



MT OWEN COMPLEX

ENVIRONMENTAL MANAGEMENT STRATEGY

NOVEMBER 2011

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ENVIRONMENTAL MANAGEMENT STRATEGY

1. INTRODUCTION

1.1 Site Description

The Mt Owen Complex (MOC) is located in the Hunter coal fields of New South Wales, approximately 25 kilometres north-west of Singleton (refer to **Figure 1**). The Complex is owned and managed by Xstrata Mt Owen (XMO) which is a wholly owned subsidiary business unit of Xstrata Coal Australia Pty Ltd (Xstrata). The Mt Owen Complex currently consists of three adjacent DA approved open-cut coal mines; Mt Owen, Ravensworth East and Glendell Mines (refer to **Figure 2**). Mt Owen Mine is contract mined, currently by Thiess Pty Ltd (Thiess). The Glendell mine is owned and operated by XMO and comprises the Barrett Pit and West Pit (formerly known as Ravensworth East Mine).

The current Mt Owen Mine development consent enables the integration of the Ravensworth East and Glendell mining operations into the Mt Owen Complex through the shared use of coal transportation and coal processing infrastructure, and tailings management systems. Following the acquisition of Glendell Mine in 2003, Xstrata has developed synergies between the three adjacent mining operations: Mt Owen; Ravensworth East; and Glendell. Approval was granted in 2004 for the extension to open cut mining operations at Mt Owen and integration of the proposed Glendell Mine into the Mt Owen Complex (DA 14-1-2004). Development consent for the Ravensworth East Mine (DA 52-03-99) was granted in 2000 and was modified in August 2005 to align with the Mt Owen Consent and provided for the integration of the mining operations' management into the Mt Owen Complex. A modification, approved in 2008, to the Glendell Mine development consent (DA 80/952), enabled the implementation of a revised mining plan while maintaining the synergies with the approved Mt Owen Complex. Mt Owen consent was also modified in November 2010 to accommodate rail refuelling facility on the Mt Owen Rail Spur.

1.2 Scope

This Environmental Management Strategy (the Strategy) has been developed to minimise environmental impacts from the MOC by providing the strategic context for environmental management across the Mt Owen, Ravensworth East and Glendell mines. The Strategy is formulated from the requirements of DA 14-1-2004 for Mt Owen Mine, DA 52-03-99 for Ravensworth East Mine and DA 80/952 for Glendell Mine, and sets out to:

- identify the statutory requirements that apply to the Mt Owen Complex;
- describe how:
 - environmental performance is monitored and managed;
 - the local community and relevant agencies will be kept informed about the operation and environmental performance;
 - complaints will be received, handled, responded to and recorded;
 - disputes will be resolved;
 - non-compliance issues will be responded to;

- cumulative impacts will be managed; and
- emergencies will be responded to;
- describe the roles, responsibilities, authority and accountability of all the key personnel involved in environmental management of the Mt Owen Complex; and
- provide an overview of the Environmental Management Systems of the Mt Owen Complex.



Figure 1: Locality Plan

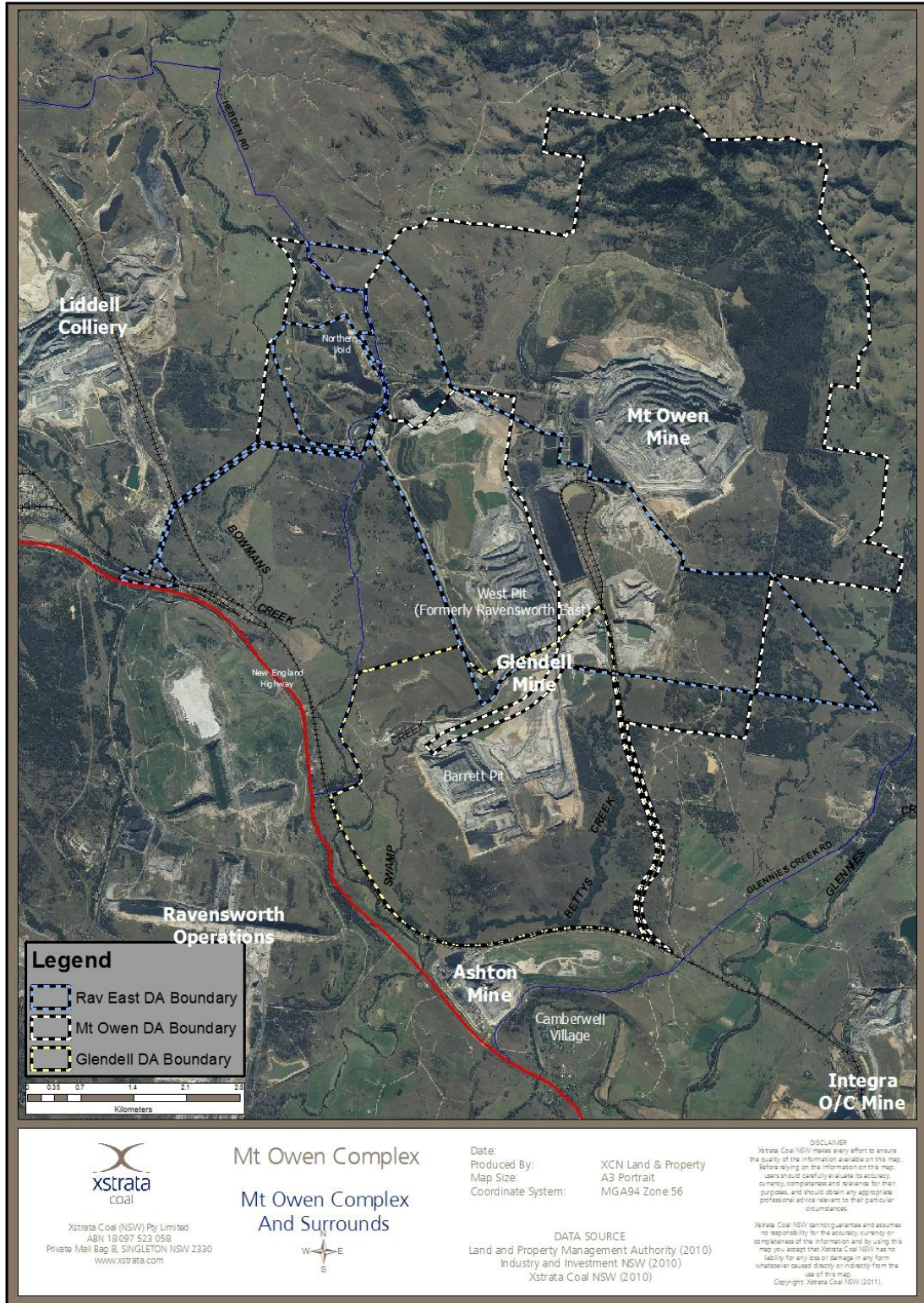


Figure 2: Mt Owen Complex Boundaries

1.3 Purpose

The objectives of this Strategy are to:

1. provide the overall framework for environmental management at the Mt Owen Complex utilising the principles of ISO14001;
2. ensure compliance with the Mt Owen Mine, Ravensworth East Mine and Glendell Mine development consents, other project specific environmental licences and permits, the commitments in the Mt Owen EIS (Umwelt, 2003), Ravensworth East EIS (ERM Mitchell McCotter, 1999), Glendell EA (Umwelt, 2007) and other relevant legal requirements;
3. effectively integrate the requirements of the Xstrata Environmental Management Framework and relevant legal and other requirements into a site-specific document, detailing environmental management objectives and responsibilities at Mt Owen Complex;
4. show the relationship and interactions between various operational and environmental components of the Mt Owen Complex;
5. provide effective mechanisms for external communications, in particular development of an ongoing relationship with the local community; and
6. assist Mt Owen Complex staff and contractors in better administering their responsibilities regarding environmental due diligence and management.

In addition to the Mt Owen, Ravensworth East and Glendell Development Consent, the Strategy has been developed generally in accordance with ISO 14001, the international standard for environmental management systems (EMS's) and is consistent with the Xstrata Coal NSW Environmental Management Framework (Version dated 14/06/2006). The Strategy applies to all components of Mt Owen Complex operations.

The Strategy sets out the procedures for periodic review, auditing and where necessary, revision of the Strategy, so that it is maintained to reflect current mining operations to the satisfaction of the Director-General of Department of Planning and Infrastructure (DoPI).

Implementation of this Strategy will assist in minimising the environmental impacts of Mt Owen Complex by facilitating continual improvement in environmental performance. The Strategy promotes proactive environmental management, which will facilitate ongoing compliance with environmental commitments and legislative requirements. It also identifies how XMO will seek to maintain and build on its good relationship with the local community and other key stakeholders.

The Xstrata Mt Owen Health, Safety, Environment and Community Policy outlines the commitments made by XMO in relation to environmental management of the Mt Owen Complex. The policy has the commitment and support of senior management and will be reviewed annually. The Strategy is also designed to assist in the implementation of Xstrata Plc Management Standards for Health Safety Environment and Community.

The relationship between Xstrata Plc principles, standards, visions and policies is shown on **Figure 3**.

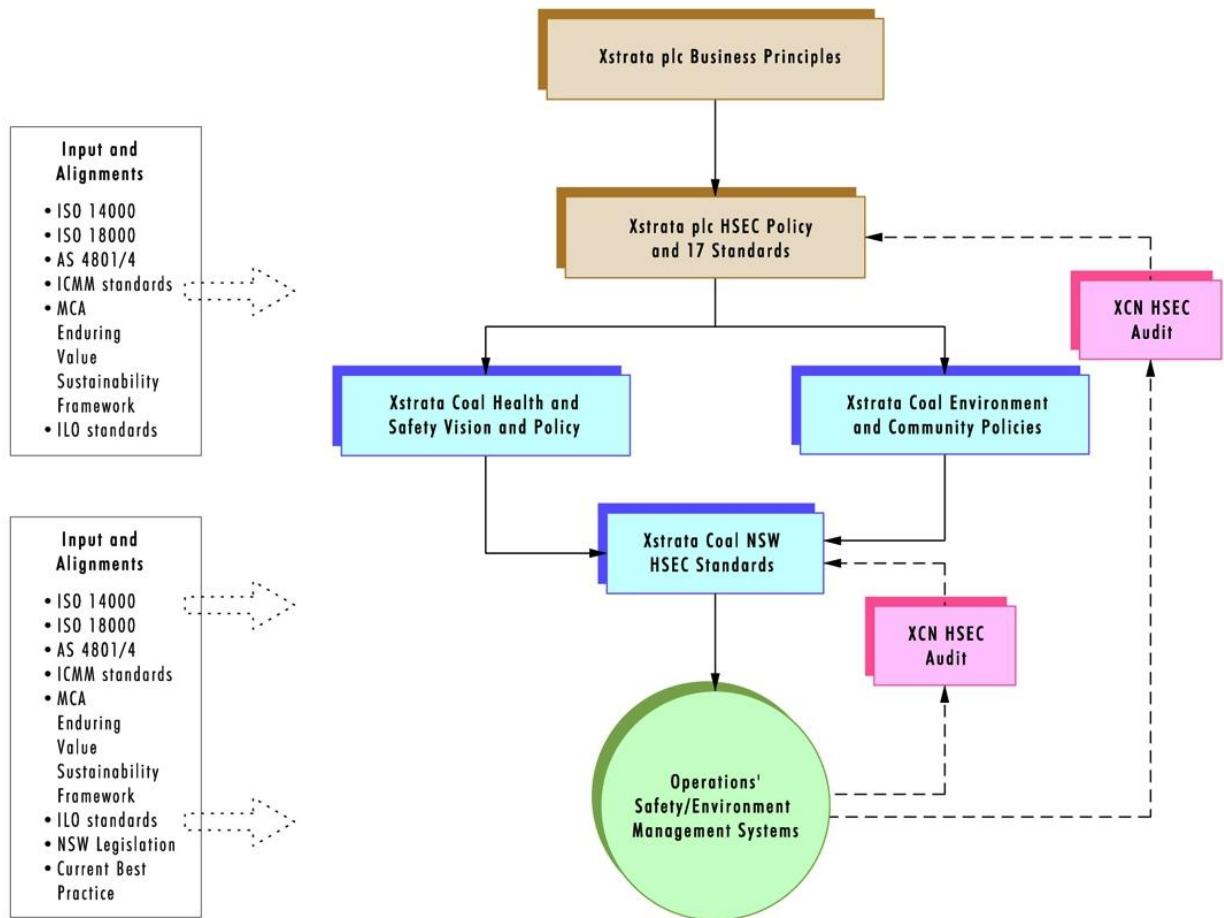


Figure 3: XCN HSEC Management Framework

Source: XCN Environmental Management Framework

2. PLANNING

2.1 Development Consent Conditions

The development and implementation of this Strategy is required by Condition 1, Schedule 6 of the Mt Owen Development Consent (DA 14-1-2004), Condition 1, Schedule 6 of the Ravensworth East Development Consent (DA 52-03-99) and Condition 1, Schedule 5 of the Glendell Development Consent (DA 80/952). Details of development consent conditions specifically relating to the Strategy and where they are addressed within the document are provided in **Table 1**.

Table 1 - Development Consent Conditions Relating to the Strategy and where they are Addressed in this Document

Development Consent Condition	Relevant Section
Schedule 6 of Mt Owen (DA 14-1-2004) and Ravensworth East Consent (DA 52-03-99)	
Environmental Management Strategy	Whole document
1. The Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:	
a) provide the strategic context for environmental management of the development;	Section 3.2
b) identify the statutory requirements that apply to the development;	Section 3.3
c) describe in general how the environmental performance of the development would be monitored and managed during the development;	Section 4.1
d) describe the procedures that would be implemented to: <ul style="list-style-type: none"> i. keep the local community and relevant agencies informed about the operation and environmental performance of the development; ii. receive, handle, respond to, and record complaints; iii. resolve any disputes that may arise during the course of the development; iv. respond to any non-compliance; v. manage cumulative impacts; and vi. respond to emergencies. 	<ul style="list-style-type: none"> i. Section 3.7 ii. Section 5.2 iii. Section 5.2 iv. Section 5.1 v. Section 3.5 vi. Section 3.10
e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.	Section 7.1
Schedule 5 of the Glendell Consent (DA 80-952)	
Environmental Management Strategy	Whole Document
1. The Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:	
(a) provide the strategic framework for environmental management of the development;	Section 2.2
(b) identify the statutory requirements that apply to the development;	Section 3.3

Schedule 5 of the Glendell Consent (DA 80-952)	
(c) describe in general how the environmental performance of the development would be monitored and managed;	Section 4.1
(d) describe the procedures that would be implemented to: <ul style="list-style-type: none"> i. keep the local community and relevant agencies informed about the operation and the environmental performance of the development; ii. receive, handle, respond to, and record complaints; iii. resolve any disputes that may arise during the course of the development; iv. respond to any non-compliance; v. manage cumulative impacts; and vi. respond to emergencies; and 	<ul style="list-style-type: none"> i. Section 3.7 ii. Section 5.2 iii. Section 5.2 iv. Section 5.1 v. Section 3.5 vi. Section 3.10
(e) describe the role, responsibility, authority, and accountability of all key personnel involved in the environmental management of the development.	Section 7.1

2.2 Environmental Management System Structure and Policies

This Strategy provides the strategic context for environmental management at the Mt Owen Complex. The Strategy outlines XMO's commitment to proactive community and environmental management and demonstrates XMO's commitment to reducing environmental and community impacts.

The structure of this Strategy is based generally on the structure of the international standard for environmental management systems ISO 14001, which follows the 'Plan-Do-Check-Act' process. A description of this process and how it relates to the XMO managed EMS is provided in **Table 2**.

Table 2- Structure of the Mt Owen Complex Environmental Management Strategy

Feature	Requirements	Strategy Section Reference
Plan	Maintain register of legal and other requirements. Maintain register of environmental aspects and impacts. Set environmental objectives and targets. Develop environmental programs and management plans.	Section 2.0 Planning.
Do	Responsibilities for environmental management. Provision of environmental awareness training and assessment of competence. Internal communications and document control. External communications with regulators, members of the public and other stakeholders. Management of complaints. Operating procedures. Incident management. Emergency preparedness and response.	Section 3.0 and 7.1
Check	Annual review of compliance with environmental statutory requirements during preparation of the Annual Environmental Management Report. Environmental Monitoring Non-compliance and corrective/preventive action. Audits.	Section 4.1 Environmental Monitoring, Corrective Action and Audits.
Act	Periodic review and revision of the EMS by senior management. Non-compliance and corrective/preventive action.	Section 5.2 Management Review. Section 4.1 Environmental Monitoring, Corrective Action and Audits.

2.3 Authorisation, Revision and Distribution Control

The Strategy is subject to regular revision as described in the Mt Owen Complex Environmental Management Plans. As a minimum, revision of the Strategy shall be undertaken within three months of the completion of the Independent Environmental Audit in accordance with the relevant consent conditions of the Mt Owen, Ravensworth East and Glendell development consent. Revision shall be undertaken by the XMO Environment and Community (E&C) Manager and approved by the XMO General Manager and the Mt Owen Complex Operations Manager.

The control of documentation associated with the Strategy is to be undertaken in accordance with the XCN Legal Compliance and Document Control Standard. The revision status of the Strategy is provided in **Section 10.1** and is shown in the footer of each EMS document.

3. IMPLEMENTATION

3.1 Environmental Management System

Xstrata Coal and XCN HSEC Standards and Policies

As a division of Xstrata Coal, XCN is required to operate within the Business Principles, Sustainable Development Policy and Standards set by Xstrata plc. XCN has developed a comprehensive set of HSEC standards that have been developed to address the Xstrata plc standards as a minimum and provide guidance to operations on their effective implementation. The requirements of the XCN HSEC Standards and Policies have been incorporated into the Mt Owen Complex EMS documentation where relevant.

Xstrata Environmental Management System

XCN originally developed a corporate EMS in 2001, which is consistent with the principles of ISO 14001, and specifically seeks to provide a practical and straightforward management tool for both corporate and site management. This document was revised as the Xstrata EMS in 2006 and is intended to provide for corporate environmental management and also serve as an umbrella document, with supporting functions, to assist and guide business units in development, implementation and maintenance of the site EMS.

Mt Owen Complex Environmental Management System

To assist with the ongoing effective management of operations at the Mt Owen Complex, XMO have developed and implemented an EMS generally in accordance with ISO 14001. The Mt Owen Complex EMS is consistent with the Xstrata Corporate EMS. The components of the Mt Owen Complex EMS's are:

- Environmental Management Strategy (this document);
- Environmental Management Plans and Annexures; and
- Site Work Procedures;

In accordance with ISO 14001, the Mt Owen Complex EMS include the following key components:

- HSEC policy and commitment;
- planning, including:
 - identification and management of legal and other requirements;
 - objectives and targets; and
 - environmental and community programs aimed at achieving ongoing improvements in environmental performance;
- implementation and operation, including:
 - assigning responsibility for implementation of the EMS;
 - training and awareness;
 - communication including ongoing community consultation and a complaints management system; and

- operational control; including preparation of management plans and operational procedures as appropriate, and incident and emergency response and reporting processes;
- measurement and evaluation, including:
 - environmental monitoring;
 - audits and implementation; and
- management review in order to ensure ongoing adequacy and effective implementation of the EMS.

Compliance with the EMS will be ensured by training, inspections, audits and regular review, with the overall implementation objective being the continual improvement of the Mt Owen Complex environmental performance.

As a result of the continual improvement cycle, the EMS is dynamic and all references made to specific procedures in this Strategy or other regulatory required Management Plans may change over time. Modifications of EMS references will only be updated in this Strategy and Management Plans as part of the consent required reviews.

3.2 Vision, Values and Policy

The Mt Owen Complex operates under four environmental and community policies, these being:

- the Xstrata plc Sustainable Development Policy, Business Principles, Beliefs;
- the XCN Environment Vision and Policy;
- the XCN Community Vision and Policy; and
- the Mt Owen Complex Health, Safety, Environment and Community (HSEC) Policy.

All activities at the Mt Owen Complex will be undertaken in accordance with the principles of these four policies. Future changes to these Policies will not constitute a revision of the Strategy.

The Mt Owen Complex HSEC Policy defines the environmental and community commitments and principles of XMO and the direction for improvements in environmental performance. The policy has the commitment and support of XMO senior management.

The HSEC policy is reviewed following any major operational or legislative changes and as a minimum annually as part of the Environmental Management Review. All Mt Owen Complex personnel are to be inducted in relation to the policy. The HSEC policy is displayed prominently at various locations onsite and distributed to the public on request and is available on the Mt Owen website.

3.3 Legal and Other Requirements

The Mt Owen Complex HSEC Policy stipulates that the activities at the Mt Owen Complex will be undertaken in accordance with relevant legislation and the requirements of statutory authorities. In order for XMO to maintain compliance with statutory requirements applying to the Mt Owen Complex, it is necessary that these requirements are identified and that performance against these requirements is regularly reviewed. The XMO E&C Manager will

be responsible for maintaining a register containing a summary of all environmental statutory requirements, such that:

- all environmental legislative requirements are suitably identified and stored. A register of federal, state and local government legislative instruments is contained within the Mt Owen/Ravensworth East EMS and Glendell EMS;
- all documents are easily located, retrieved and available when required; and
- all legislation is updated as required, with obsolete documents removed from service.

The statutory authorities that are relevant to the Mt Owen Complex are identified in **Table 3**.

Table 3 - Statutory Authorities Relevant to Mt Owen Complex

Commonwealth Authority	NSW Authority
Department of Sustainability, Environment, Water, Population and Communities	Department of Planning and Infrastructure (DoPI)
	Department of Industry and Investment – Mineral Resources (DII)
	Department of Industry and Investment – Forests NSW
	Office of Environment and Heritage
	Office of Water
	Mine Subsidence Board
	WorkCover New South Wales
	Australian Rail Track Corporation
	Energy Australia
	NSW Heritage Office
	Singleton Shire Council

It is the responsibility of the E&C Manager to be aware of changes to relevant legislation, policy and guidelines, and to notify the Operations Managers, General Manager and Xstrata Group Environmental Manager (GEM) of changes that may significantly affect the Mt Owen Complex. Means by which the E&C Manager will keep up to date with changes in legislation, policy and guidelines include:

- reviewing information from GEM;
- attendance at Xstrata Group Environmental Meetings or attendance at committee meetings;

- review of NSW Minerals Council Environment Committee minutes and, as appropriate, attendance at Committee meetings;
- membership of and participation in the Hunter Coal Environment Group;
- liaison with government agencies;
- legal opinion, as required;
- advice from environmental consultants; and
- participation in professional development seminars.

Other External Stakeholders

An electronic database of all identified external stakeholders is maintained on site. This includes but is not limited to;

- Neighbouring Residents;
- Community Groups;
- Regulatory Bodies contacts;
- Aboriginal Groups; and
- Environmental Groups.

Stakeholders are provided with regular updates on the operational, environmental and social performance of the Mt Owen Complex, through various communication channels detailed in the *Mt Owen Complex Social Involvement Plan*. Relevant stakeholders are also consulted prior to commencement of significant new developments undertaken by XMO.

Industry Codes of Practice

Enduring Value – the Australian Minerals Industry Framework for Sustainable Development – Minerals Council of Australia

Xstrata Coal is a signatory to Enduring Value – the Australian Minerals Industry Framework for Sustainable Development. The commitment to Enduring Value has the following obligations:

- progressive implementation of the ICMM Principles and Elements;
- Public Reporting of site level performance, on a minimum annual basis, with reporting metrics self – selected from the Global Reporting Initiative (GRI), the GRI Mining and Metals Supplement or self-developed; and
- assessment of the systems used to manage key operations risks.

XMO maintains its commitment to the principles of Enduring Value through the collation and reporting of GRI information on a monthly basis which is reported directly to XCN through the sites XSD database. Information from XMO is used and publicly reported by Xstrata annually.

Greenhouse Challenge Plus

Xstrata Coal has signed onto the Australian Greenhouse Challenge Plus. XCN has a high-level of commitment to the abatement and management of greenhouse gas emissions, in tandem with their support for the continued development of coal as a clean source of energy.

XMO has the responsibility to record their site greenhouse data and report this information generally in accordance with *HSEC STD 1.10 HSEC Measurement and Reporting*. XMO identifies possible greenhouse abatement programs in the HSEC Annual Plans and budgets.

3.4 Environmental Objectives and Targets

Corporate Environmental objectives and targets are set on an annual basis generally in accordance with the XCN Strategy and Annual Plan. The HSEC objectives and targets for XCN Corporate are contained in the XCN Strategy and Annual Plans. A copy of the XCN Corporate HSEC Strategy and Annual Plan is maintained on the Intranet.

Objectives and targets are set annually through the development of the sites HSEC annual planning process. The objectives and targets are set in consideration of:

- XCN Corporate objectives and targets as set by XCN HSEC personnel;
- Xstrata Environment and Community Vision and Policies;
- The Mt Owen Complex Health, Safety, Environment and Community Policy;
- Aspects and impacts;
- Legal and other requirements;
- Implementation of the EMS;
- Training;
- Progressive implementation of the Enduring Value – The Australian Minerals Industry Framework; and
- The prevention of pollution in accordance with statutory requirements.

The targets are specific and measurable and achievement of some targets should be able to clearly demonstrate environmental improvement. Progress in achieving objectives and targets is to be reviewed at least quarterly.

XMO's objectives and targets are to be progressively achieved through implementation of the sites annual HSEC Plan. In order to meet their objectives and targets XMO implements environmental programs through the action based reporting tool *XstraSafe*.

The performance of the operation against internal performance criteria is documented in the XMO Annual Environmental Management Report and is assessed in site quarterly reviews. Progress against the site HSEC annual plan is monitored through the sites action based reporting tool *XstraSafe*.

3.5 Environmental Aspects and Impacts

Identification of Aspects and Impacts

Identification of the sites environmental aspects and impacts is an integral part of the Mt Owen Complex EMS. Aspects and Impacts associated with XMO's operations are identified using a risk based process that is generally consistent with the XCN Risk and Change Management Standard.

The XCN Risk and Change Management Standard ensures the planning process is focused upon key aspects of relevance to the environmental and community performance of XMO's operations based upon a process which requires:

- identifying hazards/aspects and impacts;
- assessing the risk associated with those hazards/aspects and impacts; and
- identifying the controls necessary to eliminate or otherwise reduce, as far as practicable, those risks in accordance with the establishment hierarchy of controls for HSEC purposes.

A register of key environmental aspects and impacts of XMO's existing operations is maintained by the XMO E&C Manager. A review of XMO's aspects and impacts is undertaken annually to ensure that any new aspects or impacts are identified and added to the register.

Prior to undertaking any new activities or planning significant changes to the operation a risk assessment will be undertaken in accordance with the XCN Risk and Change Management Standard to ensure that any new aspects and impacts are identified and added to the register.

The results of risk reviews are to be incorporated into the environmental objectives and targets (where appropriate), management programs and work procedures at the next review of the EMS.

Management of Environmental Impacts

Environmental impacts from Mt Owen Complex Operations are managed and mitigated through the implementation of the EMS, comprising environmental procedures, environmental management plans and monitoring programs.

XMO's environmental management plans/procedures provide an overview of specific environmental aspects and impacts associated with the continued operations. These plans/procedures also outline the management measures that the site will undertake to minimise environmental impacts.

Each of the Mt Owen, Ravensworth East and Glendell Mine development consents specify a number of environmental management plans, monitoring programs and other requirements to be developed to assist XMO with managing impacts from its operation, including those contained in

Table 4. Significant replication is seen throughout the consents and as such, MOC's approach is to integrate these plans where possible. This will enhance a site wide approach to key aspects and impacts.

Table 4 – Mt Owen Complex Environmental Management Plans and Programs

Impact	Requirement of Development Consent (DA 80/952)	Requirement of Development Consent (DA 14-1-2004)	Requirement of Development Consent (DA 52-03-99)	MOC Approach
Air Quality	<ul style="list-style-type: none"> • Air Quality Monitoring Program • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Air Quality Monitoring Program • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Air Quality Monitoring Program • Environmental Monitoring Program 	Integrated MOC Air Quality Monitoring Program
Noise	<ul style="list-style-type: none"> • Noise Monitoring Program • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Noise Monitoring Program • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Noise Monitoring Program • Environmental Monitoring Program 	Integrated MOC Noise Monitoring Program
Blasting	<ul style="list-style-type: none"> • Blast Monitoring Program • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Blast Management Plan • Blasting Hotline • Environmental Monitoring Program 	<ul style="list-style-type: none"> • Blast Management Plan • Blasting Hotline • Environmental Monitoring Program 	Integrated MOC Blast Management Plan
Water Resources	Site Water Management Plan	Water Management Plan	Water Management Plan	Integrated MOC Water Management Plan
Land (incl. Ecology)	Landscape Management Plan (incorporating) <ul style="list-style-type: none"> • Rehabilitation and Offset Management Plan • Final Void Management Plan • Mine Closure Plan 	<ul style="list-style-type: none"> • Final Void Management Plan • Flora and Fauna Management Plan 	<ul style="list-style-type: none"> • Final Void Management Plan • Flora and Fauna Management Plan 	Integrated MOC Land Management Plan
Aboriginal Cultural Heritage	<ul style="list-style-type: none"> • Aboriginal Cultural Heritage Management Plan 	<ul style="list-style-type: none"> • Archaeological Salvage Program 		
Traffic and Transport	Construction Traffic Management Plan	Construction Traffic Management Plan		
Lighting	All external lighting in accordance with	All external lighting in accordance with	All external lighting in accordance with	

Impact	Requirement of Development Consent (DA 80/952)	Requirement of Development Consent (DA 14-1-2004)	Requirement of Development Consent (DA 52-03-99)	MOC Approach
	Australian Standard AS4282 (INT) 1995 – Control and Obtrusive Effects of Outdoor Lighting.	Australian Standard AS4282 (INT) 1995 – Control and Obtrusive Effects of Outdoor Lighting.	Australian Standard AS4282 (INT) 1995 – Control and Obtrusive Effects of Outdoor Lighting.	
Socio Economic	No specific requirement General accordance with EA.	No specific requirement General accordance with EA.	No specific requirement General accordance with EA.	Mt Owen Complex Social Involvement Plan
Greenhouse Gas	Greenhouse and Energy Efficiency Plan			Incorporated as Appendix in Air Quality & Greenhouse Management Plan

The implementation of these management plans, monitoring programs and the associated procedures will assist XMO to effectively manage environmental and community performance of the Mt Owen Complex and reduce cumulative environmental impacts. The implementation of these management plans will be the responsibility of all employees at the Mt Owen Complex and will be overseen by the XMO E&C Manager.

3.6 Environmental Awareness, Training and Competency

Training forms an integral part of environmental management. All personnel and contractors at the Mt Owen Complex undergo Environmental Induction Training, before being allowed to commence work on site.

Environmental Awareness training is conducted regularly and undertaken by all employees and permanent full-time contractors. The training includes:

- the environment and community context within which Mt Owen Complex operates;
- the environmental policies and the importance of conformance;
- relevant legal and other requirements;
- the significant environmental aspects and impacts associated with the operation and relevant operational controls;
- their roles and responsibilities in achieving conformance with the environmental policies and requirements of the relevant EMS, including emergency preparedness and response requirements;
- the potential consequences of non-compliance with environmental policy and environmental requirements;

- community involvement/relations; and
- cultural awareness.

Employees and permanent full-time contractors also undergo specific training typically undertaken as tool-box talks for relevant personnel. This type of training is provided on an as-needed basis, for example, following the identification of a new environmental risk, relevant changes in legislation or a change in operations. The XMO E&C Manager shall oversee the identification of environmental training needs of personnel.

Allocation of resources to provide these training needs shall be incorporated into the environmental management programs.

The responsibility for co-ordination of environmental training for the Mt Owen Complex personnel is vested in the E&C Manager. These responsibilities include development of training modules and toolbox talks for aspects of Mt Owen Complex operations that may potentially result in significant environmental impacts. Environmental training is incorporated into the broader training program for the site including health, safety and operational training.

Training module documentation and records of all training provided shall be maintained in the Mt Owen Complex HR filing system, including the results of competency assessment generally in accordance with the XCN Training and Inductions Standard. The effectiveness of training modules and sessions shall be periodically reviewed and the training modules updated as required.

3.7 Communication and Reporting

Effective communication between XMO management, employees and contractors and communication between XMO and external stakeholders is important for the successful operation of the Mt Owen Complex EMS's. All communication and reporting shall be undertaken in accordance with the specific procedures outlined within the EMS.

Internal Communication

The Mt Owen Complex HSEC Policy and general responsibilities under the relevant EMS are communicated to all personnel during an induction prior to commencement of work at the Mt Owen Complex (refer to **Section 3.6**).

The specific environmental impacts associated with particular aspects of the Mt Owen Complex are discussed during regular toolbox talks.

All personnel are encouraged and required to report environmental incidents and non-conformances to their immediate supervisor who will then complete an incident/complaint form and forward the details of the incident or non-conformance to the XMO E&C Manager or Thiess ECC for investigation and corrective and/or preventative action. The XMO E&C Manager or Thiess ECC shall investigate the incident or complaint and prepare an investigation report, which includes recommendations for preventative and/or corrective action. Communication of complaints or incidents to the relevant managers will be undertaken as per the site incident reporting requirements.

External Communication

External Stakeholders

All external reporting of environmental matters associated with the Mt Owen Complex, including the Annual Environmental Management Report (AEMR), shall be undertaken by the XMO E&C Manager.

An environmental reporting schedule is maintained as part of the EMS by the XMO E&C Manager. The schedule includes the timeframe for communicating the Mt Owen Complex environmental activities and performance to statutory authorities. The XMO E&C Manager also maintains an obligations register within the EMS. This register summarises conditions to be met in relation to development consents, permits and licences, including communication and reporting requirements.

External stakeholders identified in the site's stakeholder database are kept informed of the operational, environmental and social performance in accordance with the *Mt Owen Complex Social Involvement Plan*. Communication with these stakeholders on environmental matters is to be undertaken in accordance with the agreed community engagement protocol.

XMO produces a six monthly newsletter, which is distributed to all identified internal and external stakeholders. This newsletter details current operational, environmental and community issues, initiatives and site activities.

The Mt Owen Complex Website (<http://www.mtowencomplex.com.au/>) will be maintained to provide the wider community with access to the Mt Owen Complex monitoring results, details of current activities, scheduled blast times, policies, environmental management plans and monitoring programs and any other information in relation to the site operation that may be considered of interest to the community. It is the responsibility of the XMO E&C Manager to maintain the website. The XMO Operations Manager and E&C Manager will be responsible for authorising all information that is made publicly available on the XMO website.

Media Communication

Communication with the media is prohibited at the Mt Owen Complex without approval from the XMO General Manager and the Xstrata Coal Corporate Affairs Manager.

Community Consultative Committee

Consultation with the local community will be continued through the Mt Owen Complex Community Consultative Committee (CCC) in accordance with the relevant development consents.

The CCC is required to meet three times a year, or as agreed by the Director-General, throughout the life of the Mt Owen Complex operations. It is the responsibility of the XMO E&C Manager to ensure minutes of the Committee meetings are taken and that these minutes are made available on the Mt Owen Complex Website and for public inspection at Singleton Council within 14 days of the meeting, or as otherwise agreed by the Committee.

Reporting

All internal and external reporting is undertaken in accordance with the obligation register identified in the Mt Owen/Ravensworth East and Glendell EMS's. XMO are required to periodically report on environmental management and compliance, including:

- an Annual Environmental Management Report (external);
- an Annual Environmental Protection Licence Return (external);
- HSEC Reporting (internal); and
- Monthly Sustainability Reporting (internal).

3.8 Document Control

MOCs environment and community records are to be maintained in accordance with the XCN Legal Compliance and Document Control Standard including:

- utilisation of the Mt Owen Complex Intranet for the maintenance of the relevant EMS and its components. This enables access to standards, forms, procedures, policies and audit results;
- utilisation of *XstraSafe* database for the recording of all incidents and complaints, approvals and compliance information as well as risk register templates;

3.9 EMS Records and Information Management

All EMS records are to be maintained in the appropriate location, as detailed throughout this document, in a legible form for a minimum period of four years in accordance with the XCN Legal Compliance and Document Control Standard.

A master copy of the EMS and its components, including strategies, management plans, procedures and supporting information is held in the office of the XMO E&C Manager, which are kept legible and filed for a minimum period of four years;

- all letters, action plans and monitoring results relating to compliance must be scanned and kept on the Mt Owen Complex computer network drive. If viewing by other XCN employees is necessary, the document must be put on the Mt Owen Complex intranet; and
- all documents must be consistent with the XCN Intranet format using the XCN Group standards template and be approved by the Mt Owen Complex Operations Manager in accordance with the requirements of the XCN Legal Compliance and Document Control Standard.

The EMS is to be reviewed at least every three years and updated, as required.

3.10 Emergency Preparedness and Response

XMO maintains emergency response plans aligned to the XCN Crisis Management Plan and in consultation with external emergency agencies generally in accordance with the XCN Emergency Management Plan. XMO shall also undertake a Broad Brush Risk Assessment in accordance with the XCN Risk and Change Management Standard to identify foreseeable

site emergencies. This assessment shall be reviewed annually and reassessed at least every 5 years.

3.11 Emergency Response

Emergency response actions and responsibilities are detailed in the respective site Emergency Response Plans. The Emergency Response Plans document the responsibilities of key Mt Owen Complex personnel in the event of an emergency and the contact details for appropriate emergency services. Any changes to emergency procedures are to be documented and communicated to all personnel

During the conduct of the risk reviews, identification of all potential emergency situations that could result in significant environmental impacts is undertaken. Emergency responses to these potential situations are to be incorporated into subsequent reviews and updates of all emergency procedures. An appropriate level of preparedness is maintained relative to the level of risk for each identified potential emergency situation.

All personnel receive an appropriate level of emergency preparedness and response training. The Mt Owen Complex maintains a dedicated emergency response team who undergo regular training and operational drills. Relevant managers are to consider environmental emergency preparedness drills to train for foreseeable events.

Incidents

Within 24 hours of detecting an exceedance of the limits/performance criteria relating to the environmental performance of the complex, XMO E&C Manager will notify DoPI and other relevant regulatory agencies of the exceedance/incident.

Within six days, or as specified by the relevant regulatory authority, of notifying the DoPI and other relevant agencies of an exceedance of the limits/performance criteria, XMO will provide the DoPI and other relevant agencies with a written report that:

- (a) describes the date, time, and nature of the exceedance/incident;
- (b) identifies the cause (or likely cause) of the exceedance/incident;
- (c) describes what action has been taken to date; and
- (d) describes the proposed measures to address the exceedance/incident

At Mt Owen complex, incident recording forms are located at all site offices and completed forms are to be forwarded to the MOC E & C Manager. Completed forms are to be filed in and retained for a period of at least four years. The Thiess ECC is to conduct an investigation into each environmental incident at Mt Owen. The XMO ECC will undertake a similar duty at Glendell mine, Ravensworth East or the Mt Owen CHPP area.

A review of the effectiveness of the corrective or preventative action is to be undertaken within one month of the occurrence of the incident and the relevant procedures are to be updated as required. Any changes to procedures as a result of these reviews are to be documented as per the sites Change Management policy and communicated to all personnel.

4. MEASUREMENT AND EVALUATION

4.1 Environmental Monitoring, Corrective Action and Audits

Environmental Monitoring

Environmental monitoring to determine conformance of the Mt Owen Complex with the relevant EMS is to be managed by the XMO E&C Manager. Monitoring is undertaken in accordance with the Environmental Monitoring Program and individual Management Plans and programs prepared in accordance with the Development Consent Conditions (refer to

Table 4). A schedule of environmental monitoring undertaken is also contained within the Environmental Monitoring Program along with an environmental monitoring site location plan.

The purpose of this monitoring is to provide a measure of the performance of the operation, which can be compared against the objectives, targets and performance criteria specified in the Mt Owen Complex Licences, Consent Conditions and EMS.

All monitoring is undertaken using standard monitoring techniques and calibrated equipment operated by trained personnel. Analysis of samples is to be undertaken in accordance with the Development Consent and OEH licence conditions.

All monitoring results are to be filed by the XMO E&C Manager and maintained on site for at least four years. Monitoring results are compared against development consent, licence and permit conditions and any non-conformance recorded against the monitoring result. In the event of a non-conformance the XMO E&C Manager are to investigate the cause of the non-conformance and recommend corrective and/or preventative action. The effectiveness of the corrective and/or preventative action is to be assessed by analysis of the next available monitoring results and during the next monthly site inspection.

Any changes to work procedures as a result of the corrective or preventative action are to be documented and communicated as per the sites change management procedure.

Calibration records are kept of the monitoring equipment used. Calibration will be undertaken in accordance with the equipment manufacturer's recommendations. Where monitoring is outsourced, the consulting body is responsible for maintaining calibration and supplying the relevant documentation.

Inspections

Monthly environmental inspections of the Mt Owen Complex operations are conducted. These inspections are to determine, in conjunction with the environmental monitoring and incident/complaint reporting procedures, on-site compliance with the EMS's. Site inspections are to be conducted by the XMO E&C Manager, or his/her delegate and the inspection results recorded on the inspection form.

Any non-conformances are to be recorded on the inspection form and the cause of the non-conformance investigated by the XMO E&C Manager or their delegate. Corrective and/or preventative action is to be recommended by the person undertaking the inspection and the effectiveness of the corrective and/or preventative action assessed at the next monthly site inspection. Any actions arising from site inspections will be entered into the sites action based reporting tool *XstraSafe*. The XMO E&C Manager will report any significant non-conformances arising from site inspections to the Operations Manager and General Manager.

Audits

Internal Audits

Internal EMS audits will be undertaken generally in accordance with the XCN Auditing Standard. Internal EMS audits will be undertaken to assess whether the relevant EMS has been properly implemented and maintained and conforms to the environmental policy, objectives and targets of Mt Owen Complex. A schedule of Environmental Audits is maintained within the Mt Owen Complex EMSs.

Internal auditors are to be selected on the basis of their understanding of environmental management principles and mining operations. Internal auditors shall be suitably qualified and experienced and be capable of impartially and objectively auditing the Mt Owen Complex EMSs.

The results are communicated to senior management and employees in accordance with the Mt Owen/Ravensworth East and Glendell EMS Communication Procedures. Actions and recommendations from internal audits undertaken on site will also be entered into the sites action based reporting tool *XstraSafe*.

Xstrata Coal also undertakes a regular audit program to assess the sites implementation of corporate standards and the implementation of the Business Unit Environmental Management System.

The Mt Owen operation of the Mt Owen Complex is operated through a contract agreement with Thiess, as discussed in **Section 1.1**. Regular audits of the Thiess Management System are also conducted to determine whether the EMS has been properly implemented and conform to the environmental policy, objectives and targets of the Mt Owen Complex.

External Audits

Independent environmental compliance audits of the operation are to be conducted at least every three years in accordance with Condition 6, Schedule 6 of the Mt Owen Development Consent, Condition 6, Schedule 6 of the Ravensworth East Development Consent and Condition 6, Schedule 5 of the Glendell Development Consent.

External auditors are to be selected on the basis of their understanding of environmental management principles and mining operations. External auditors shall be suitably qualified and experienced and be capable of impartially and objectively auditing the Mt Owen Complex. The selection of external auditors will be the responsibility of the XMO E&C Manager and the Operations Manager, to the satisfaction of DoPI.

Actions and recommendations from external audits will be communicated to senior management and employees in accordance with relevant EMS communication procedures and will be entered into the sites action based reporting tool *XstraSafe*.

5. REVIEW AND IMPROVEMENT

5.1 Non Conformity, Corrective Action and Preventative Action

XMO manages all non-conformances or non compliances in accordance with the XCN Communication and Engagement Standard, XCN Incident Management Standard, XCN Hazard Management Standard and the XCN Monitoring and Review Standard.

On receipt of an incident/complaint reporting form, site inspection form, and hazard report or monitoring result that indicates a potential or actual non-conformance of the Mt Owen Complex with the relevant EMSs, the XMO E&C Manager is to coordinate an investigation and recommend corrective or preventative action.

Details of the required action(s) are to be communicated to the relevant supervisor of the specific operations area and a copy of the communications kept with the investigation report. The effectiveness of the requested action is to be assessed within one month of the non-conformance.

Corrective and preventative actions relating to environmental aspects specifically identified within the Development Consents are addressed within the dedicated Environmental Management Plans and Programs as required by the Consents.

5.2 Complaints Management and Dispute Resolution

Complaints Management

XMO maintains a dedicated freecall community response line. The XMO E&C Manager is responsible for ensuring that the currency and effectiveness of the service is maintained. The existence of the community response line is advertised at least quarterly in the local press. Details are also provided in each edition of the Mt Owen Community and Employee Newsletter and on the Mt Owen Complex website. The E&C Manager is responsible for ensuring the Hotline is advertised.

As a minimum, notification of complaints received via the community response line is to be provided by immediate SMS relay to the XMO E&C Manager, and the Mt Owen and Glendell Production Supervisor on-shift.

Complaints and enquiries do not have to be received on the Hotline and may be received in any other form. Any complaint or enquiry relating to environmental management or performance is to be relayed to the XMO E&C Manager as soon as practical. All employees are responsible for ensuring the prompt relaying of complaints.

The XMO E&C Manager are responsible for ensuring that all complaints are appropriately investigated, actioned and that information is fed back to the complainant, unless requested to the contrary.

The XMO E&C Manager shall communicate all complaints to the Operations Manager, General Manager and the relevant site functional Manager as soon as practical, but as a maximum on the next working day.

A summary of complaints received is reported internally, in the Monthly Operations Report for the MOC. A summary of complaints received and actions taken is presented in the Annual Environmental Management Reports, the Annual Returns and to the MOC CCC as part of the operational performance review.

Dispute Resolution

Community

In the event of a disagreement between XMO and a member of the community, the XMO E&C Manager will undertake the necessary liaison and communication to reach a resolution, which will involve an offer for a one on one meeting with the resident to discuss the issue. Where relevant, negotiations will be initiated in accordance with the applicable Development Consent Conditions.

In relation to a dispute over acquisition of a property, if the matter cannot be resolved between the company and the resident, the matter is to be referred to the Director-General of DoPI for resolution, in accordance with the Conditions of Consent.

Operations

Procedures for dispute resolution, in relation to areas of environmental management, are specified in the development consent conditions. The Independent Dispute Resolution Process from the Mt Owen, Ravensworth East and Glendell Development Consents is shown in **Figure 4**.

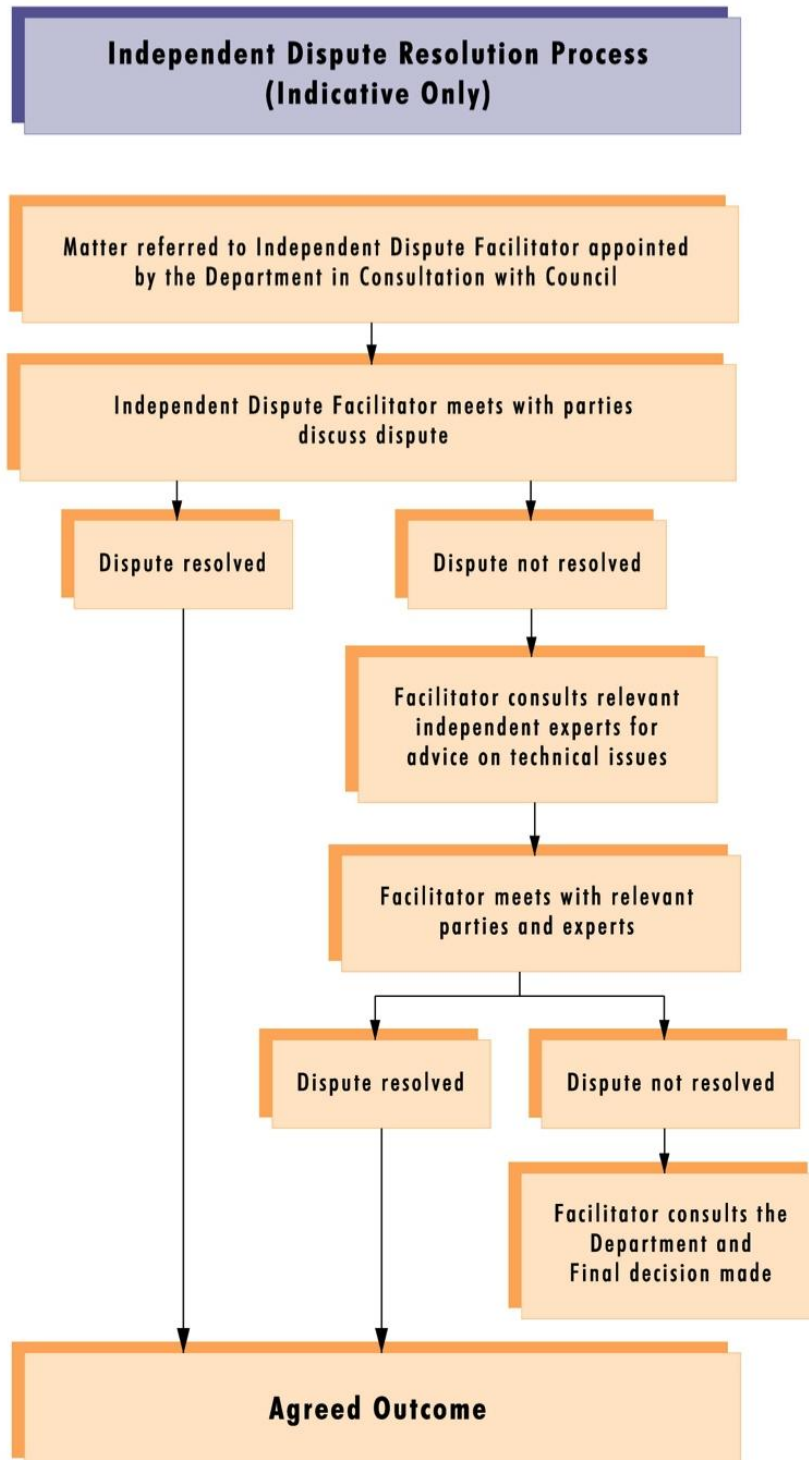


Figure 4 Dispute Resolution Process

Source: NSW Department of Planning & Infrastructure

5.3 Management Review

The review and revision of the EMS are to be undertaken by senior management. The EMS review will include:

- review of audit findings;
- results of monitoring programs;
- achievement of objectives and targets;
- relevance of the Policy, objectives and targets to current and future conditions; and
- information and concerns of stakeholders.

Reviews will be undertaken annually and may be incorporated into the Mt Owen Complex Operations Management System Review Process.

5.4 Strategic Review

This Strategy will be reviewed, and revised as necessary, within three months of the completion of each Independent Environmental Audit in accordance with Condition 2, Schedule 6 of the Ravensworth East consent, Condition 2, of Schedule 6 of the Mt Owen consent and Condition 8, of Schedule 5 of the Glendell consent,. If any significant changes are made to the Strategy as part of one of these reviews, the revised Strategy will be provided to the DoPI for approval.

5.5 Management of Cumulative Impacts

Cumulative impacts from mining operations regarding aspects such as noise, air quality, surface and ground water will be addressed in the AEMR each year. Mitigation measure implemented will be detailed including an assessment of the effectiveness of their implementation.

Mt Owen Complex shall also consider the consultation with Xstrata Coal when applying broader remediation work to assess cross functional remediation works that may be being conducted at corporate levels.

6. DEFINITIONS

Term	Definition
audit	A systematic examination against defined criteria to determine whether activities and related results conform to planned arrangements and commitments. In addition, whether these arrangements and commitments are implemented effectively and are suitably achieved in accordance with the organisation's policy.
continual improvement	Process of enhancing the environmental management system to achieve improvements in overall environmental performance that are consistent with environment and community policies of Xstrata Mt Owen.
community complaint	A complaint made by any person within the community regarding the activities of Xstrata Mt Owen.
controlled document	A document for which it is critical that only the latest revision is in use. In light of this, its existence, movement, availability and eventual withdrawal is monitored, controlled and documented in a standardised manner.
EMS Procedure	A description of a system or operation that may have an effect on the environment, or that is required in order to manage environmental impacts or implement the EMS.
environment	Surroundings in which Xstrata Mt Owen operates, including air, water, noise, land, flora, fauna, natural resources, humans and their interaction.
environmental aspect	An element of Xstrata Mt Owen Complex's activities, products or services that can interact with the environment.
environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from Xstrata Mt Owen Complex's activities, products or services.
environmental incident	Includes pollution incidents (including near misses), non-conformance with statutory requirements.
environmental management plan	Documentation of environmental controls developed in order to minimise environmental pollution.
environmental management system audit	Systematic and documented verification process of obtaining and evaluating evidence to determine objectively whether the Mt Owen Complex environmental management system conforms to the environmental management system audit criteria set by Xstrata Mt Owen, and communication of the audit findings to senior management.
environmental objective	Overall environmental goal, arising from the environmental policy, that Xstrata Mt Owen aims to achieve, and which is quantified where practicable.
environmental performance	Measurable results of the environmental management system, related to Xstrata Mt Owen Complex's control of its environmental aspects, based on environmental policy, objectives and targets.
environmental policy	Statement of Xstrata Mt Owen Complex's intentions and principles in relation to overall environmental performance, which provides a framework for action

Term	Definition
	and for setting of its environmental objectives and targets.
environmental target	Detailed performance requirement, quantified where practicable, applicable to Xstrata Mt Owen Complex or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
external stakeholder	Individual or group concerned with or affected by the environmental performance of Xstrata Mt Owen Complex.
ISO 14001	International standard specifying the requirements of an environmental management system.
non-conformance	Where any statutory requirement has not been met.
personnel	All staff and contractors that perform work for Xstrata Mt Owen Complex.
pollution incident	Any potential or actual harm to the health and safety of human beings or to ecosystems caused as a result of carrying out activities associated with the operation.
prevention of pollution	Use of process, practices, materials or products that avoid, reduce or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of resources and materials substitution.
site environmental procedure	A description of required processes in sufficient detail to facilitate the competent completion of the tasks with due consideration for the qualifications of the personnel completing the task.
uncontrolled document	Any document which relates to the environmental management system which is not a controlled document.

NB: definitions sourced from ISO14000 series, where available.

7. ACCOUNTABILITIES

7.1 Structure and Responsibility

Operational control of the environmental aspects and impacts at the Mt Owen Complex will be undertaken in accordance with the MOC EMS, including environmental/work procedures and environmental management plans.

Environmental management at the Mt Owen Complex is the responsibility of all employees and contractors, with the relevant Operations Manager and General Manager having overall responsibility for environmental management of the site.

Role	Accountabilities for this document
Operations Managers and General Manager	Have ultimate responsibility to ensure this strategy is implemented;
Line Managers and Supervisors	Have responsibility to ensure activities under their control are completed in accordance with the site EMS and related strategies, plans, procedures, and programs;
Operational personnel	Engaged in field activities must comply with the requirements of this strategy and the site's EMS; and
E&C Manager	Shall develop and maintain the EMS Shall ensure all staff are inducted and trained in the requirements of the site EMS.

Environmental responsibilities for key personnel at the Mt Owen Complex are contained within the individual operations environmental management plans and procedures.

Management at all levels and supervisory personnel are to lead by example and set the highest standards for environmental management. They are to act immediately to correct any nonconforming conditions or behaviours and promote environmental awareness, good environmental behaviours and continual improvement at every opportunity.

The environment and community related responsibilities of all staff have been detailed in individual position descriptions. Responsibilities are also described in the various Mt Owen Complex work procedures.

No personnel are permitted to undertake a task unless they have undertaken the required training, are competent and confident that the task can be conducted in an environmentally safe manner, with minimal impact on the community.

8. REFERENCES

8.1 Legislation

- n/a

8.2 Australian Standards

- AS/NZS ISO 14004:2004 Environmental Management Systems – General guidelines on principles, systems and supporting techniques.

8.3 Xstrata plc

- Xstrata PLC Sustainable Development Standards

8.4 Xstrata Coal NSW

- XCN Risk and Change Management Standard
- XCN Legal Compliance and Document Control Standard
- XCN Emergency Management Plan
- XCN Crisis Management Plan
- XCN Communication and Engagement Standard
- XCN Incident Management Standard
- XCN Hazard Management Standard

8.5 Mt Owen Complex

- ERM Mitchell McCotter (1999). Ravensworth East Mine Environmental Impact Statement. Prepared for Peabody Resources Limited.
- Umwelt (Australia) Pty Limited, 2003. The Mt Owen Operations Environmental Impact Statement.
- Umwelt (Australia) Pty Limited (2007b). Environmental Assessment for Modification of Glendell Mine Operations. Prepared for Xstrata Coal Mt Owen Complex.
- Mt Owen Complex Social Involvement Plan.

9. APPENDICES

Nil

10. CONTROL AND REVISION HISTORY

10.1 Revision Status Register

A summary of the revision status of this Strategy is provided in **Table 5**.

Table 5 - Revision status

Section/ Page/ Annexure	Revision No.	Amendment/Addition	Authorised	Approved	Date
All	A0	Original			May 2005
All	A1	Revision 1			April 2008
All	A2	Revision 2			November 2011

Version	Date reviewed	Review team (consultation)	Nature of the amendment
1			
2	Nov 2011	MOC E&C Manager, E&C Coordinator	Update with current practices and applicable standards
3			

10.2 Distribution Register

The Environmental Management Strategy is maintained in an electronic form. Electronic copies are considered controlled and may only be updated by the site E&C Manager. Mt Owen Complex employees with local computer network access will be able to view the controlled electronic version of this Strategy on either the Thiess or XMO networks.

A copy of the Strategy has also been supplied to Singleton Council, and the Mt Owen Complex Community Consultative Committee as required by Schedule 6 of the Mt Owen and Ravensworth East Development Consent and Schedule 5 of the Glendell Development Consent. A copy is also to be placed on the Mt Owen Complex website. The site E&C Manager shall not be responsible for maintaining external holder versions.

10.3 Document information

Property	Value
Approved by	<<Type name of document approver>>
Document Owner	<<Type name of document owner>>
Effective Date	N/A
Keywords	<<Type list of keywords>>

For a complete list of document properties, select **View Properties** from the document's context menu on the intranet.