

10 ENVIRONMENTAL MANAGEMENT PLAN

10.1 Accreditation and Standards

The Environmental Management System is accredited to ISO14001 (1996). The ISO 14001 scope covers the power station, mine and the Alcoa component of the management of the Anglesea Heath.

10.2 System Procedures

The Anglesea Environment Management System encompasses a range of elements that cover:

- Policy
- Planning
- Implementation & Operation
- Checking & Corrective Action
- Management review

The Anglesea Environment Management System as part of the ISO14001 certification maintains a register of standards and statutory obligations that apply to Alcoa's operations.

A legal counsel system covers all the acts potentially relevant to Anglesea. An external legal firm maintains the system and updates are communicated to environmental personnel quarterly to ensure the sites are kept up to date with new legislation and standards.

10.3 Identification of Significant Aspects & Impacts

Alcoa's environmental policy, improvement plans and management programs are developed to ensure that activities at Anglesea are managed to minimise impacts on the environment. In developing the Environmental Management System a systematic review of all operations was carried out to identify potential environmental impacts.

A risk assessment process was used to rank the environmental aspects and impacts according to potential environmental impact, frequency or likelihood of occurrence, legislative or other requirements, stakeholder concerns (including community and employees) and financial liability.

All potential impacts ranked as 'significant' must have systems in place to mitigate or minimise the impact on the environment.

The potential significant environmental impacts relevant to land management include, but are not restricted to,

- Spread of Phytophthora due to the movement of equipment and soil and drainage of water from Phytophthora-affected to Phytophthora-free areas;
- Disturbance of areas that have heritage values, rare and endangered species and ecosystems;
- Reduced localised biodiversity due to clearing and loss of habitat;
- Increased stream turbidity due to runoff from disturbed areas; and
- Unsustainable revegetation due to ineffective rehabilitation techniques.

The Aspects and Impacts Register is reviewed at least annually and as the future mining operation develops, the continuous improvement and review processes will ensure the Register is kept current.

10.4 Environmental Review

In 2006, Alcoa commissioned Sinclair Knight Merz (SKM) to review three distinct mining options at Anglesea, each to enable continuity of coal supply past 2016 until 2030 (known as the Alcoa Anglesea Lease Extension: Review Stage 1). These three mining options now form the basis of the total mining sequence outlined in this Plan and ensure sufficient available coal reserves out until at least 2061. Even though the boundaries used in this review work are not exactly the same, they are largely representative of the boundaries used within this Work Plan, and the collected data and recommendations are an important contribution into the future management required for long term mining strategy.

The review process was generally based around Environmental Effect Statement (EES) guidelines and incorporated the following aspects:

Physical and Ecological Assessments

- Greenhouse gas assessment
- Landform, Geology and Soils
- Groundwater extraction
- Riverine and Water Quality
- Aquatic Ecology
- Water Use
- Terrestrial Biodiversity and Conservation

Human Communities

- Land Use and Planning
- Air Quality and Dust Emission Assessment
- Noise and Vibration
- Roads, Traffic and Transport
- Aboriginal and Post settlement Cultural Heritage Assessment
- Social Impact assessment
- Economic and Tourism Impact Assessment

The review also covered other aspects such as planning and legal issues, significance of groundwater extraction impacts and a community consultation process.

A further, more comprehensive review was undertaken in August 2007 (Alcoa Anglesea Lease Extension: Review Stage 2) and was focused wholly on one of the identified options, that being lower seam predominantly under the current mining area.

10.5 Water Management

Surface Water

All surface water currently collected in the mine area resulting from rain fall within the mining catchment area, is managed to the mine sump area (generally located at the deepest working section of the mine) and then pumped via an established pipeline to holding ponds adjacent to the mine area. These reclamation ponds are used to manage water quality issues prior to the water being pumped for use at the adjacent power station. Any excess water overflow issue are subject to EPA licence discharge limits.

This basic process is not expected to alter significantly with the various future mine stages. The mine sump will continue to be moved to various locations, generally located in the deepest section of the working mine. Any issues with external water overflows from the mine surface holding ponds would be subject to EPA licence conditions.

Groundwater

Due to the depth of the current mine, shallow aquifer groundwater accumulates at the mine sump area and along with any accumulated surface water, is also pumped from the sump area to holding ponds adjacent to the mine area, as above.

The groundwater component being pumped from the mine is subject to Groundwater Licence conditions applied by Southern Rural Water. Essentially the mine sump is assessed as extracting groundwater, much as if it were a well bore and is part of the licensing applied to the various groundwater bores located adjacent to the power station and used to extract process water for power station use.

Once again, this basic process is not expected to alter significantly with various future mine stages. It is expected that mining of some of the lower coal seam deposits will generate increased volumes of groundwater which will be managed to ensure licence limits are complied with. Similarly, the varying depths of the mine stages will need evaluation to determine if the mine sump retains the requirement of having to be compliant with groundwater licensing.

10.6 Hydrocarbon and Waste Management

The existing fuel, oil and grease facilities are all fully bunded and are located primarily at the mine diesel tanks and at the mine workshop. Bunding is not only supplied for holding tanks, drums and other containers but also covers the distribution areas as well. All earthmoving equipment is fitted with dry-break connections to minimize contamination and spillage issues. Currently, all filters are crushed and the resultant oils treated as waste oil and the metal filters recycled.

All waste oils and heavily contaminated materials are collected by an EPA licensed contractor.

The current facilities and methods are seen as sufficient to cover future operations.

10.7 Dust Control

Currently, dust suppression is managed by water cart and redistribution of water from the Fire Service Dam and periodically from other available water sources. Dust suppression is managed using a hierarchy of controls, which are adequate for most conditions with the exception of extreme north westerly winds.

Monitoring of dust along the mine's southern boundary is undertaken annually and as the mine progressively moves further away from the Anglesea boundary, it is expected that any potential impacts will also reduce.

All boundary dust issues arising from mining activities shall be managed to be in compliance with the State Environment Protection Policy (Air Quality Management) – SEPP (AQM).

10.8 Noise Control

In general, the southern boundary of the mining lease follows a natural ridgeline that gives rise to natural acoustic shielding for the township of Anglesea. Mine sequencing has been developed over time to preserve this aspect. Also in recognition of the mine location with respect to the township of Anglesea, operating hours have been generally restricted to a day shift only regime. Additionally, all equipment has been required to meet stringent noise requirements and is maintained in good working order to retain those qualities.

Over time, there have been several noise studies conducted at the mine to both measure the current noise impacts on the surrounds and to model the expected impact as the mine continues to develop.

It is expected that the current overburden mining area and the areas until 2014 will continue to have minimal impact on the existing background noise levels at the residential boundaries.

As the mine develops further northward and away from the township of Anglesea, the distance will help reduce the noise, however, further noise studies will be required due to the reduced likely effectiveness of the acoustic shielding provided by the natural ridgeline boundary described above.

All boundary noise issues arising from mining activities shall be managed to be in compliance with the State Environment Protection Policy N-1 Noise Policy ("SEPP N-1").

10.9 Cultural Heritage Management Plan

In compliance with the Aboriginal Heritage Regulations 2007, underpinned by the Aboriginal Heritage Act 2006 (Vic) (AH Act), Stage 1 of the sequential mine plan contained in this Work Plan, has an approved Cultural Heritage Management Plan (CHMP) : Plan ID 10885.

For the remaining Work Plan area, Alcoa Anglesea commits to obtaining approval under Part 4 of the AH Act, before any mining activity authorised by the Work Plan is undertaken (except where the mining activity is within an area that has been subject to significant ground disturbance).

10.10 Audit

Compliance and auditing is achieved via the System Audit Procedure. Internal auditing is completed using the Alcoa Self Assessment Tool (ASAT). External verification is conducted by ISO14001 auditors.

10.11 Environment Improvement Plan

Alcoa prepares a regular Environment Improvement Plan in relation to Anglesea. An Environment Improvement Plan (EIP) is seen as an effective tool for guiding a company's environmental management through a process of continuous improvement. The EIP is intended to give a public commitment to improving environmental performance, by giving an overview of Alcoa's operations at Anglesea, the improvements accomplished in the past and the program of current initiatives.

The EIP is currently a voluntary initiative, and the current EIP is included at Appendix A.

The current EPA waste discharge licence is included at Appendix B.

10.12 EH&S 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 and continually improve EHS systems and processes to achieve 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 pollution prevention and 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 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 Anglesea Power Station, we 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 through the Alcoa Business System as part of the implementation of comprehensive environmental and safety management systems.
- Systematically address key environmental impacts for the power station and mine, such as land management issues, equipment noise, air quality, process water usage and discharge, energy efficiency and greenhouse gas emissions. Working together to actively care for ourselves, our team-mates and other people in our area, our neighbours and the environment.
- Work together to care for ourselves, other people in our work area, and our neighbours.
- Actively share our improvements and achievements with the station, other Alcoa locations and with the community in which we operate.
- Engage and consult with employees and the community on health and safety and environmental issues.

Stephanie Pearce
Location Manager
Anglesea Power Station

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