

Worsley Alumina



MAKING A
DIFFERENCE
FROM THE
GROUND UP



OUR VALUES

CARE

We are about people, the communities we are a part of and the world we depend on.

TRUST

We deliver on our commitments and rely on each other to do the right thing.

TOGETHERNESS

We value difference, listen and share, knowing that together we are better.

EXCELLENCE

We are courageous and challenge ourselves to be the best in what matters.



A WORLD-CLASS BUSINESS

South32 Worsley Alumina is one of the largest bauxite mining and alumina refining operations in the world. We are a joint venture between South32 (86 per cent), Japan Alumina Associates Australia Pty Ltd (10 per cent) and Sojitz Alumina Pty Ltd (4 per cent).

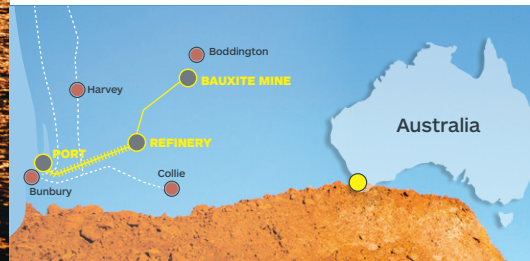
We are committed to ensuring production is achieved safely, that environmental issues are managed responsibly and we are a valued community member.

Bauxite mining takes place near Boddington, 130km south-east of Perth. The bauxite is transported 51km by overland conveyor to our alumina refinery, 15km north-west of Collie, where the red rock is turned into white alumina powder

using the Bayer Process. The alumina is then railed 55km to the Bunbury Port for export to aluminium smelters worldwide.

Worsley began production in 1984 and in the first year we refined about 1 million tonnes of alumina. We have continued to expand and invest in new technology, taking our design capacity to 4.6 million tonnes of alumina per annum.

In our first 30 years of operation, we produced more than 71 million tonnes of alumina. This would have made enough aluminium for 2.35 trillion soft drink cans. Strong, light-weight and 100 per cent recyclable, aluminium is commonly used in the transport, packaging, construction and electronics industries.



BAUXITE MINE AND CONVEYOR



MINE

Our mining lease covers about 2,700 square kilometres of Crown and private land stretching from Brookton Shire in the north to Collie Shire in the south. Our bauxite operations are a continuous process of mining and rehabilitation:

- Timber is harvested and topsoil removed for use in rehabilitation.
- The exposed hard-cap is drilled and blasted or deep ripped.
- The bauxite is excavated using front-end loaders and hydraulic excavators and hauled by truck to crushing facilities from where it is fed on to the conveyor.
- Rehabilitation starts once the pits are exhausted.
- The land profile is re-established and the topsoil returned along with logs and rocks for fauna habitats. A native seed mix is then sown.
- We rehabilitated more than 2,500 hectares in our first 30 years.

CONVEYOR

An overland conveyor links our mine and refinery. At 51km, it is the longest of its kind in Australia, a great engineering feat and one of our competitive advantages.

- It follows the natural topography, avoids high conservation value areas and is raised in parts to allow wildlife movement.
- It passes through 42.5km of forest, 8.5km of private land and crosses 29 roads and 2 rivers.
- The cable-belt design contains about 200km of wire rope, 100km of rubber belt and 68,000 pulleys. It is covered to assist with dust and noise management.
- Travelling at 25km an hour and carrying 3,400 tonnes of bauxite per hour, the conveyor could load a semi-trailer in about 30 seconds.
- A second 10km-long conveyor links the Marradong and Sadelback mining areas and the overland conveyor through to the refinery.

REFINERY AND PORT

REFINERY

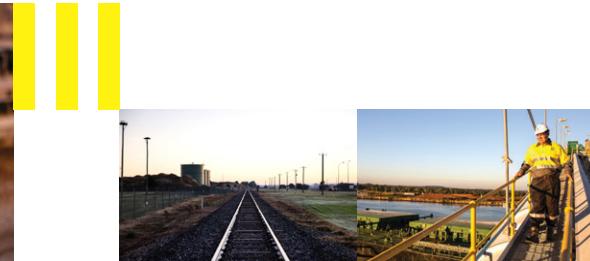
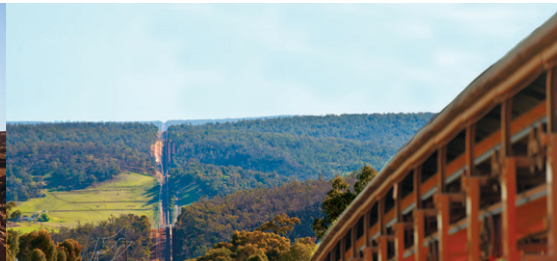
Our refinery, 15km north-west of Collie, turns the red bauxite rock into white alumina powder using the four-stage Bayer Process:

- **DIGESTION:** The bauxite is crushed in rod and ball mills and then dissolved in caustic soda to separate the alumina hydrate from the sand.
- **CLARIFICATION:** The sand, or residue, settles to the bottom of tanks while the dissolved alumina is filtered off the top. The sand is pumped to disposal areas.
- **PRECIPITATION:** The dissolved solution is cooled and seeded with additional alumina crystals.
- **CALCINATION:** The solution is filtered and the crystals baked at high temperature to remove chemically-bound water, leaving pure alumina.
- About 3.3 tonnes of our bauxite produces 1 tonne of alumina.
- About 2 tonnes of our alumina produces 1 tonne of aluminium.

PORT

The alumina is railed 55km to the Bunbury Port, where we have a dedicated berth and are the second biggest single exporter.

- We import caustic through the port and rail it the same distance to the refinery.
- We can store up to 150,000 tonnes of alumina and 100,000 tonnes of caustic at the port.
- Once trains arrive at the port, the alumina is released from the bottom of the wagons onto a conveyor which feeds three storage silos.
- Our ship loader uses the latest technology to minimise dust and noise.
- Our alumina is exported to smelters in about 10 countries throughout the world including South32's Hillside and Mozal aluminium smelters in Africa.
- Our alumina is among the best in the world and is used to make high-purity aluminium products, mainly in the electronics industry.



SUSTAINABILITY

WE CARE ABOUT PEOPLE, THE COMMUNITIES WE ARE PART OF AND THE WORLD WE DEPEND ON.

We work hard to understand and manage health, safety, environmental and community impacts and opportunities associated with our operations and to create shared value.

Making sure our people go home safely at the end of every shift is the most important thing we do at Worsley.

We are committed to sustainable environmental management and have detailed noise, dust, air, water and waste management strategies to meet regulatory requirements and community expectations.

We are proud to be part of the Boddington, Collie and Greater Bunbury communities, which host our operations and are home to the vast majority of our employees.

We inject more than \$1 million each day into our host communities through wages, local business spend and community investment.

We meet regularly with stakeholders to discuss local issues and ways we can help make our communities great places to live and work.



CAREERS

WE ARE PROUD TO BE ONE OF THE BIGGEST PRIVATE EMPLOYERS IN THE SOUTH WEST AND PEEL REGIONS.

We employ more than 1,800 employees, 750 permanent contractors, and 60 apprentices and trainees across our mine, refinery and port operations.

Our employees live in Boddington, Collie, Greater Bunbury and surrounding communities, which all offer enviable lifestyles and access to high-quality health services, education opportunities, recreation and entertainment.

As part of the South32 portfolio of global operations spanning three continents,

Worsley employees enjoy career development opportunities that come with being part of a diversified resources company.

We are committed to building a diverse and inclusive workplace where every employee is treated fairly and with respect. Together we are better.

Register for South32 job alerts by visiting south32.net. A notification will be sent to you once a job opportunity matches your criteria.



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