species, water use and tree growth.

hazardous wastes - spent potlining (SPL)

Spent Potlining (SPL) is generated when the carbon and refractory lining of aluminium smelting furnaces, or pots, reach the end of their serviceable life. All smelters generate SPL. Spent Potlining is considered to be a hazardous waste because it contains significant quantities of absorbed fluoride along with traces of cyanide, sodium and other contaminants.

EFFECTS OF SPL

SPL contains a number of compounds but the two of most concern are fluoride, which is absorbed from the molten cryolite material in the pot, and a very low level of cyanide, which forms as a by-product over many years of pot operation.

Unlike many smelters throughout the world, Portland Aluminium has never landfilled any SPL since operations at Portland began in 1986.

Correct management of SPL storage is necessary to prevent contamination of the environment. At Portland, SPL is stored under cover in well-ventilated buildings, and will continue to be stored until it can be processed.

THE ALCOA PORTLAND SPL PROCESS

In 1989 Portland Aluminium decided to investigate possible process alternatives to treat SPL. In 1995 the partners of Portland Aluminium approved the expenditure of A\$26 million for development of the 'Alcoa Portland SPL process'. The SPL team at Portland Aluminium has utilised the expertise of Alcoa, CSIRO, Ausmelt and others to develop a process that successfully treats SPL and converts it into useful products.

The process produces aluminium fluoride and a granulated vitreous material referred to as 'synthetic sand'. The aluminium fluoride produced from the process decreases the amount of expensive aluminium fluoride required to be purchased for use in the aluminium smelting process. In 2001 the Environment Protection Authority of Victoria (EPAV) approved the synthetic sand for unrestricted use. The EPAV criteria required for synthetic sand to achieve this classification, was for it to have fluoride leachability qualities being less than 15 parts per million. The EPAV's approval opens up opportunities for the end product, synthetic sand, to be used in commercial applications such as road making and concrete. Both products derived from the treatment of SPL will result in the conservation of natural resources, namely natural sand.

The Alcoa Portland Spent Potlining Process is attracting attention from smelters around the world. A proposal for a feasibility study for the installation of a similar facility in a large Middle East smelter is being progressed. Ausmelt is performing marketing of the Alcoa Portland Spent Potlining Process under agreed conditions and licence fees with Portland Aluminium.



THE ALCOA PORTLAND SPENT
POTLINING PROCESS IS
ATTRACTING ATTENTION FROM
SMELTERS AROUND THE WORLD.

solid wastes

During construction Portland Aluminium set up its own, Environment Protection Authority-licensed, eight-hectare landfill on-site to take non-process and non-hazardous waste.

In the early days of the smelter's operation there was minimal effort in reducing waste and by 1989 a disturbingly high proportion of the landfill site had been used between start-up in 1986 and 1989. At this time around 13,000 cubic metres of so-called waste was going to landfill annually.

The implementation of a management driven waste minimisation program in 1990 saw the amount of waste going to landfill by 1992 fall to 1,100 cubic metres a year. By 1996 this annual total had plummeted to just 21 cubic metres.

These improvements were achieved by the implementation of cleaner production and waste minimisation concepts and the widespread support of the workforce.

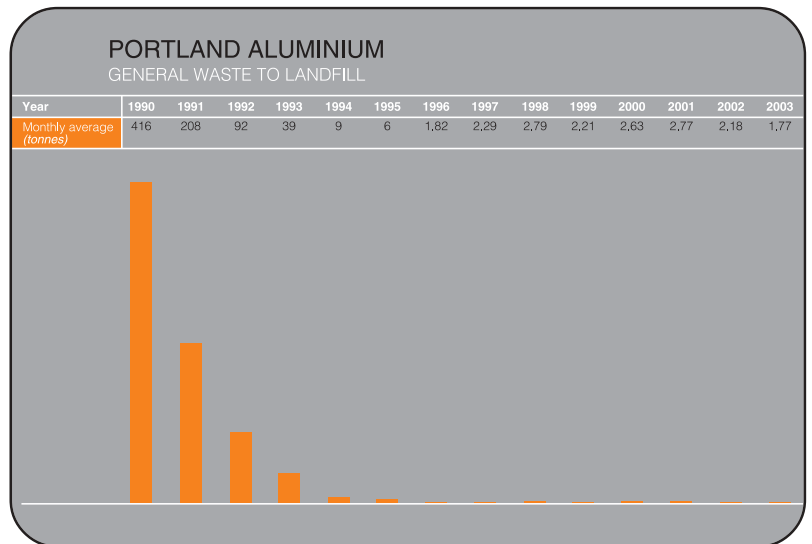
Ten years after facing the prospect of extending landfill, Portland Aluminium's landfill was used for the last time in 1999, with nearly six hectares of the eight-hectare site still unused. The small amount of general waste being produced each year is now placed in the municipal landfill.

WASTE WISE ACCREDITATION

The Portland Aluminium EcoRecycle Waste Wise Accreditation provides positive recognition to the plants waste reduction initiatives while significantly expanding networks to access professional resources from both EcoRecycle and the waste management industry.

The combination of the high level of corporate waste reduction objectives combined with the ongoing requirement to meet the by-annual criteria for Waste Wise accreditation will ensure the sustainability of waste minimisation programs at the plant.

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air emissions: fluoride

FLUORIDE EMISSIONS

Fluoride is widely distributed in all living things. It is also present in the earth's crust in the form of various minerals such as fluorapatite, cryolite and fluorspar. Fluoride in the gaseous form seeks more stable forms, typically as salts and minerals.

EFFECTS OF FLUORIDE

Effects from exposure to fluoride levels found around an aluminium smelter vary depending on the sensitivity of the local plant and animal species. Humans have a higher tolerance compared with plants. Some species of plants are known to be quite sensitive. The exposure standard of three parts per million (ppm) hydrogen fluoride (HF) for humans is close to 1000 times higher than that of 3.4 parts per billion (ppb) HF applied for vegetation. Therefore there is no concern for humans from ambient air exposures to gaseous fluoride. Visible injury to plants from fluoride exposure is generally seen in the leaves and includes distorted growth, loss of chlorophyll (seen as yellowing), development of a red colouration, and at high levels the death of tissue and eventually the death of plants.

FLUORIDE LIMITS

The EPA sets Portland Aluminium's total plant limit in grams per min (g/min). Portland Aluminium also use kilograms of fluoride per tonne of aluminium (kg/tAl) to set internal limits and in grams per min (g/min). There are three main sources of fluoride from the site - the potrooms, fluoride scrubbers (also known as A398 Reactors) and the carbon bake. Under the "Bubble Limit" the Site Total Fluoride Licence Limit is 418 g/min.

FLUORIDE PROCESS SOURCE

In the smelting process, fluoride typically is released as hydrogen fluoride and particulate fluoride from the breakdown of raw materials such as cryolite (Na_3AlF_6) and fluorspar (CaF_2), as alumina (Al_2O_3) is dissolved to produce aluminium.

MINIMISING AND CONTROLLING FLUORIDE EMISSIONS

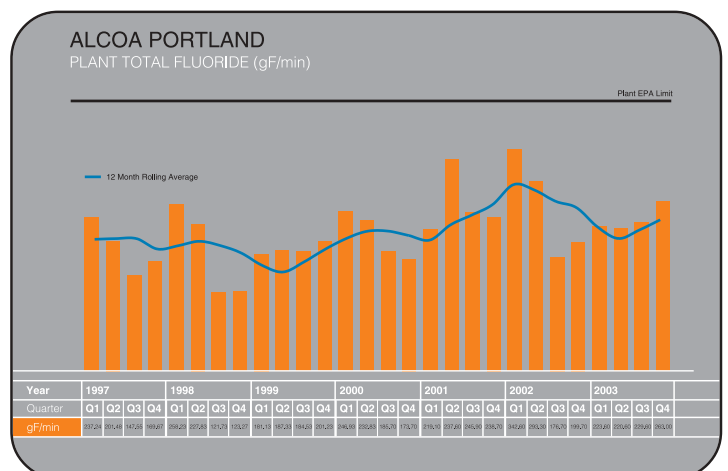
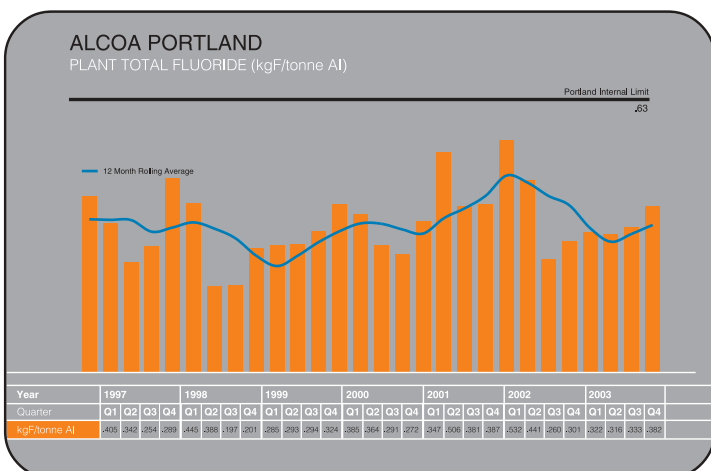
Fluoride emissions are minimised in the Potrooms by having the pots hooded and extracting the gases to the fume scrubbing systems. Here fluoride is absorbed onto fresh alumina and fabric filters scrub particulates. The reacted alumina from the fume scrubbing system is then fed back into the pots. Emissions from the carbon bake also contain fluoride and particulates. These are passed through a specially designed scrubber system, which absorbs the fluoride onto alumina that is also fed to the pots.

FLUORIDE MONITORING

Fluoride emissions are monitored using well-established sampling techniques used in aluminium smelters around the world and approved by the EPA. Emissions from the Potrooms roof vents are measured quarterly via a specially designed manifold system from which samples can be taken and analysed using EPA approved techniques at the on-site NATA approved laboratory. Ambient fluoride levels are measured continuously at the ambient air monitoring station situated approximately 1.3 kilometres north north-west of the Potrooms. Monitoring is also carried out on the cattle on our farm, and nearby vegetation and water.

In 2002/2003 on-line monitors were installed in each of the potrooms, to continuously measure and report on fluoride emissions throughout the room. The aim is to understand and rapidly correct high fluoride excursions. Some technical difficulties that were initially experienced with the equipment have been resolved and commissioning of the equipment is complete.

THE EPA SETS PORTLAND ALUMINIUM'S TOTAL PLANT LIMITS IN TWO WAYS - KILOGRAMS OF FLUORIDE PER TONNE OF ALUMINIUM PRODUCED (kgF/tAl) AND IN GRAMS PER MIN (g/min).



air emissions: sulphur dioxide

SULPHUR DIOXIDE EMISSIONS

Sulphur Dioxide (SO₂) is formed by the combustion of materials containing sulphur or sulphur compounds.

EFFECTS OF SULPHUR DIOXIDE

In high concentrations SO₂ has a pungent odour and irritates the human respiratory system resulting in coughing and a heavy chest. Exposure to SO₂ can bring about increased incidence of respiratory symptoms in those already suffering respiratory disease. SO₂ can also be corrosive to plants and building materials and is one of the pollutants involved in acid rain, however there is insufficient density of industry in Victoria for acid rain to occur.

SULPHUR DIOXIDE LIMITS

The smelter's EPA licence contains a maximum emission limit of 17,500 g/min for sulphur dioxide. The SO₂ emission levels for the plant in 2003 were below 13,000 g/min, well below the licence limit.

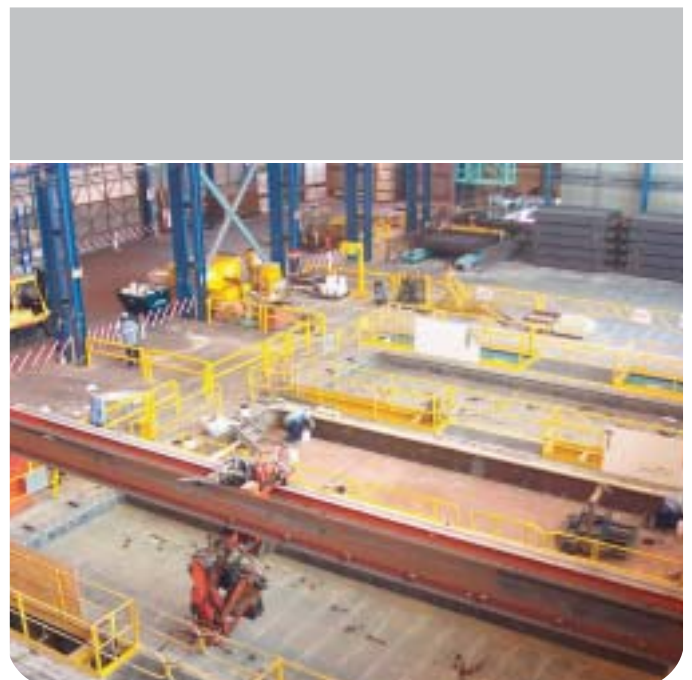
In addition, the State Environment Protection Policy - Air (SEPP-Air) sets ambient air quality objectives for the six common air pollutants including SO₂. The EPA is currently undertaking a review of the SEPP-Air.

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SULPHUR DIOXIDE PROCESS SOURCE

Sulphur dioxide emissions are not cleaned or 'scrubbed' at Portland, so the total emission is dependent on the exact level of sulphur in the coke supplied to us. It also depends on the amount of coke used on site, which is largely dependent on the amount of aluminium produced.

In 2002/2003 on-line monitors were installed in each of the potrooms, to continuously measure and report on fluoride emissions throughout the room.



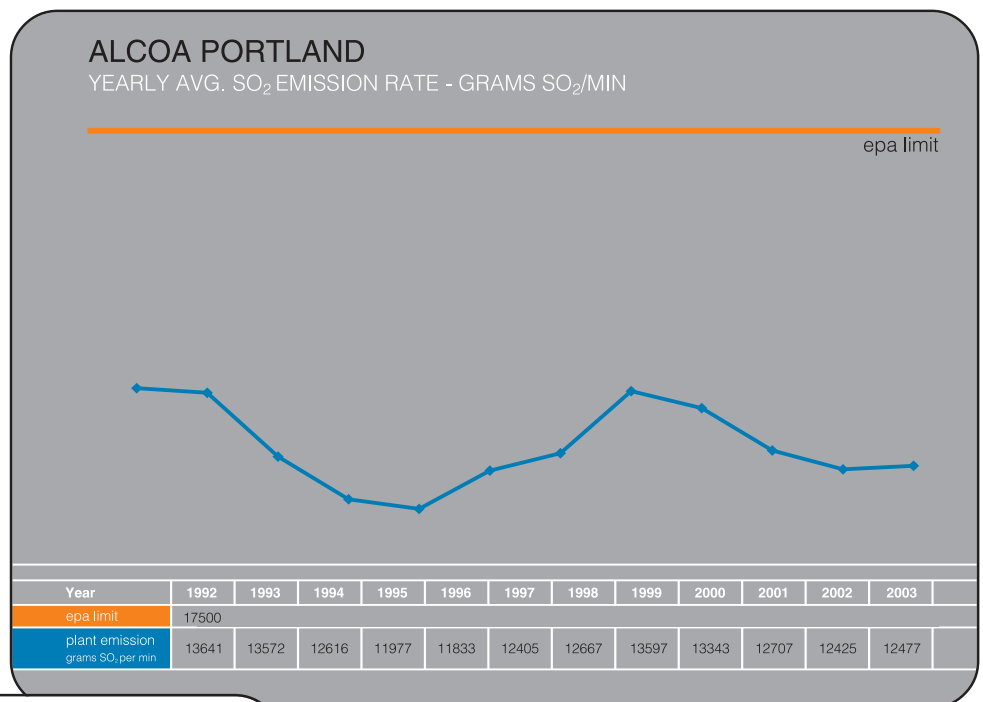
MINIMISING AND CONTROLLING SULPHUR DIOXIDE EMISSIONS

Alcoa sources high quality petroleum coke, with stable sulphur levels below licence limits, for use in our process. Cokes are typically sourced from North America, China and the Middle East, and most of Portland's coke comes from North America. There are no producers of anode quality coke located in Australia. Local Australian crude oil is not 'heavy' enough to produce anode quality coke – that is, it has the wrong chemical structure to be suitable.

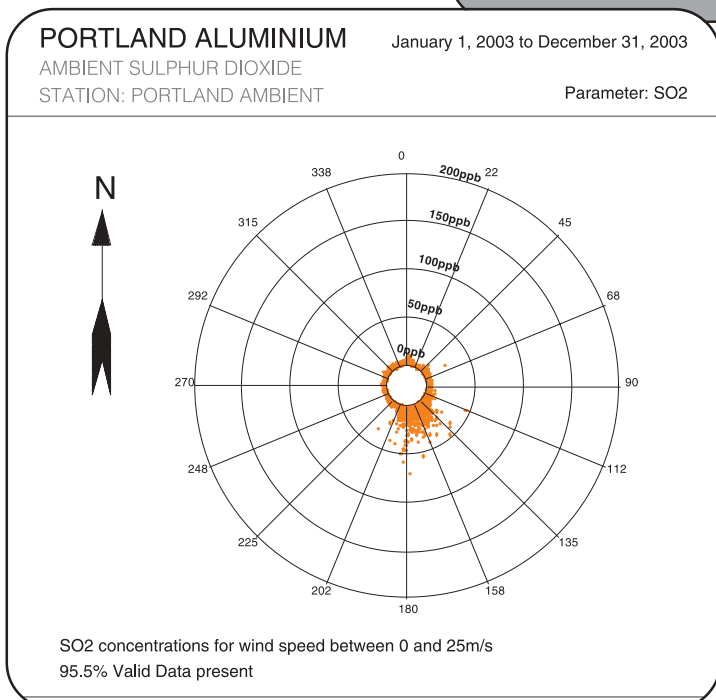
Plant emissions have fallen steadily in 1999-2002 due to a temporary reduction in sulphur levels in petroleum coke, driven by trends in the petroleum industry. This trend is forecast to reverse somewhat during 2003. Emissions will remain well within licence limits. Monitoring of concentrations at ground level will continue and these are not expected to increase significantly.

SULPHUR DIOXIDE EMISSION MONITORING

Total sulphur dioxide emissions are monitored continuously and determined over each calendar year using a detailed mass balance of sulphur inputs and outputs as per our EPA licence EM 32313. While Portland Aluminium's emissions have been well under EPA licence limits, before taller stacks were installed at the plant, ground level concentrations of sulphur dioxide sometimes exceeded the SEPP air quality standards. Monitoring since the installation of the taller stacks in 1997 has shown that ground level concentrations have reduced significantly and are now well below EPA objectives.



15



Monitoring since the installation of the taller stacks in 1997 has shown that ground level concentrations have reduced significantly and are now well below EPA objectives.

greenhouse gases & energy management

The main greenhouse gases generated by human activity are carbon dioxide, methane and nitrous oxide. PFC (perfluorocarbon) gases, which are released during the smelting of aluminium, are also greenhouse gases.

Portland Aluminium's smelting process is a large consumer of electricity. Large amounts of carbon dioxide are produced off-site in the generation of electricity from brown coal.

EFFECTS OF GREENHOUSE GASES

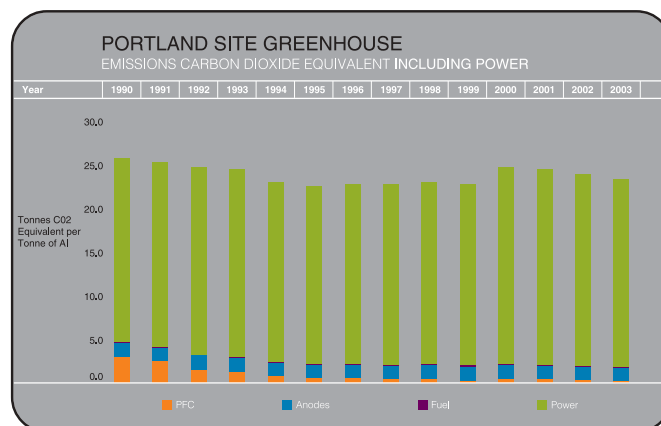
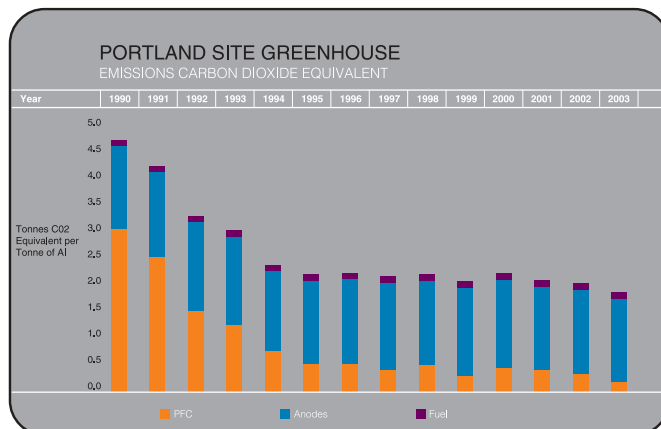
The Earth is covered by a blanket of gases, which allow light energy from the sun to reach the Earth's surface, where it is converted to heat and other forms of energy. Some gases in the atmosphere, called greenhouse gases, trap the heat before it can escape back into space. This is a natural effect, which keeps the Earth warm and allows us to survive.

Emissions of greenhouse gases due to human activities are leading to an increase in the concentration of greenhouse gases in the Earth's atmosphere. This results in an increased trapping of heat and adds to the natural greenhouse effect, producing an enhanced greenhouse effect. Increased temperatures in the lower atmosphere are likely to produce changes to weather and climate. Consequently the enhanced greenhouse effect is often referred to as climate change.

Alcoa is a global company and we believe that protecting the global environment is the responsibility of everyone. Alcoa has concluded that available evidence indicates Greenhouse Gas (GHG) emissions from human activities affect climate. We recognise that the risk of significant climate change is an issue of vital importance requiring action. Alcoa manages GHG emissions on a worldwide scale, operating consistently within our corporate values and national and local requirements.

- Where practical we will continue to improve energy efficiency in all our operations.
- Where practical we will improve our operations by implementing best practice technologies to reduce GHG emissions.

Alcoa is a participant (as a member of the Australian Aluminium Council) in the National Greenhouse Challenge. The Australian aluminium industry was one of the first industries to join with the Federal Government by entering into a voluntary cooperative agreement to reduce greenhouse gas emissions.



GREENHOUSE GAS SOURCES

On-site carbon dioxide is generated principally by the consumption of carbon anodes in the smelting process and the combustion of carbon based fuels. At Portland Aluminium, our main on-site fuel is natural gas. Perfluorocarbon (PFC) gases, CF_4 and C_2F_6 are released by the potline during brief upset conditions in the smelting pot, known as an anode effect.

A link exists between anode effects and energy management. Anode effects increase pot voltage and hence energy consumption. One of our major efforts has been to minimise the incidence and duration of anode effects as this reduces the production of perfluorocarbons and improves energy efficiency.



MINIMISING AND CONTROLLING GREENHOUSE GAS EMISSIONS

Since 1990 Portland Aluminium's on-site greenhouse gas emissions have more than halved, principally through the reduction of anode effects. We continue to closely monitor anode effect frequency and duration, as well as the anode carbon consumption and energy use that create greenhouse gases.

Another project aimed at optimising the performance of Portland Aluminium's smelting cells, the busbar project, was completed 10 months ahead of schedule in September 2002. It has resulted in a 3.1% reduction in energy consumption per tonne of aluminium produced and a corresponding reduction in greenhouse gases associated with the electricity used by the smelter during a year's production. Aluminium smelting cells require magnetic compensation to reduce the effect of the magnetic field produced when the massive electrical current flows through the cells. Improvements to this original design have allowed a significant reduction in voltage, which in turn has enabled reduction in energy consumption, improved environmental performance and reduced operating costs. The greenhouse gas savings expected over a full year are equal to a reduction of 0.59 tonne of CO₂ emitted per tonne of aluminium produced, or about 200,000 tonnes less CO₂ emitted each year in generating power to produce the same amount of aluminium.

air emissions: carbon bake scrubber

The carbon bake scrubber cleans dust, fluoride and organic materials from the gases leaving the smelter's carbon bake furnaces. This is where carbon anodes are baked for the smelting process.

Opacity is a measure of dust and fume levels in the gases entering the bake scrubber. A high level of opacity means that the gases entering the scrubber are 'dirtier'. This can be as a result of an inefficient burning or combustion process in the bakes, in the same way as an inefficient wood-burning stove emits dirty smoke.

The organic compounds present in the fumes are known as VOCs (Volatile Organic Compounds) and PAHs (Polycyclic Aromatic Hydrocarbons).

When the scrubber experiences an outage the fumes are emitted without being cleaned and are very visible.

Steps taken to improve the reliability of the scrubber in 2002/3 include:

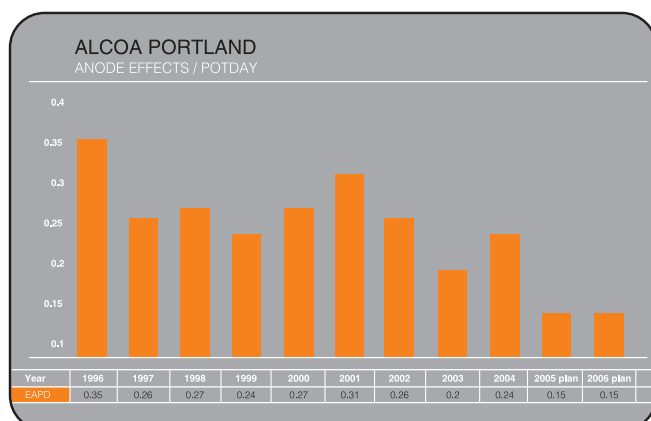
- Installed new broken bag detectors on all 8 baghouses.
- Installed new opacity meter on the stack.
- Installed Uninterruptible Power Supply for Scrubber control (prevent bypass due to power spikes).

anode Greenmill

The anode Greenmill is the area in which anodes are manufactured from the raw materials coke and pitch, and from returning recycled anode material or butts.

Historically some fumes have been generated and released to the building and to the atmosphere. As with the bakes scrubber emissions, the organic compounds present in the fumes are known as VOCs (Volatile Organic Compounds) and PAHs (Polycyclic Aromatic Hydrocarbons). These emissions have not been routinely monitored and reported to the EPA, as they have not been collected and released at one discharge point.

In 2002 work was completed to capture much of the material previously discharged as fugitive emissions in the Greenmill.



plant lighting

Lighting is installed on roadways, overhead structures and in work areas throughout the site. Some lighting operates throughout the day (for example in office areas and other buildings) whilst outdoor lighting generally only operates outside daylight hours.

Safety is the key issue for us in determining what lighting we need. When attempting to reduce the energy consumption of a lighting system, either by reducing the wattage of installed lighting or by smarter control of the installed lighting, the lighting system must still meet the required lighting standards.

In 2002 we carried out a survey of our plant lighting systems for the purpose of identifying potential areas where energy wastage could be reduced. This survey showed that the potential to reduce energy wastage throughout the smelter lighting system is not significant. Even though the cost savings may be modest, we are still committed to the plant lighting programme and to reducing energy wastage through improvements to our lighting system.



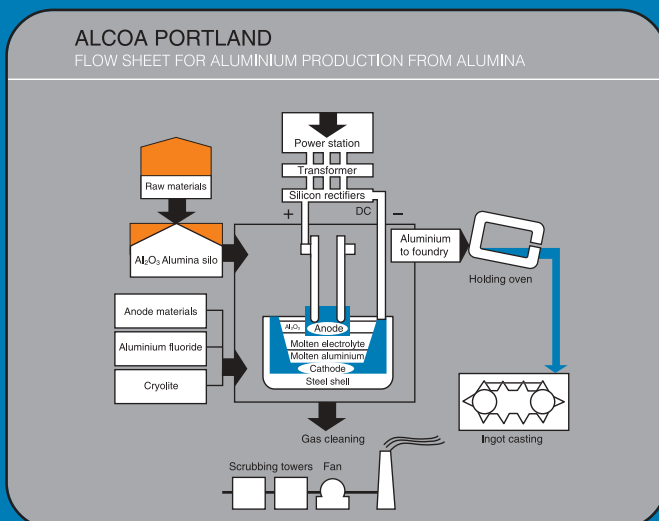
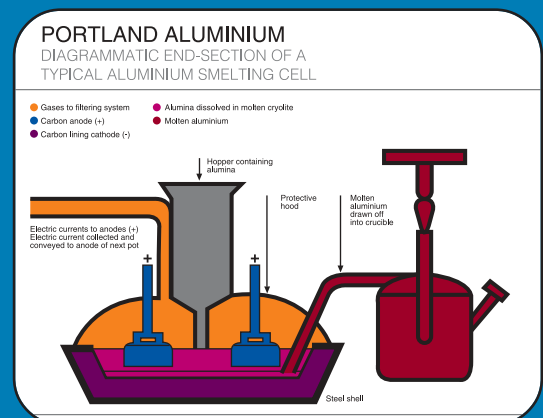
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the operating environment

Portland Aluminium is made up of a main site at Point Danger (Cape Grant), surrounding parklands and external facilities around the main site, a ship unloader at the Port of Portland wharf and a raw materials conveyer connecting the ship unloader to the main site.

The plant contains a number of operating areas as follows:

- Anode (Greenmill and the Bakes).
- Smelting services (Rodding Room, Dense Phase, Fume System and Anode Cover).
- Potrooms.
- Potlining.
- Spent potlining (SPL).
- Ingot mill.
- Switchyard.



The plant site also includes ancillary service areas:

- Stores.
- Administration.
- Computer support.
- Plant services.
- Environmental services.
- Strang compounds.
- Occupational health and safety services.
- Training rooms.
- Plant protection office.

A number of these services are located outside the main plant perimeter.

portland aluminium's environmental, health & safety (EHS) policy

EHS VALUE

We work safely in a manner that protects and promotes the health and well being of the individual and the environment.

EHS POLICY

It is Alcoa's policy to operate worldwide in a safe, responsible manner that respects the environment and the health of our employees, our customers and the communities where we operate. We will not compromise environmental, health or safety values for profit or production.

All Alcoans are expected to understand, promote and assist in the implementation of this Policy and the accompanying Principles.

EHS PRINCIPLES

- We value human life above all else and manage risks accordingly.
- We relentlessly pursue an EHS incident-free workplace.
- We do not compromise our EHS Value for profit or production.
- We comply with all laws and set higher standards for ourselves and our suppliers where unacceptable risks are identified.
- We support sustainable development by incorporating social responsibility, economic success and environmental excellence into our decision making process.
- We measure and assess our performance and are open and transparent in our communications.
- We supply and use safe and reliable products and services.
- We use our EHS knowledge to enhance the safety and well being of our communities.

We are all accountable for conforming with and deploying our EHS Value and Principles.

At Portland Aluminium, all employees and contractors will demonstrate our commitment to this EHS Policy and Principle Statement by progressively reducing our environmental, health and safety impacts and the intensity of our resource and energy use by participating in programs to:

- Ensure environmental, health and safety factors are integrated into business planning and review through the Alcoa Business System, as part of the implementation of comprehensive environmental and safety management systems;
- Systematically address key environmental impacts for the smelter, such as air quality, process water usage and discharge, waste generation & disposal, energy efficiency and greenhouse gas emissions and land management issues;
- Work together to care for ourselves, other people in our work area, and our neighbours;
- Actively share our improvements within Portland Aluminium and the wider Alcoa organisation.





portland aluminium environmental management system

Portland Aluminium holds an accredited EPA licence. We are committed to complying with all conditions set out therein and any relevant State environment protection policies, industrial waste management policies and regulations. In December 2002 Portland Aluminium achieved certification to the International Standards Organisation ISO14001: 1996 Environmental Management Systems standard.

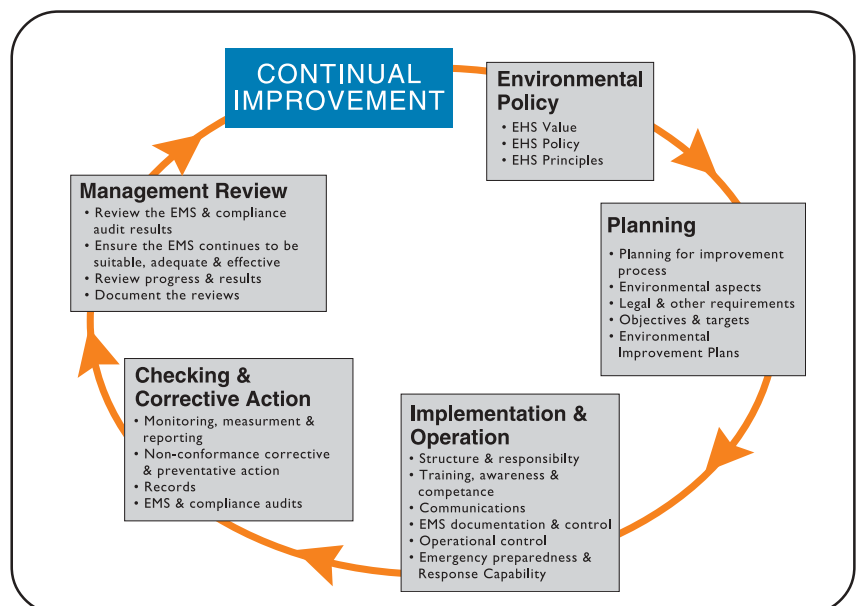
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ISO14001 requires Portland Aluminium to identify activities with the potential to significantly affect the environment, define the controls in place to manage those risks and develop action plans for improvement. ISO14001 also requires that potential environmental, regulatory and community impacts be addressed. The requirements of this standard are integrated into the daily activities of the operation.

Auditing is a systematic method to identify operational issues on the site that may present an unacceptable risk to the environment, management practices that should be modified to reflect best environmental management practices, and opportunities for improvement. An audit involves analysis, testing and confirmation of procedures and practices.

External auditing to the ISO14001 standard is conducted annually. Internal auditing, using the Alcoa Self-Assessment Tools is also conducted annually and complemented by a three to five year external Alcoa audit activity.

External re-Certification to the ISO14001 standard is required every three years and is dependant upon continued positive environmental performance, compliance with the standard and all associated legislation and regulations, and a continual improvement process that supports the attainment of best practice.



PORTLAND ALUMINIUM'S LICENCE TO OPERATE

In December 2001, Portland Aluminium was granted an Accredited Licence by the Environment Protection Authority (EPA). The EPA granted accreditation following demonstration of a high level of environmental performance and an ongoing capacity to maintain and improve this performance.

Under the old licence, all discharge points (stacks, discharge drains etc) were given an emission limit for each parameter (for e.g. gases, particulate, water quality etc). Under the accredited licence a "Bubble Limit" is given for each parameter. The "Bubble Limit" is the total amount of a substance permitted to be discharged for the site. An example is Total Fluorides. In the past the potrooms were licensed to emit 364 g/min, A398's 34.1 g/min, Carbon Bake Scrubber 17 g/min etc. Under the "Bubble Limit" the Site Total Fluoride Licence Limit is 418 g/min.

Portland Aluminium has adopted the old individual discharge point Licence Limits as Internal Limits. Exceedances of these limits are investigated and corrective actions implemented the same way as a non-compliance with law.

MANAGEMENT OF THE SUPPLY CHAIN

Portland Aluminium takes the following steps to minimise the risk to the environment through shipping of our key raw materials (coke, pitch, aluminium fluoride, Alumina):

- We deal with reputable suppliers who are expert in loading ships.
- We load at ports which have adequate systems and controls in place, and which operate and abide by all local EPA requirements.
- For shipments of coke, pitch and Aluminium Fluoride, a contract condition requires that ships be less than 15 years of age. This requirement alone means that we are only dealing with modern, safe vessels. All ships must conform to standard industry checks and dry-docking requirements.
- Unloading facilities at Portland are considered to be part of the Portland Aluminium site, and are maintained and operated in accordance with site standards.

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HAZARDOUS SUBSTANCES AND DANGEROUS GOODS ON-SITE MANAGEMENT PROCEDURES

In order to ensure that all hazardous substances used at Portland Aluminium are identified, that risks associated with their use are assessed and that appropriate controls are implemented to minimise risk, Portland Aluminium has developed and implemented EHS policy 4.01 – Hazardous Substances Management. This policy applies to all hazardous substances used at Portland Aluminium and is used in conjunction with Portland Aluminium Dangerous Goods Storage and Handling Policy (4.04), Federal and State Regulations and Alcoa EHS Worldwide Mandated Standards (eg. Above Ground Storage Tanks).

All Dangerous Goods storage areas are the responsibility of the department utilising the stored material. The areas are inspected as per written procedures for spill control, vessel integrity, maximum allowable amounts and containment.

Should a spill occur, all emergency response personnel are trained to respond to dangerous goods emergencies.

health & safety at portland aluminium



SAFETY

At Portland Aluminium, we are continuously working towards our goal of creating a workplace free of injury and occupational illness. Based on input from a corporate, regional and local level, and in close consultation with our employees and contractors we identify key health and safety initiatives that will help to drive us towards our goal.

Two key strategies we are currently working on are **fatality prevention** and **behavioural safety**

- The fatality prevention programme initially involved stakeholders from all areas, including our contracting groups, working with us to identify tasks with potential fatality risks. Based on risk rankings, teams are now working on strategies to reduce these risks.
- The second strategy focuses on behaviour-based safety, which uses observation and feedback to focus on leading indicators of safety performance – safe and at-risk behaviour. The process uses simple but effective techniques where employees observe each other then give appropriate one-on-one coaching feedback regarding safety related behaviours. Observation data is then collected and analysed to identify where barriers to safe behaviour need to be addressed by the team. As team members become more comfortable with the formal observation process, they begin to observe and give behaviour-based feedback informally as safety coaching becomes a natural part of the work culture.

In addition to these risk reduction strategies, we have an auditing programme that continually monitors the performance of our health and safety management system. On a regular cycle, we complete self-assessments complemented by a three-year external audit check completed by full time and specialist auditors from other plants worldwide.

FOR ANY GAPS IDENTIFIED,
ACTION PLANS ARE DEVELOPED
AND IMPLEMENTED.

HEALTH

Healthwise: Studying the Link Between Health and Work Environment

Since 1994, Alcoa has supported one of the largest and most comprehensive occupational health studies carried out in Australia. Called Healthwise, the long-term study is designed to assess the overall health status of people who have worked in the aluminium industry compared to people who have not.

Healthwise consists of three separate studies by health researchers at Monash University and the University of Western Australia that are overseen by a panel of international and local experts and representatives from Australia's key labour organisations.

The first study is on the respiratory health of existing employees. The second studies the respiratory health of new hires. The third and final study compares the rates of cancer and causes of death among people who have worked in the aluminium industry against rates and causes in the general population.

Early results have shown that employee respiratory symptoms are reported at similar rates to those reported in other surveys of the Australian general population. There were some minor differences between sites. Alcoa employees also have lower rates of death than the general population, and the total number of cancers in the Alcoa workforce does not exceed the rate seen in the general community. Some variations in the ratios of types of cancers were noted, however the numbers at this stage are small and these outcomes will be investigated further as the study progresses.



commitment to sustainable development

Alcoa, as manager for Portland Aluminium operations, has set clear goals measuring progress towards achieving cleaner air, better use of land and water, and the protection of human health in the coming years.



LOOKING 20 YEARS OUT; ACTING TODAY - ALCOA'S VISION FOR YEAR 2020

Sustainable development forms the basis for Alcoa's vision for the years ahead. Pursuit of this sustainable future is based on a strategic framework and supported by clear targets for measuring progress towards achievement of the vision.

Strategic framework:

- Elimination of all injuries and work related illnesses and the elimination of waste.
- Integration of environment, health, and safety with manufacturing.
- Products designed for the environment.
- Environment, Health and Safety as a core value.
- An incident free workplace (an incident is any unpredicted event with capacity to harm human health, the environment, or physical property).

Transparency and close collaboration in community based environmental, health, and safety initiatives.

PORTLAND ALUMINIUM'S WORK TOWARD SUSTAINABILITY

During May 2003 a facilitated workshop was held to assist Portland Aluminium management develop their understanding about Sustainability issues and what sustainability means for Portland Aluminium.

Prior to the workshop the independent facilitator interviewed a range of community stakeholders to get their perspective on Portland Aluminium and to try and understand some of the key issues for members in the community.

The workshop and feedback assisted Portland Aluminium in developing our key sustainability principles. These principles have been honed by ongoing consultation with workshop participants and feedback from both internal and external stakeholders. In conjunction with Alcoa's values, these principles will form the framework for future decision-making.



SUSTAINABILITY PRINCIPLES

- **Principle 1:** Portland Aluminium will achieve long term economic health by providing commercial returns to our shareholders while generating wealth for our community.
- **Principle 2:** Despite having a highly greenhouse intensive energy source, we will aim to reduce the greenhouse gas emissions within our control.
- **Principle 3:** We value the knowledge of our local community and, using our collective skills and abilities together, we will work to create positive change and build social capital in our region.
- **Principle 4:** We will acknowledge and share our problems, targets and performance with our community and all stakeholders; we will listen to and respect the views of our workforce and our community and safeguard their well-being.
- **Principle 5:** We acknowledge and value the contribution of local suppliers to our community and our business and we will work with them to make them competitive in our tendering and contracting processes.
- **Principle 6:** We will act as a regional leader encouraging other organisations to adopt sustainability through innovation.
- **Principle 7:** Our aim is to go beyond compliance, where technologically and/or economically feasible, and implement actions and programs in a timely manner.

ENVIRONMENTAL ACHIEVEMENTS

history of environmental improvement initiatives

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- | | | | |
|------|--|------|--|
| 1986 | Smelter operations commence. | 2001 | A project to modify the buswork of all smelting cells or 'pots', commenced in mid 2001 was completed, ahead of schedule, in October 2002. This project reduces the operating voltage of pots by approximately 150 mV, which is expected to lead to a net 3% reduction in both power usage and total greenhouse gas generation per tonne of aluminium produced. |
| 1989 | Waste minimisation program implemented. | 2002 | Victorian Premier, Steve Bracks, presented the Spent Potlining team with one of the state's highest environmental awards, the Victorian Premier's Business Sustainability Award for 2002. The team was also a category award winner (Infrastructure and Services) in the 2002 Banksia Award, which is a prestigious national environmental award. |
| 1991 | Smelter in the Park received Wildlife Habitat Enhancement Council certification as a viable habitat (the first granted outside of the US). | 2003 | Alcoa Environmental Health and Safety Achievement Awards were presented to Portland Aluminium for our work on the Busbar Retrofit and the design of the Environmental Education in the South West Resource Kit CD Rom. |
| 1992 | Ship unloader noise reduced by installation of additional silencers. | | |
| 1993 | Fluoride scrubbing tunnel introduced to collect fluoride emission from hot anode butts. | | |
| 1995 | Water reduction program started through sponsorship of Postgraduate student from University of South Australia. | | |
| 1997 | Taller stacks built on A398 scrubber units to reduce SO ₂ ground level concentrations. | | |
| 1998 | SPL Treatment and Fluoride Recovery Facility began operation. | | |
| 1998 | Portland Aluminium became a participant with the Australian Aluminium Industry in the National Greenhouse Challenge. This is a voluntary agreement that saw the aluminium industry commit to a reduction of greenhouse gas emissions from the 1990 level by 20%, by the year 2000. | | |
| 1999 | EcoRecycle Victoria presented Portland Aluminium with WasteWise certification in recognition of waste minimisation achievement. Alcoa is the first Victorian manufacturing industry to receive this certification. | | |
| 2000 | Portland Aluminium's manager, Alcoa becomes a signatory to the Minerals Council of Australia Code for Environmental Practice. | | |



We are reaching out to the community in new, exciting and innovative ways.



COMMUNITY CONSULTATION

In addition to consulting with the community on environmental improvements and broader community impacts, Portland Aluminium actively works with *local* organisations in partnerships. Some of the environmental partnerships and activities that Portland Aluminium have fostered and supported in 2002 are listed below.

environmental activities with community based partners

partnering organisation	Portland Aluminium personnel	contact	activity	alcoa area of excellence
Amphibian Research Centre	Ken O'Connor/ Lyndelle Hampshire/	Gerry Marantelli - Director	Alcoa Frog Watch partner. World Environment Day partners. Environmental Resource kit partner. Re-introduction of the Growling Grass Frog.	Global education - science, engineering, technology & business. Conservation & Sustainability
Coast Action/ Coast Care	Anna Sullivan/ Lyndelle Hampshire	John Amor - Facilitator	Environmental Resource Kit & World Environment Day partners.	Conservation & Sustainability
EcoRecycle Victoria/ South West Waste/ Green Triangle Recycling	George James/ Lyndelle Hampshire	Neil Povey - CEO South West Waste	Waste Wise accreditation, event promotion. World Environment Day partners. Resource Kit Partners.	Conservation & Sustainability
Fishcare	Lyndelle Hampshire	Dept of Primary Industries	Environmental Resource Kit.	Conservation & Sustainability
Portland Field Naturalists group	Lyndelle Hampshire/ Ken O'Connor	Doug Phillips - President	Bird counts, Alcoa Frog Watch, National Tree Day partner.	Conservation & Sustainability Global education - science, engineering, technology & business
Glenelg Hopkins Catchment Management Authority	Ken O'Connor/ Lyndelle Hampshire/ Gillian Macmillan	Michael Murphy - Chair Colin Dunkley - CEO David Nichols - Waterwatch; Peter Hill - Portland Project Officer	Water Watch, Surry River Landcare, Fawthrop Lagoon. National Tree Day, Clean Up Australia Day & World Environment Day, Environmental Resource Kit.	Conservation & Sustainability Global education - science, engineering, technology & business
Greening Australia (Vic)	Ken O'Connor/ Lyndelle Hampshire/ Gillian Macmillan	Ron Dodds - Regional Manager SW; Dave Warne - Alcoa Regional Seedbank; Tracey Delbridge - Living Landscapes, Moonbird Tours, Glenelg Biolink & Greencorp.	Alcoa Portland Seedbank, Landcare, Greater Glenelg Biolink, Alcoa Living Landscapes, Environmental Resource Kit, National Tree Day & World Environment Day partners.	Conservation & Sustainability Global education - science, engineering, technology & business
Kids Caring 4 Catchments	Anna Sullivan/ Lyndelle Hampshire	Karen Wales - Hopkins Moyne Catchment Management Authority	National Tree Day.	Conservation & Sustainability Global education - science, engineering, technology & business

Partnering stronger communities and building social capital is a focus for our future sustainability.

At the right are the 2003 ACTION Portland Aluminium Grant Recipients. From left; Portland North Primary School, The Graeme Husson Fauna Park Volunteer Committee, Narrawong and District Primary School and Friends of the Great South West Walk



environmental activities with community based partners (cont.)

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partnering organisation	Portland Aluminium personnel	contact	activity	alcoa area of excellence
Winda Marra	Gillian Macmillan/ Matt Pistner/ Anna Sullivan	Denis Rose - CEO Winda Marra Ken Saunders - Lake Condah Director Wendy Rotumah - Project Officer	Lake Condah, Sustainable Development Project & Community Dreaming Project.	Sustainability
Landlearn	Lyndelle Hampshire	Lydia Fehring - DPI	Environmental Resource Kit.	Conservation & Sustainability Global education - science, engineering, technology & business
Land for Wildlife	Lyndelle Hampshire	Tania Wood - DSE	Environmental Resource Kit.	Conservation & Sustainability
Portland Coast Water	John Ferguson/ Lyndelle Hampshire	Matthew Giesemann - CEO Melissa Down - Project Officer	Regional Water Reuse strategy, zero discharge from site. CAN sign-up. Environmental Resource Kit.	Conservation & Sustainability
Portland & District Primary & Secondary Schools	Lyndelle Hampshire/ Gillian Macmillan/ Anna Sullivan	Tony Curran - Portland & District Principals' Association	Environmental education packages, Alcoa Frog Watch, science & engineering field trips, World Environment Day activities.	Conservation & Sustainability Global education - science, engineering, technology & business. Safe & healthy children & families.
Pt Danger Committee of Land Management	John Hill/ Ken O'Connor	Andy Govanstone - Secretary	Pt Danger gannet colony & heath-land management (includes DNRE, indigenous, Local Government & other industry).	Conservation & Sustainability Business & community partnerships
Surry River Landcare group	Ken/O'Connor/ Lyndelle Hampshire/ Gillian Macmillan	John Fyfe	EIP & CAN member.	Conservation & Sustainability Global education - science, engineering, technology & business
Workers for Wetlands	Lyndelle Hampshire/ Ken O'Connor	Eddie Walker	National Tree Day.	Conservation & Sustainability
Lions Club of Portland	Lyndelle Hampshire/ Ken O'Connor/ Peter Anson/ George James	Jeff Klar	Fawthrop Lagoon 'Adopt an Island Project', National Tree Day, World Environment Day, Graeme Husson Fauna Park.	Conservation & Sustainability Business & community partnerships
Friends of the Great South West Walk Incorp.	Lyndelle Hampshire/ Ken O'Connor	Gordon Page partnerships.	'Smelter Nature Walk' World Environment Day.	Conservation & Sustainability Business & community

****These community-based activities do not include the many partnerships conducted with state and federal government agencies (such as the Victorian Department of Sustainability and Environment).***



community advisory network

Portland Aluminium has an established Community Advisory Network (CAN), hosting twelve members from various community groups, with one of these members voted in as Chairperson. Membership is for either one or two years.

The key function of the CAN is to represent the broader community in respect to issues that both Portland Aluminium and the Portland community can work on together to improve.

Key issues that the group are working on include:

- The attraction and retention of professionals to the Glenelg Shire.
- How shiftwork impacts on the community.
- Job opportunities and the online tendering process.
- Portland Aluminium's relationship with the education sector of the community.

Meetings are held bi-monthly, they are open to the public and are advertised in the Portland Observer. The EIP community consultation group will become a sub-group of this consultation process. This broader group should ensure that a wide range of opinion and ideas are captured to produce the most comprehensive and effective environment improvement plan possible.

For more information contact Gillian Macmillan, Community Relations Manager on 03 5521 5463.

general information

ENVIRONMENTAL EDUCATION AND PUBLIC TOURS

Portland Aluminium's Smelter in the Park has provided the basis for environmental learning opportunities for local and interstate school children since the plant commenced operation. School groups regularly participate in environmental programs designed by Portland Aluminium, the University of South Australia and local teachers. Themes include life in the wetlands, the impact of trails on habitats, study of plants, endangered and threatened animal species, changing environments, and bird habitats.

Portland Aluminium's Lyndelle Hampshire worked with ten other community partners (The Glenelg Hopkins CMA, Alcoa Landcare, Greening Australia, the State Department of Sustainability and Environment, State Department of Primary Industries, Alcoa Frog Watch, Coast Action / Coast Care, Moonbird Environmental Tours, Portland Coast Water and South West Waste), to put together the Environmental Education in the South West Resource Kit CD Rom. The CD incorporates 40 environmental education units suitable for primary school education and covers Classroom study, field trips and outdoor activities. The kit helps teachers to incorporate different aspects of local environmental education into their curriculum. The development of the CD was recognised by the Alcoa EHS achievement awards and has also been acclaimed and adopted by the Point Henry Smelter and the Anglesea Coal Mine, as well as the Corangamite Catchment Management Authority's (CMA) education library.



School groups, Landcare groups and other community organisations are also invited to use the smelter's nursery facilities for seed collection, propagation and re-vegetation activities.

Universities use the parklands to conduct regular monitoring and study programs.

This work is not only ideal for the universities; it also provides valuable research for Portland Aluminium.

Since the inception of public tours of both the parklands and the operations themselves, over 112,000 people have taken part in a free public tour of Portland Aluminium's facilities.

We support programs that make an environmental difference.



Tours are **Free of Charge** and are conducted each Monday, Wednesday and Friday at 10.15am and 1.00pm (excluding public holidays). All pickups and drop offs are made at the Portland Maritime Discovery Visitors Information Centre in town and tours last approximately two hours.

Bookings are advised and can be made by contacting the Portland Maritime Discovery Visitors Information Centre on 5523 2671. Other days are available by phoning tour guide Peter Malcolm on 5521 5393 or 0404 800 629.

general information

PLANT AMBIENT AIR MONITORING

Portland Aluminium currently operates two ambient air-monitoring stations. They are located at Barkly Street and Percy Street. The Barkly Street station monitors ambient fluoride and sulphur dioxide, wind speed, wind direction, ambient air temperature, relative humidity and rainfall. The Percy Street station monitors ambient sulphur dioxide. These stations require daily visits for maintenance. This level of maintenance requires that the site location be easily accessible and have required services available (e.g. power).

These sites are set up to monitor and ensure that the ground level concentrations do not exceed any standards, which have the potential to cause harm to the environment. The Barkly Street station is located in-line between the smelter and the town centre. This determines concentrations when the wind is blowing in that direction from the smelter. The Percy Street station is centrally located in town to indicate the potential level of exposure to people and for project work.

Other programs are used to assess the condition of the surrounding area of the smelter.

Fluoride emissions are modelled from the smelter to give ground level ambient concentrations around the smelter in all directions, including out to sea. Due to safety, the service and maintenance requirements of the stations and the inaccessibility to certain areas (e.g. Lawrence Rocks), modelling is the best available method of determining the ambient air concentrations for these areas.

HANDLING AN ENVIRONMENTAL COMPLAINT

All environmental complaints and inquiries are logged and entered on Portland Aluminium's environmental incident reporting system for follow-up.

This procedure is carried out even if the complaint has been resolved to the satisfaction of the concerned party at the time of calling. A note in Portland Aluminium's community contact records is also made. This record also provides the opportunity for Portland Aluminium to record positive comments on performance and environmental management.

28 Calls should be directed to Portland Aluminium's switchboard: **(03) 5521 5400** from where the caller will be transferred to the appropriate department.

RENEWABLE ENERGY – WIND TURBINES

Alcoa Portland Aluminium and Pacific Hydro have been working together for over 20 months regarding the connection arrangements of the Portland Wind Farm into the smelter switchyard. This will see the power output of up to 150MW from the 3 capes flow into the smelter and used in the production of aluminium. This arrangement provides efficient usage of existing infrastructure to facilitate wind farm connection and will provide a much lower cost of connection to Pacific Hydro, than other alternatives for connection. The arrangements are seen as a truly win-win situation for both parties, and an important enabler in the facilitation of this significant regional project.

NATIONAL POLLUTANT INVENTORY

The Federal Government, through Environment Australia, launched the National Pollutant Inventory, an Internet database that provides information on air, land and water emissions from industry, transport and households across Australia, in early 2000. It is intended to enable our communities to make better-informed decisions and to become more active participants in environmental management by providing data on the amounts of pollutants emitted to the environment, in which we live and work.

The NPI is published as a database on Environment Australia's Internet website (www.environment.gov.au/epg/npi/). This database contains information about the amount of pollutants emitted by sources such as our own operations, and estimates for Victoria by the Environment Protection Authority of emissions from smaller business activities such as petrol stations, dry cleaners or fast food outlets and other sources such as transport, home heating and cigarette smoking.

The aim is to satisfy community demands for this information and to help governments and industry with environmental planning and management.

In total 90 substances are reported on through the NPI, however, Portland Aluminium is not required to report each one. It is only necessary for us to report on emissions relevant to our industry and for which we have measurement data, or an acceptable estimation technique.

BELOW: We involve employees and their families in community tree planting days.



comments/feedback

questions

1. Were you satisfied with the information in the EIP? Yes No
Comments _____
2. Was the EIP easy to follow/read? Yes No
Comments _____
3. Did the EIP give you a better understanding of environmental initiatives at Portland Aluminium? Yes No

comments

4. Were there any areas that you felt needed more detail/were left out? Yes No
Comments _____
5. General comments _____

6. Are you happy for Portland Aluminium to contact you regarding your comments or specific query? Yes No

name: _____

address: _____

contact details: phone: _____ mobile: _____

email: _____

Portland Aluminium is committed to community consultation.

We regard community consultation as a most important part of our environmental management plan, and we thank you for your input.

Your comments will enable us to make this process more efficient in the future.

portland aluminium EIP 2003-2004 comments/feedback form

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REPLY
PAID
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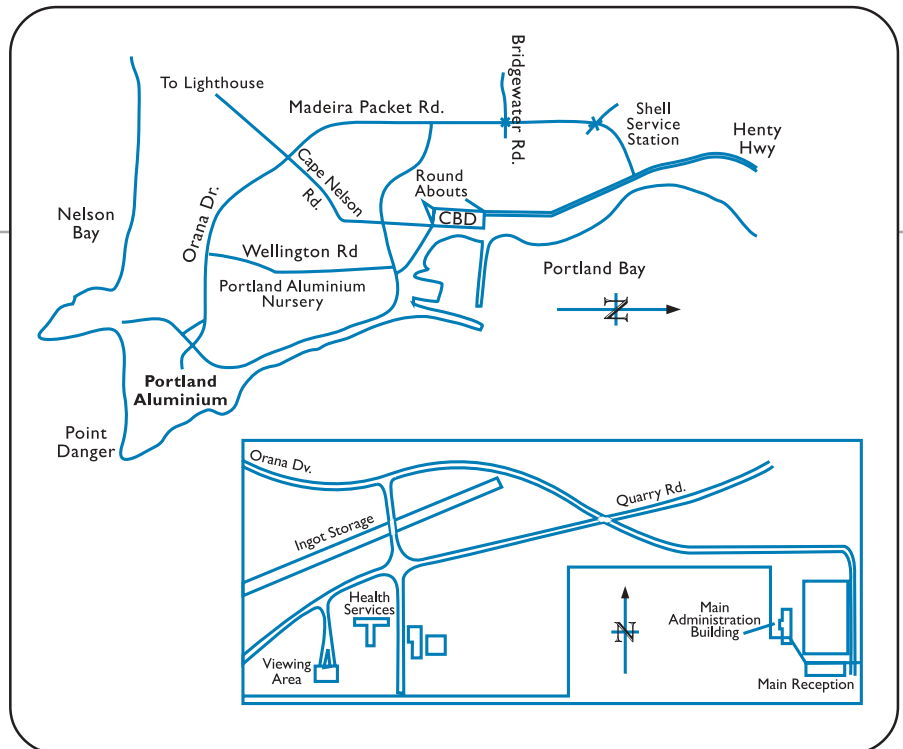


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site map



ENVIRONMENT

IMPROVEMENT PLAN 2003-2004



australia's aluminium
since 1963

