



THE UNIVERSITY OF
NEW SOUTH WALES

SCHOOL OF MINING ENGINEERING

Environmental Standards in Clearances for Sustainable Development

Janet Epps

Regulation of Standards

- Where do the standards come from?
 - International treaties (RAMSAR) closure
 - WHO, ILO, UNEP (Agenda 21, Seas)
 - Intergovernmental Agreements (Fed-state, Aus-NZ)
 - ANZMEC, ANZEC (mine closure, water quality)
 - ISO (8,000; 9,000; 14,000)

© UNSW School of Mining Engineering

Regulation of Standards

- Where do the standards come from?
 - Industry self-regulation
 - Voluntary codes (Cyanide, MCA Code for Env Mgt)
 - Industry – Government arrangements
 - Greenhouse Challenge, BPEM in Mining booklets

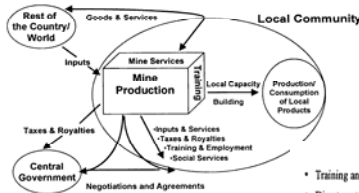
© UNSW School of Mining Engineering

Regulation for closure & end land use

- Requirements for closure/end land use:
 - EIS
 - EMP/Annual reporting (govt, public reporting)
 - Stakeholder engagement outcomes
 - Progressive rehabilitation
 - Mine closure plan submission

© UNSW School of Mining Engineering

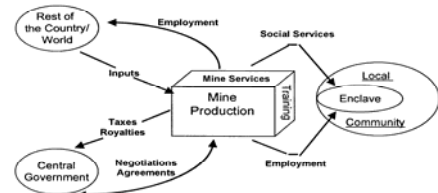
The New Broad-Based Benefits Model



- Training and social services focused on the community as a whole.
- Direct contribution from the mining company to build community asset base.
- Most employment positions filled by local community members.
- Mine services out-sourced to the community.
- Spin-off employment opportunities as or more important than direct mining jobs.
- Some inputs sourced from local community and surrounding regions.
- Negotiations and agreements with central government, local government, indigenous peoples, and NGOs.
- Significant part of the taxes and royalties go to local community.

© UNSW School of Mining Engineering

The Old Enclave Model



- Training and social services dedicated to the mine.
- Most employment positions filled by non-community members.
- In-house mine services.
- Inputs sourced from outside the community.
- Negotiations and agreements with the central government.
- Most taxes and royalties go to the central government.

© U



Australian Minerals Industry Code for Environmental Management (2000)

THE PRINCIPLES: ELEMENTS AND ACTIVITIES

We, the signatories to the Australian Minerals Industry Code for Environmental Management, commit to progressively implementing the Code by:

1	<p>ACCEPTING ENVIRONMENTAL RESPONSIBILITY FOR ALL OUR ACTIONS Bringing environmentally responsible behaviour throughout the organisation by:</p> <ul style="list-style-type: none"> • Demonstrating management commitment. • Allocating clear roles, responsibilities, accountabilities and resources. • Providing necessary information, performance targets, training, resources and management support.
2	<p>STRENGTHENING OUR RELATIONSHIPS WITH THE COMMUNITY Engaging the community about the environmental performance of our operations by:</p> <ul style="list-style-type: none"> • Fostering openness and dialogue with employees and the community. • Respecting cultural and heritage values and facilitating cross-cultural awareness and understanding. • Consulting with the community on the environmental consequences of our activities. • Anticipating and responding to community concerns, aspirations and values regarding our activities.
3	<p>INTEGRATING ENVIRONMENTAL MANAGEMENT INTO THE WAY WE WORK Ensuring environmental management and related social issues are high priorities by:</p> <ul style="list-style-type: none"> • Establishing environmental management systems consistent with current standards. • Incorporating environmental and related social considerations into the business planning process along with conventional economic factors. • Applying risk management techniques on a site-specific basis to achieve sound environmental outcomes over the life of the project. • Developing contingency plans to address any residual risk. • Ensuring resources are adequate to implement the environmental plans during operations and closure.
4	<p>MINIMISING THE ENVIRONMENTAL IMPACTS OF OUR ACTIVITIES Responsibly managing immediate and longer-term impacts by:</p> <ul style="list-style-type: none"> • Assessing environmental and related community effects before and during exploration and project development. • Evaluating risks and alternative exploration and mining project concepts, taking into account community views and subsequent land use options. • Adopting a sensitive and cautious approach to environmental risks throughout the life of each operation. • Applying biological principles that recognise the importance of biodiversity conservation. • Planning for closure in the feasibility and design phases of a project and regularly reviewing plans to consider changes in site conditions, technology and community expectations.

© UNSW 5 February 2000 Page 3

Australian Minerals Industry Code for Environmental Management (2000)

5	<p>ENCOURAGING RESPONSIBLE PRODUCTION AND USE OF OUR PRODUCTS Pursuing cost-effective cleaner production and product stewardship by:</p> <ul style="list-style-type: none"> • Employing production processes that are efficient in their consumption of energy, materials and natural resources. • Minimising wastes through recycling, and by reusing process residues. • Safely disposing of any residual wastes and process residues. • Promoting the safe use, handling, recycling and disposal of our products through an understanding of their life cycle.
6	<p>CONTINUALLY IMPROVING OUR ENVIRONMENTAL PERFORMANCE Continually seeking ways to improve our environmental performance by:</p> <ul style="list-style-type: none"> • Setting and regularly reviewing environmental performance objectives and targets that build upon regulatory requirements and reinforce policy commitments. • Monitoring and verifying environmental performance against established criteria so that progress can be measured. • Benchmarking against industry performance and addressing changing external expectations. • Researching the environmental aspects of our processes and products and developing better practices and innovative technologies.
7	<p>COMMUNICATING OUR ENVIRONMENTAL PERFORMANCE Being open and transparent in the effective disclosure of our environmental performance by:</p> <ul style="list-style-type: none"> • Identifying interested parties and their information needs. • Providing timely and relevant information including publication of annual public environment reports on our activities and environmental performance. • Encouraging external involvement in monitoring, reviewing and verifying our environmental performance. • Continually reviewing and evaluating the effectiveness of our communications.

© UNSW School of Mining Engineering